BEER WORTH FINDING®
VERMONT BREWERS ASSOCIATION

Wastewater Guidance

Definitions

- Compostable Solids - Any waste solids from the Mash/Lauter Tun including spent grains, any malt dust from the brewing process, as well as specialty ingredients such as fruits and vegetables used in the brewing process.
- First Rinse - First rinse water containings solids produced when process and materials storage tanks are taken off line and manually rinse with clean water, prior to activating the Clean in Place (CIP) system.
- High Strength Waste - Anything outside of the parameters laid out below will require pre-treatment and potential wastewater permitting:
    - Discharge Flow ≥25,000 gallons per day
    - Biological Oxygen Demand (BOD) 250-350 mg/l (Typical untreated levels as high as 15,000 mg/l)
    - Total Suspended Solids (TSS) 250-350 mg/l (Typical untreated levels as high as 15,000 mg/l)
    - pH 7.0-8.5 (Typical untreated levels as low as pH 5.0)
    - Temperature <150℉ (Untreated temperatures can be as high as 212℉)

  This waste includes; first rinse from any storage vessels, including but not limited to Mash/Lauter Tun, Boil Kettle, Whirlpool, Fermentors, Brite tanks, and kegs. High Strength waste also includes unfermented wort, trub, yeast, contaminated or unsaleable beer, heavily soiled CIP water, and beer waste from any point in the process.
- Process Wastewater - Includes CIP system discharge, secondary and final rinses on storage vessels, floor washdown, and general cleaning processes. In some instances the CIP system discharge will be outside of the pH range outlined above or even heavily soiled. In these cases, the entire volume should be collected in a designated vessel for pH adjustment and/or solids settling prior to release to the sewer or septic system.

The Brewing Process

High strength wastes should be separated from the process wastewater stream and stored in IBC Totes for chemical and temperature adjustment and solids settling to accepted parameters (outlined above) before transfer to a digester or controlled release to septic or a wastewater system. “First rinse” collection allows removal of all high strength waste from the brewing tanks and kegs prior to connecting the CIP system such as:

- Any unusable yeast, residual beer, hop material, and trub leftover in the fermentation vessels
- Residual beer leftover in the kegs, as well as the first rinse of the kegs.

There should be no “first rinse” water or solids which get passed on to the wastewater system.

All instances of untreated beer and yeast are also high strength wastes and should be collected in buckets or plastic tubs sized for this purpose and manually added to the same IBC Totes outlined above. Instances include:

- Beer and yeast to blow off from the fermentation tank
- An entire fermenting tank of beer gets dumped, due to poor quality
- Beer used to flush the bottling and canning machines or kegging lines

When an IBC tote is sufficiently full of high strength waste, the waste can be chemically adjusted and solids allowed to settle before transfer to a digester or controlled release to septic or a wastewater system.

As part of the brewing process, the wort is pumped from the Mash/Lauter Tun to the Brew Kettle, leaving only spent grain solids behind. Downstream in the brewing process from the brew kettle is the whirlpool. This tank separates spent hops from the brew. These spent grain and hops are compostable solids that should be transferred into covered bins until they can be taken off-site for animal feed or composting.

All other process wastes generated through the brewing process are “low strength” and travel to the drainage system unless otherwise noted.