

ALCOHOL PRODUCTION AND FERMENTATION BEST MANAGEMENT PRACTICES (BMPs)



**BREWERY FERMENTERS,
A SOURCE OF WASTEWATER**



**BREWERY SPENT
GRAIN SEPARATION**



**COAGULATED SOLIDS FLOAT ON
TOP OF WASTEWATER**

WASTEWATER SOURCES

- » Cleaning of tanks, equipment, and floors
- » Caustic and acid discharges from clean-in-place (CIP) process
- » Spent grains, hops, and/or yeast solutions
- » Non-contact heat exchanger cooling water
- » Keg/barrel washing and bottling cleaning

SIDE STREAM HIGH STRENGTH WASTE

Side streaming involves the separation of high-strength concentrated wastes at the source for alternative disposal. High-strength wastes that are subject to side streaming include:

- » Fermenter bottoms
- » Spent Yeast
- » Returned beer in kegs
- » Fermenter blow off
- » Beer in hoses or pipes, at the beginning or end of a packaging run
- » Removal of solids, such as spent grain

These wastes should be diverted for composting or for another beneficial use, depending on the nature of the waste.

MANAGE SOLIDS

Settleable solids are particles which will settle to the bottom of a container of still water. There are several strategies used to remove settleable solids from process wastewater:

- » Screening, with redundancies, such as an additional screening basket at the end of the line.
- » Coagulation/flocculation chemicals, such as alum or polymers that float or precipitate out solids.



AUTOMATED BREWERY COOLING WATER SYSTEM



pH ADJUSTMENT TANK

COOL WASTEWATER

Cool wastewater to less than 130° Fahrenheit (54° Celsius) before discharge in the Spokane County service area or less than 140° F (60° Celsius) in the City of Spokane and Airway Heights service areas. Excessive heat has the potential to inhibit biological activity in the sewer and treatment plant resulting in interference.

ADJUST pH

Check the pH of the wastewater and adjust before discharge to the sewer. The pH of fermentation wastewater has a wide range, depending on the process being conducted. On fermentation and packaging days, the pH will tend to be low, around 5.0. On CIP days, the pH will be high, around 11.0. If pH exceeds the Spokane County service area limit range of 5.0-11.0, or the City of Spokane and Airway Heights service areas range of 5.0-12.0, this exceedence will need to be chemically adjusted before discharge into the sewer.

OTHER BMPs

- » Clearly label all storage and waste containers with content information.
- » Keep containers closed, except when adding or removing materials.
- » Install secondary containment for all liquid storage that is capable of holding 110% of the largest possible spill.
- » Develop and implement written spill response procedures and train employees.
- » Have spill prevention and clean-up materials on-site and available for use.
- » Immediately clean up spills and replace any leaking containers.

CONTACT US



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