

FACT SHEET

Breweries and Distilleries

An Environmental Permitting and Pollution Prevention Factsheet



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Breweries and related facilities (e.g., distilleries, cideries) are a fast-growing sector with close to 130 operating across Connecticut (as of November 2021, according to the CT [Brewers Guild](#)) and several more planning to open soon. Many are locating in old industrial complexes, repurposing old mills into modern day beer manufacturing facilities and taprooms. Breweries are a welcome addition to Connecticut's economy and the Connecticut Department of Energy & Environmental Protection (DEEP) wants to work with the industry to make sure that breweries are operated in an environmentally appropriate manner.

The brewing process uses large amounts of energy and water and generates high volumes of high strength wastewater with byproduct wastes. DEEP has a [Sustainable Breweries webpage](#) with information on reducing pollution, minimizing waste, and implementing energy efficiency actions. Breweries are considered food processors and are subject to some of Connecticut's environmental laws and regulations.

Environmental permits are necessary to make sure that equipment and systems are built and operated in accordance with best practices and in a manner that protects the environment and public health. DEEP has put together this fact sheet to assist breweries and related facilities with understanding the variety of state environmental permits that may be needed to operate, the timing and sequencing of those permits, and some basic suggestions on best practices to prevent pollution. Not all of the permits listed in this factsheet may be necessary, and state permitting requirements will be dependent on the facility and how much waste is generated.

For projects that will need multiple environmental permits, [DEEP's Concierge and Permit Assistance service](#) is available for pre-application assistance. A pre-application meeting gives the applicant an opportunity to present their proposed project to DEEP's permit program staff, review the expected permitting forms, and address any questions or concerns either the applicant or DEEP may have. To schedule a meeting, please complete the [Pre-Application Questionnaire](#) and submit it to DEEP.OPPD@ct.gov.

DEEP's Pollution Prevention program can assist with identifying voluntary actions to eliminate waste and reduce your environmental impact. For more information, please email DEEP.pollutionprevention@ct.gov.

You may find it beneficial to work with an experienced environmental consultant who is familiar with Connecticut's regulations to assist in obtaining any necessary environmental permits.

Local/municipal review and permitting may be required, such as building construction and wetlands. **Local permits are not covered in this factsheet.** Please contact the local planning office to ensure your project meets all local requirements. **Construction and operation cannot begin until permits are obtained.**

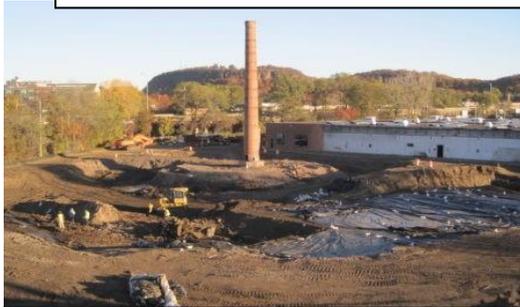
Links to all DEEP's permit program information and applications can be found at <https://portal.ct.gov/DEEP/Permits-and-Licenses/Permits-and-Licenses>.

I. Selecting a Site: Reusing old industrial buildings can be a good option for a brewery. Some of these sites may be **Brownfields**. A brownfield is any underutilized or abandoned property where redevelopment or reuse has not occurred due to the presence or potential presence of pollution in the buildings, soil, or groundwater that requires investigation or remediation before or in conjunction with the property's reuse. Siting a brewery on a brownfield typically involves the remediation, or clean up, of pollution by either the buyer or the seller of the property.



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Brownfield project: Bear's BBQ with brewery, New Haven



Before by Fuss & O'Neill



After by Skywise, LLC

Compliance with the [Remediation Standard Regulations, Section 22a-133k-1 through -3 of the Regulations of Connecticut State Agencies](#), is required and the land records should be consulted to determine whether any type of land use restriction exists as part of the site's remedial outcome. There are various liability relief programs for municipalities and individuals seeking to remediate a brownfield site. For information on available brownfield cleanup and redevelopment assistance, please visit the [Department of Economic and Community Development's, Office of Brownfield Remediation and Development webpage](#) and [DEEP's Brownfield Program webpage](#).

II. Natural Diversity Data Base (NDDB) – NDDB review is not required for projects that meet **each** of the following conditions: all work is limited to the footprint of an existing structure, all work will occur on existing impervious surface, and there are no discharges to nearby waterbodies. However, if project work alters an existing site footprint, includes areas of non-impervious surface (including staging, storage, and access areas), **or** discharges to nearby waterbodies, it will be necessary to consult with the NDDB program regarding impact-avoidance measures. Developers should begin this consultation by reviewing NDDB mapped areas to determine if the proposed project is in an area with documented listed species. If the project site is in a documented area, developers should submit a Request for Review. The [NDDB webpage](#) has useful FAQs, mapped NDDB areas, and information on requesting a NDDB Review. NDDB staff will review project details and provide measures to protect listed species in the NDDB Determination letter. The Determination Letter is required to be submitted with other state permit applications and general permit registrations. Please note it may take six to eight weeks to review and issue a Determination Letter, and, if biological survey work is deemed necessary, the process may take longer due to the seasonal timing of the surveys.

III. Stormwater – There are two types of stormwater permits that may apply to a project. The first is required for construction. The second may apply during the operation of the facility.

Any project disturbing one or more acres of land during construction must comply with the terms and conditions of the DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters



from Construction Activities (Construction Stormwater General Permit). Projects that disturb less than five acres and are subject to municipal review and approval can comply with the Construction Stormwater General Permit, without filing a registration with DEEP, by adhering to municipal land use requirements for erosion and sedimentation control; the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; and the 2004 Stormwater Quality Manual, as amended. A registration is required to be filed with DEEP for all projects subject to municipal review and approval that disturb five or more acres of land during construction, and for all other projects that are exempt from local review and approval that disturb one or more acres of land.

The estimated processing time for the [Construction Stormwater General Permit](#) registration is about 90 days. These timeframes include a 30-day public comment period.

Breweries require coverage under DEEP's [General Permit for the Discharge of Stormwater Associated with Industrial Activity](#) (Industrial Stormwater General Permit) if stormwater runoff from the site discharges to a surface water, wetlands or a municipal separate storm sewer system. The Industrial Stormwater General Permit requires registration by the operator of the facility to be filed with DEEP online; the development and implementation of a Stormwater Pollution Prevention Plan; inspections; and stormwater discharge monitoring. Facilities may be exempted from these requirements, however, by certifying that no materials or equipment are exposed to stormwater and by filing a No-Exposure Certification. The estimated processing time for a registration or No-Exposure Certification under the Industrial Stormwater General Permit is 90 days.

At any time, the Commissioner can determine that a discharge associated with a construction activity or a stormwater discharge associated with an industrial activity requires an individual permit under the National Pollutant Discharge Elimination System (NPDES) program and Connecticut's Water Pollution Control Act, typically for very large or more complex project sites, or sites with environmentally significant receptors or natural resources adjacent to the site or nearby. Likewise, an applicant can elect to apply for an individual permit rather than seek coverage under a Stormwater General Permit. Individual permit processing time can be longer, due to the individualized determinations that must be made.

- IV. Wastewater Discharge** – Typically large volumes of wastewaters are generated during the brewing process that have high biochemical oxygen demand (BOD), Chemical oxygen demand (COD), and total suspended solids (TSS), wide pH swings, high temperatures, and slug loading from batch discharges. If discharged to surface water or groundwater, these wastewaters can have significantly negative impacts to the waters of the State. If discharged to a sanitary sewer without proper pollution prevention, these wastewaters can damage the biological balance at the wastewater treatment plant. In both cases, significant public health nuisances and adverse environmental impacts can result. Under state law, all discharges are required to be regulated under a permit. Breweries that discharge greater than 1,000 gallons a day (gpd) of wastewater to a sanitary sewer system on any day or breweries that transport any amount of wastewater to a sewage treatment plant need to register for a permit. DEEP has

determined that brewery wastewater, if discharged to the sanitary sewer, may be eligible for one of the General Permits that establish limits on the pollutants that can be discharged:

- Significant Industrial User (SIU) General Permit - An SIU General Permit will be required for any brewery that discharges equal to or greater than 25,000 gpd to the sanitary sewer, on any day; has a wastewater that makes up 5% or more of the average dry weather flow or organic loading of the receiving WPCF; or has been determined by the Commissioner to be an SIU. SIU General Permit requires registration with DEEP. The typical processing timeframe for the SIU General Permit is 6 months.
- Miscellaneous Industrial User (MIU) General Permits – An MIU General permit will be required for any brewery that has a cumulative maximum daily flow greater than or equal to 1,000 gallons per day (gpd) and less than 25,000 gpd and for any brewery whose discharge will be transported to the receiving POTW.

These permits establish limits on the pollutants that can be discharged, based on where the wastewaters are discharged. It is important to note that any stormwater commingled with process wastewater will be deemed process wastewater and will not be authorized under the Industrial Stormwater General Permit. Most breweries in CT discharge under 25,000 gpd and, if discharging to the sanitary sewer, would likely fall within the MIU General Permit. MIU General Permit requires submittal of a Notification to the applicable POTW Authority.

The MIU and SIU require the following wastewater management:

- Isolation for proper disposal of grains, hops and other solids;
- Isolation of other high strength liquids like trub, yeast, waste fermentables or off-spec product; and
- Limiting the types of cleaners and disinfecting agents that can be used.



by Kat Marvshuk on Unsplash

Best management practices for wastewater discharge will remove high strength solids. Brewers should not allow beer to go down the drain, consider reusing final rinse water for pre-rinsing, and side-stream process wastes (by installing correct gauge screens, filters or baskets on all drains, and allow solids to settle). Often side-streamed waste, such as spent grains, yeast, and hops can be managed more efficiently (used for animal feed, composted, sent to a digester). The New Hampshire Department of Environmental Services Pollution Prevention program has developed a [Wastewater Best Practices for Breweries](#) guidance document; some of the recommendations may be adaptable to Connecticut breweries.



Discharging brewery wastewater to a septic system is typically not acceptable or feasible. The most common option is to collect and transport wastewater to a wastewater treatment plant (see DEEP's list of [Connecticut Publicly Owned Treatment Works \(POTWs\) Approved to Accept Transported, Non-domestic Wastewaters](#)) or to transport to a permitted anaerobic digester (AD) or composting facility.

It is recommended that you contact the municipal wastewater treatment plant that will receive your discharge. Having open communications with the facility will be helpful for the brewer to understand the constraints on the system and for the facility to understand the characteristics of the discharge and to get advance notice if a heavy concentration will need to be released. For further assistance regarding permitting requirements for process wastewater discharges management, contact the Water Permitting and Enforcement Division to discuss your project at (860) 424-3025 or go to our [webpage information on water discharge permits and general permits for process wastewaters](#).

- V. Solid Waste** – Breweries generate several types of solid waste. Some examples include cardboard, paper, plastics, aluminum, food waste from taprooms and food trucks, and, if side-streamed, waste from the brewing process.

Mandatory Recyclables – All businesses must comply with [Connecticut's recycling laws](#) that identify specific wastes and materials that are designated as mandatory recyclables and everyone needs to keep the designated recyclable items out of the trash and cause their proper recycling. Current designated recyclable items include: 1) glass and metal food containers; 2) high grade white office paper; 3) newspaper; 4) scrap metal; 5) corrugated cardboard; 6) waste oil; 7) motor vehicle storage batteries (e.g., lead acid storage batteries); 8) Ni-Cd rechargeable batteries; 9) leaves; 10) grass clippings; 11) HDPE and PETE plastic containers; 12) boxboard; 13) magazines; and 14) colored ledger paper. Please note that not all mandatory recyclables are allowed in your single stream recycle bin; scrap metal, waste oil, batteries, leaves, and grass must be recycled but managed separately.

Waste Streams from Brewing Process – Beer making produces several waste streams – spent grains, yeast, trub, and diatomaceous earth; these can be side-streamed, collected, and managed. These are referred to as organic wastes because they are biodegradable and can be reused as animal feed, added to compost, or sent to a permitted, commercial or farm-based anaerobic digester rather than being discharged with wastewater. Anaerobic digesters break down organic material and produce biogas that is often used to generate electricity.

Connecticut has a [Commercial Organics Recycling law \(CGS Section 22a-226e\)](#) that requires food manufacturers and processors (breweries and related facilities are included) that generate an average projected volume of not less than twenty-six tons per year and are located not more than twenty miles from an authorized source-separated organic material composting facility to separate the organic material from other wastes and recycle it at an authorized facility. DEEP has information on organics recycling options, including authorized and permitted facilities:

- [Permitted Volume Reduction Anaerobic Digestion and Food Waste Composting Facilities](#)
- [Food to Animal Feed Options](#)
- [Organics Management](#)



[Merrimack Ale provided by Utiliency.com]

Breweries should consider finding opportunities to reuse waste organics. Spent grains may be reused as animal feed, bakery ingredients, compost, or for biogas generation. Trub and spent yeast are best reused or used in compost or biogas generation. Diatomaceous earth used in the filtration process may be replaced with cross-flow filtration technology, composted, or reused in construction materials.

(Source: <https://epa.ohio.gov/Portals/29/documents/breweries.pdf>)

On-farm breweries may be able to use wastewaters produced for irrigation and agronomic requirements of crops during the growing season if adequate cropland is available. Development of a Comprehensive Nutrient Management Plan by a certified conservation planner is required to be submitted to DEEP for review and approval. You may contact the Water Planning and Enforcement Division at (860) 424-3018.

The [National Brewers Association](#) offers (to their members only) detailed guidance on best management practices for chemical and physical treatment, solid waste reduction, removal, and reuse in their *Water and Wastewater: Treatment/Volume Reduction Manual*, *Wastewater Management Guidance Manual*, and *Solid Waste Sustainability Manual*.

VI. Air – Craft breweries typically are small enough that they do not require any air permits for the brewing process itself. Large production facilities may require air permits; however, none are currently operating in Connecticut. Air permitting is triggered based on the potential emissions of air pollutants from the individual pieces of equipment and the aggregate potential emissions from the facility. Fermentation results in emissions of ethanol, which is an air pollutant. To estimate potential emissions from brewing, distilling, and wine making refer to AP-42:Compilation of Air Emissions Factors, [Chapter 9.12.1 to 9.12.3](#).

Additionally, some of the ancillary equipment commonly located at new, existing, and repurposed buildings in which breweries are commonly located may trigger air permitting. These ancillary sources could include oil or gas fired boilers for building heat and hot water and diesel, propane or natural gas fired back-up generators. To estimate potential emissions from boilers and back-up generators (also

known as “emergency engines”), calculators are available for both types of sources on the [Air Permitting Assistance webpage](#). If results from these calculators show that potential emissions of any individual air pollutant are above 15 tons per year, the source may require a permit. Similarly, there may be other types of heating, cooling equipment or other ancillary sources that may have emissions that trigger air permitting. An environmental consultant with experience in air permitting in Connecticut may assist in making the determination or permit applicability and submitting the necessary forms.

You may contact DEEP’s Air Permitting group at DEEP.BAM.AirPermits@ct.gov or (860) 424-4152 to discuss the specifics of your project and permit applicability.

VII. Energy – Eversource and UI customers can take advantage of several utility run incentive programs. Energize Connecticut has a [Small Business Energy Advantage](#) program that can provide free onsite audits by an approved vendor to identify opportunities for savings. Businesses can also replace inefficient and outdated equipment through the [Energy Opportunities](#) program. Other Commercial and Industrial efficiency programs may also be available, including the [Energy Conscious Blueprint](#) program for new or existing breweries that are undergoing major renovations.



Some common areas to upgrade and maintain include motors, lighting, compressed air, and refrigeration; reusing waste heat, installing solar panels for electricity or a solar hot waste system are additional ways to increase energy efficiency at breweries. DEEP’s [Sustainable Breweries webpage](#) has additional information including case studies.

The [Non-Residential Energy Solutions Program](#) is a new opportunity for businesses to lower their utility bills and

use “greener” energy. It combines many of the renewable program options and makes participation more accessible. Businesses will be able to participate through monthly bill credits over a 20-year term for their renewable energy production and choose from two different payment structures, Buy-All and Netting. [Eversource](#) and [UI](#) have websites with program details.

This fact sheet is intended for informational purposes only based on the information available as of the date of its publication and does not represent a formal jurisdictional determination by which DEEP or any other permitting authority referenced will be bound. Information contained in this fact sheet does not represent a comprehensive list of all permit requirements potentially applicable, which in most cases can only be determined on a site-specific basis. It is intended only to provide information on permits that may be required. Refer to the most current statutes, regulations, and public acts for specific language pertaining to each permit. It is your responsibility to comply with all applicable laws. Contact DEEP (DEEP.CONCIERGE@ct.gov) with questions regarding a specific site or project.

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