

**AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
1 NATIONAL LIFE DRIVE, MAIN 2
MONTPELIER, VT 05620-3521**

**INDIRECT
DISCHARGE PERMIT AMENDMENT**

PIN: BR97-0075; BR89-0004

Permit No.: ID-9-0319-1

SECTION A – “ADMINISTRATION”

In compliance with provisions of 10 V.S.A. §1263, and in accordance with the following conditions, the permittee:

Alchemy Holding, LLC
35 Crossroad Road
Waterbury, VT 05676

is authorized to discharge non-sewage, high strength wastewater from an existing brewery located in Waterbury, Vermont to an anaerobic digester in Randolph, Vermont. The resulting digestate is to be managed in accordance with the Vermont Agency of Agriculture’s Accepted Agricultural Practices. **This amendment authorizes the discharge of high strength process wastewater and a non-sewage sludge from a new brewery located in Stowe, Vermont to the same anaerobic digester in Randolph, Vermont.**

A1. Permit Summary:

Expiration Date	March 31, 2020
Type of Wastes	Process Wastewater, Non-Sewage Sludge
Disposal System	Discharge of wastewater to an anaerobic digester followed by management of the resulting digestate in accordance with Accepted Agricultural Practices
Waste Generated	Up to 4,000 gallons per week from Waterbury facility (208,000 gallons per year), up to 10,000 gallons per week (520,000 gallons per year) from both facilities after Stowe facility is operational
Digester Capacity Available for all Brewery Wastes	Up to 22,000 gallons per week (1,144,000 gallons per year)

A2. Compliance Schedule:

The following schedule summarizes the actions and requirements necessary for compliance with the conditions of this permit. The permittee shall complete the requirements in accordance with the dates indicated. See the designated section for specific details.

<u>Condition # & Description</u>	<u>Schedule Date</u>
A3. Apply for renewal of Indirect Discharge Permit	December 31, 2019
D1. Perform wastewater sampling and analyses	Semi-annually at each facility
D2. Submit disposal report	Monthly
D3. Maintain daily journal	Daily
D4. Other monitoring	As required

A3. Expiration Date:

This permit, unless revoked or amended shall be valid until March 31, 2020, despite any intervening change in Water Quality Standards or the Vermont Guidelines for Land Application of Dairy Processing Wastes. Renewal of this Indirect Discharge Permit will be subject to all rules applicable at the time of application for renewal, including biological standards to determine significant alteration of aquatic biota.

The permittee shall apply for an Indirect Discharge Permit renewal by December 31, 2019. For the purposes of Title 3, an application for renewal of this indirect discharge permit will be considered timely if a complete application is received by the expiration date.

A4. Effective Date:

This permit amendment becomes effective on the date of signature.

A5. Revocation:

The Secretary may revoke this permit in accordance with 10 V.S.A. §1267.

A6. Transfer of Permit:

This permit is not transferable without prior written approval of the Secretary. The permittees shall notify the Secretary immediately, in writing, before any sale, lease or other transfer of ownership of the property from which the permitted discharge originates. The proposed transferee shall make application for a permit to be reissued in their name. Failure to apply shall be considered a violation of this permit. Responsibility for compliance with the conditions of this permit shall be the burden of the permittee until such time as transfer of the permit to the transferee is complete. All application and operating fees must be paid in full prior to transfer of this permit. This permit shall be transferred only upon showing by the permittee or proposed transferee of compliance with the following conditions:

- a. The transferee shall be a legal entity, financially and technically competent to operate, inspect, maintain and replace the system.
- b. The transferee shall demonstrate that they have the legal authority to raise revenues for the proper operation, inspection, and maintenance of the system.
- c. The transferee shall provide a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees to the Secretary.

A7. Minor Modifications of Permit:

The Secretary may modify this permit without requiring a permit application, a public notice, or a public hearing to correct typographical errors or increase the frequency of monitoring or reporting in accordance with Condition D(4) of this permit.

A8. Indirect Discharge Rules:

This indirect discharge was reviewed and qualified for an Indirect Discharge Permit in accordance with the Vermont Water Quality Standards; Section 14-1902(c) of the Indirect Discharge Rules; and the Vermont Guidelines for Land Application of Dairy Processing Wastes.

A9. Right of the Agency to Inspect:

The permittee shall allow the Secretary or the Secretary's authorized representative upon the presentation of their credentials and at reasonable times:

- a. To enter upon permittee's premises in which any wastewater source, treatment or disposal system is located or in which any records are required to be kept under the conditions of the permit;
- b. To have access to and copy any records required to be kept under conditions of this permit;
- c. To inspect any monitoring equipment or method required in this permit;
- d. To sample any discharge of waste, groundwater or surface water; and
- e. To inspect any collection, treatment or disposal facility required by this permit.

A10. Permit Availability:

A copy of this permit shall remain at the office of the permittee and, upon request, shall be made available for inspection by the Secretary.

A11. Additions to Disposal System:

The permittee may request to add manure pits or anaerobic digesters to the disposal program in accordance with the following:

- a. Submittal of an application for an administrative amendment of this permit to request the addition of manure pits and/or anaerobic digesters to the approved list in Attachment A.
- b. For the addition of manure pits, submittal of a written agreement between the permittee and the farmer(s). Each agreement must state the location and volume of the farmer's manure pit, the estimated volume of waste to be delivered, state that the farmer agrees to manage the wastewater/manure mixture in accordance with the Accepted Agricultural Practices, and be signed and dated by both parties. Documentation verifying the construction and volume of the pit(s) must also be submitted.

A11. Additions to Disposal System (continued):

- c. For the addition of an anaerobic digester, submittal of a written agreement between the permittee and the farmer. The agreement shall include estimated volumes to be delivered to the farm on a weekly or annual basis, the frequency of the deliveries, state that the farmer agrees to manage the resulting digestate in accordance with Accepted Agricultural Practices, and be signed and dated by both parties. Large and medium farm operations may need to update their nutrient management plans and receive approval from the Vermont Agency of Agriculture to be approved as a disposal location.

A12. Operating Fees:

This indirect discharge is subject to operating fees. The permittee shall submit the operating fees in accordance with procedures provided by the Secretary.

SECTION B - "INDIRECT DISCHARGE"

B1. Nature of Indirect Discharge:

The wastewater authorized for disposal by this permit is a high strength waste from the manufacturing of beer by the Alchemist Brewing Company. The high strength wastewater will consist of two waste streams; a process wastewater made up of spent hops and yeast, waste beer and rinse water from both brewing facilities, and a non-sewage pre-treatment sludge from the Stowe facility. The permittee currently generates up to 4,000 gallons of process wastewater per week (208,000 gallons per year) at the Waterbury facility. When the Stowe facility is operational, the permittee will generate up to 10,000 gallons of process wastewater and sludge per week (520,000 gallons per year) from both facilities.

The high strength wastewater from both facilities will be discharged to the Vermont Technical College's anaerobic digester in Randolph, Vermont. The maximum disposal capacity for all brewery waste, including waste from other permitted breweries, is 22,000 gallons per week (1,144,000 gallons per year) to the digester. According to the Anaerobic Digester Utilization Agreement, Vermont Technical College has the right to change or stop the delivery of the Alchemist waste to the digester to comply with the limits in their community comprehensive nutrient management plan.

B1. Nature of Indirect Discharge (continued):

Based on analytical results from process wastewater samples collected at the Waterbury facility and results from sludge samples collected at another brewery with pretreatment, the process wastewater from both facilities and the sludge from the Stowe facility are expected to have the following approximate range of concentrations:

<u>Parameter</u>	<u>Sludge Conc. (mg/L)</u>	<u>Process Wastewater Conc. (mg/L)</u>
Biochemical Oxygen Demand	1,500 – 3,200	not analyzed
Chemical Oxygen Demand	16,000 – 30,000	133,600 – 153,900
Nitrate Nitrogen	< 0.1 – 0.5	0.1 – 22.0
Total Kjeldahl Nitrogen	1,100 – 2,300	1,539 – 2,122
Total Phosphorus	140 - 220	181 - 259
Potassium	140 – 160	591 - 723
Sodium	370 – 540	18 - 267
Chloride	120 – 220	212 - 240
pH	7.20 – 7.90 S.U.	4.30 – 4.73 S.U.

These are not permit limits and exceedences of these values may occur.

B2. Chemicals Utilized:

The permittee previously submitted Material Safety Data Sheets for the two chemicals which will be used at one or both of the facilities. Sodium hydroxide is used to clean brewery vessels. Ferric chloride will be used in the pre-treatment process at the Stowe facility to precipitate phosphorus.

Prior to making any changes in the chemicals used, the permittee shall submit a request for evaluation of the new chemicals to the Secretary. If the Secretary determines that the change in chemicals is a significant change, the permittee shall be required to apply for a permit amendment. Minor changes in chemicals used, as determined by the Secretary, will not require permit amendment. For those chemicals which are obtained from a different supplier or source and are identical to the chemicals listed in the application, the permittee shall notify the Secretary of the change and no evaluation will be necessary.

SECTION C - "SYSTEM OPERATION"

C1. General:

The high strength wastewater shall be handled at all times in a manner that will (1) not permit the surface runoff of wastewater to waters of the State and (2) not result in a violation of the Vermont Water Quality Standards.

C2. Limits on Disposal:

This permit authorizes only the discharge of high strength process wastewater from the manufacturing of beer at the Alchemist brewing facilities in Waterbury and Stowe, Vermont to the anaerobic digester identified in Attachment A. The permittee is authorized to dispose up to 4,000 gallons per week from the Waterbury facility, and up to 10,000 gallons per week from both facilities once the Stowe facility is operational, providing that the total volume of brewery waste delivered to the digester from all sources does not exceed 22,000 gallons per week or any other limitation established by the Vermont Agency of Agriculture, Farms & Markets.

SECTION D - "MONITORING"

D1. Monitoring Requirements:

Upon the effective date of this permit, the permittee shall sample and analyze the process wastewater from each facility and the sludge from the Stowe facility, as follows:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
Total Solids (TS)	%	grab	Semi-annually
Total Volatile Solids (TVS)	% of TS	grab	Semi-annually
Chemical Oxygen Demand	mg/l	grab	Semi-annually
Sodium (Na+)	mg/L	grab	Semi-annually
Chloride (Cl-)	mg/L	grab	Semi-annually
Total Phosphorus	mg/L	grab	Semi-annually
Total Kjeldahl Nitrogen (TKN)	mg/L	grab	Semi-annually
Total Potassium	mg/L	grab	Semi-annually
pH	S.U.	grab	Semi-annually

D1. Monitoring Requirements (continued):

Semi-annual periods are January – June and July – December. If any disposal of process wastewater or sludge occurs in a semi-annual period, a sample is required to be collected and analyzed. Representative samples shall be taken from the wastewater holding tanks after agitation of the wastes.

The results of the analysis shall be submitted to the Secretary by the 15th day of the second month following the date of sampling.

The laboratory utilized for analyzing the samples shall demonstrate successful performance for U.S. EPA check samples for all parameters and shall analyze any check samples provided by the Secretary. Failure to obtain an acceptable result for either the Secretary or EPA check samples may be a basis for requiring an alternate analytical laboratory.

D2. Monthly Disposal Report:

On a monthly basis, the permittee shall submit a written report to the Secretary listing 1) the dates in which disposal occurred, 2) the location where disposal occurred, and 3) the daily volume in gallons discharged to the digester for the previous month. The report shall be signed by the permittee under the following certification language:

“I certify under penalty of law that I have personally examined, and am familiar with, the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.”

The reports shall be submitted by the 15th day of the month following the dates of disposal.

D3. Daily Journal:

The permittee shall maintain a bound, daily journal at each facility for documenting the volume of high strength wastewater transported from each facility. The journal shall have printed pre-numbered pages. For each load transported from the facility, facility personnel shall enter in ink 1) their name (with signature), 2) the date, 3) the hauler's name 4) the destination of the waste, and 4) the volume of wastewater transported from the facility.

The journals shall be made available for inspection by the Secretary. Upon request of the Secretary, the permittee shall photocopy daily entries for submission to the Secretary.

D4. Other Water Quality Monitoring:

No other water quality monitoring of the system is required under this permit. However, the Secretary reserves the right to require additional monitoring in accordance with Condition A(7) should the disposal fail to meet the requirements of Conditions C(1) and C(2).

SECTION E - "COMPLIANCE REVIEW"

If the results of any monitoring or reporting indicate that there is a possibility that the Vermont Water Quality Standards may be violated, the Secretary may require monitoring of groundwater and/or surface water. If continued monitoring and analysis indicates that a violation of the wastewater discharge rate or a violation of the Vermont Water Quality Standards has occurred, is occurring, or is likely to occur, the Secretary may require the permittee to take appropriate corrective actions to eliminate or reduce the possibility of a violation.

The issuance of this Indirect Discharge Permit Amendment, ID-9-0319-1, to Alchemy Holding, LLC by the Secretary relies upon the data, designs, judgment and other information supplied by the applicant, the applicant's consultants and other experts who have participated in the preparation of the application. The Secretary makes no assurance that this system will meet the performance objectives of the applicant and no warranties or guarantees are given or implied.

SECTION F - "EFFECTIVE DATE"

This Indirect Discharge Permit Amendment, ID-9-0319-1, issued to Alchemy Holding, LLC for the discharge of high strength wastewater generated from the manufacturing of beer at the permittee's breweries in Waterbury and Stowe, Vermont to the anaerobic digester listed in Attachment A, is effective on this 17th day of June, 2016.

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation



By:

Bryan Redmond, Director
Drinking Water and Groundwater Protection Division

ATTACHMENT A

Alchemy Holding, LLC
Approved Anaerobic Digester for Disposal of High Strength Wastewater
June, 2016

Digester	Location	Town	Disposal Capacity for All Brewery Wastes
Vermont Technical College	VTC Campus	Randolph Center	1,144,000 gallons/year ¹

Note:

- 1: The disposal capacity is NOT the disposal limit for the Alchemist high strength wastewater. The disposal capacity is based on a maximum disposal limit of 22,000 gallons per week of high strength wastewater from all breweries authorized to discharge to the VTC digester, as approved by the Vermont Agency of Agriculture, Farms & Markets in accordance with VTC's Community Comprehensive Nutrient Management Plan.