

**BUREAU OF AIR MANAGEMENT
NEW SOURCE REVIEW PERMIT
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator	Smart Feed Tech. Inc. (Bright Feeds)
Address	76 Fuller Way, Berlin, CT 06037
Equipment Location	76 Fuller Way, Berlin, CT 06037
Equipment Description	Animal Feed Production Facility
Town-Permit Numbers	007-0051
Premises Number	157
Stack Number	1
Permit Issue Date	
Expiration Date	None

Emma Cimino
Deputy Commissioner

Date

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

PART I. FACILITY DESCRIPTION

A. General Description

Smart Feed Tech. Inc. (Bright Feeds) processes soy-based products, bread products, pasta, pretzels, coffee grinds and other grain foods. The food mix is converted into animal feed.

Bright Feeds is separated into two areas: the receiving area, where the food waste is trucked in, and the processing area, where the animal feed is made.

Trucks offload the food waste in the receiving area. Front-end loaders move and blend the food with a dry additive. The mix is then loaded into the de-packager machine. The de-packager machine shreds the food into small pieces along with the packaging material. The shredded packaging material is separated from the blended food in a vertical chamber based upon particle size. The packaging material is deposited into a dumpster that is adjacent to the de-packager machine. Next, the blended food gets sorted into holding vessels and conveyed downstream to the processing area.

The blended food travels via conveyor to a feeding chamber that meters the blend into the dryer. The food mix travels through ductwork along the ceiling before going into a three-cyclone system operating in parallel (cyclone system), which removes the majority of the food mix from the air stream. The air stream is then processed through baghouse 1 for final product recovery. Emissions from baghouse 1 are vented into a Regenerative Thermal Oxidizer (RTO) and to the atmosphere via stack 1.

Next, food mix from the bottom of the cyclone system and baghouse 1 is pneumatically conveyed through ductwork to baghouse 2 on the exterior of the building, for cooling. Subsequent to cooling, filtered air from baghouse 2 is routed back to the dryer and the feed from the bottom of baghouse 2 is directed via a dilute-phase conveying system to baghouse 3. Filtered air from baghouse 3 is routed back to the dryer, and the feed from the bottom of baghouse 3 is directed to the silos for storage. Baghouses 2 and 3 do not vent to the ambient air.

There are eight silos capable of storing and dispensing food mix. Trucks are loaded by the silos' loading arms. Silos 1-4 have an auger system with a single loading arm while silos 5-8 are equipped with loading arms. The truck loading area is located within an enclosure.

B. Equipment Design Specifications

1. De-packager
 - i. Make and Model: Tiger HS55
 - ii. Maximum Design Capacity: 12 tons/hr

2. Rotary Dryer
 - i. Raw Material: soy based products, bread products, pasta, pretzels, coffee grinds, other grain foods and feed additives.
 - ii. Make and Model: Proprietary
 - iii. Fuel Type: Natural gas
 - iv. Burner Maximum Rated Capacity: 15 MMBtu/hr

3. Cyclone System (1a, 1b, 1c)
 - i. Manufacturer and Model No: Schenk Process, Model 3HE43
 - ii. Type of Cyclone: Single
 - iii. Number of Cyclones: three cyclones operating in parallel

4. Baghouse 1
 - i. Manufacturer: Schenk Process
 - ii. Filter's Manufacturer and Model No.: 120RPT420 Style III Filter
 - iii. Filtering Material: 120" LG Dyna-Mac Polyester
 - iv. Air to Cloth Area: 4.5:1
 - v. Net Cloth Area: 6,610 sq. ft
 - vi. Number of Bags: 420
 - vii. Cleaning Method: Pulse Jet
 - viii. Minimum Design Pressure Drop Across Unit: 0.5" of water column

5. Baghouse 2
 - i. Manufacturer: Schenk Process
 - ii. Filter's Manufacturer and Model No.: 120MCF416-316 Style III
 - iii. Filtering Material: 16 oz. Dyna-Mac Filter bags
 - iv. Air to Cloth Area: 4.1:1
 - v. Net Cloth Area: 3,792 sq. ft.
 - vi. Number of Bags: 316
 - vii. Cleaning Method: Pulse Jet
 - viii. Minimum Design Pressure Drop Across Unit: 0.5" of water column

6. Baghouse 3 (located on top of the roof by the silos)
 - i. Manufacturer: Schenk Process
 - ii. Filter's Manufacturer and Model No.: Dyna-Mac 16 oz. 54AVR32 Style III Filter
 - iii. Filtering Material: 16 Oz Dyna-Mac Polyester bottom load bags
 - iv. Air to Cloth Area: 5.7:1
 - v. Net Cloth Area: 214 sq.ft.
 - vi. Number of Bags: 32
 - vii. Cleaning Method: Pulse Jet
 - viii. Minimum Design Pressure Drop Across Unit: 0.5" of water column

7. Silos
 - i. Number of silos: eight

C. Control Equipment Design Specifications

1. Regenerative Thermal Oxidizer (RTO)
 - i. Manufacturer and Model Number: Ship & Shore – Dual Bed Flow
 - ii. Fuel Type: Natural gas
 - iii. Number of Burners: 1
 - iv. Burner Maximum Heat Input: 4.6 MMBtu/hr
 - v. Design Destruction Efficiency: 97%
 - vi. Pollutant Controlled: VOC

D. Stack Parameters

	Minimum Stack Height (ft)	Minimum Exhaust Gas Flow Rate (acfm)	Minimum Stack Exit Temperature (°F)	Minimum Distance from Stack Property Line (ft)
Stack 1	58	17,000	200	75

PART II. OPERATIONAL CONDITIONS**A. Equipment**

1. Rotary Dryer – Process
 - i. Maximum Feed Rate: The lesser of 12 tons per hour or the average rate in tons per hour observed during the most recent stack test, performed in compliance with Part V of this permit and approved by the Department, that demonstrates compliance with the emissions limits in Part III.A.1 of this permit.
 - ii. Maximum Allowable Throughput of Raw Material: 105,120 tons (12 TPH x 8,760 hrs operation)
 - iii. Following any period of dryer shutdown or inactivity, the dryer shall not resume operation unless the regenerative thermal oxidizer has reached the minimum operating temperature specified in Part II. B of this permit.
2. Rotary Dryer – Fuel Burning
 - i. Fuel Type: Natural gas
 - ii. Maximum Hourly Fuel Firing Rate: 15,000 ft³
 - iii. Maximum Annual Fuel Consumption: 131 MMft³
3. Baghouse 1:
 - a. Operating Pressure Drop Range Across Unit: 0.5” to 10” of water column

B. Control Equipment

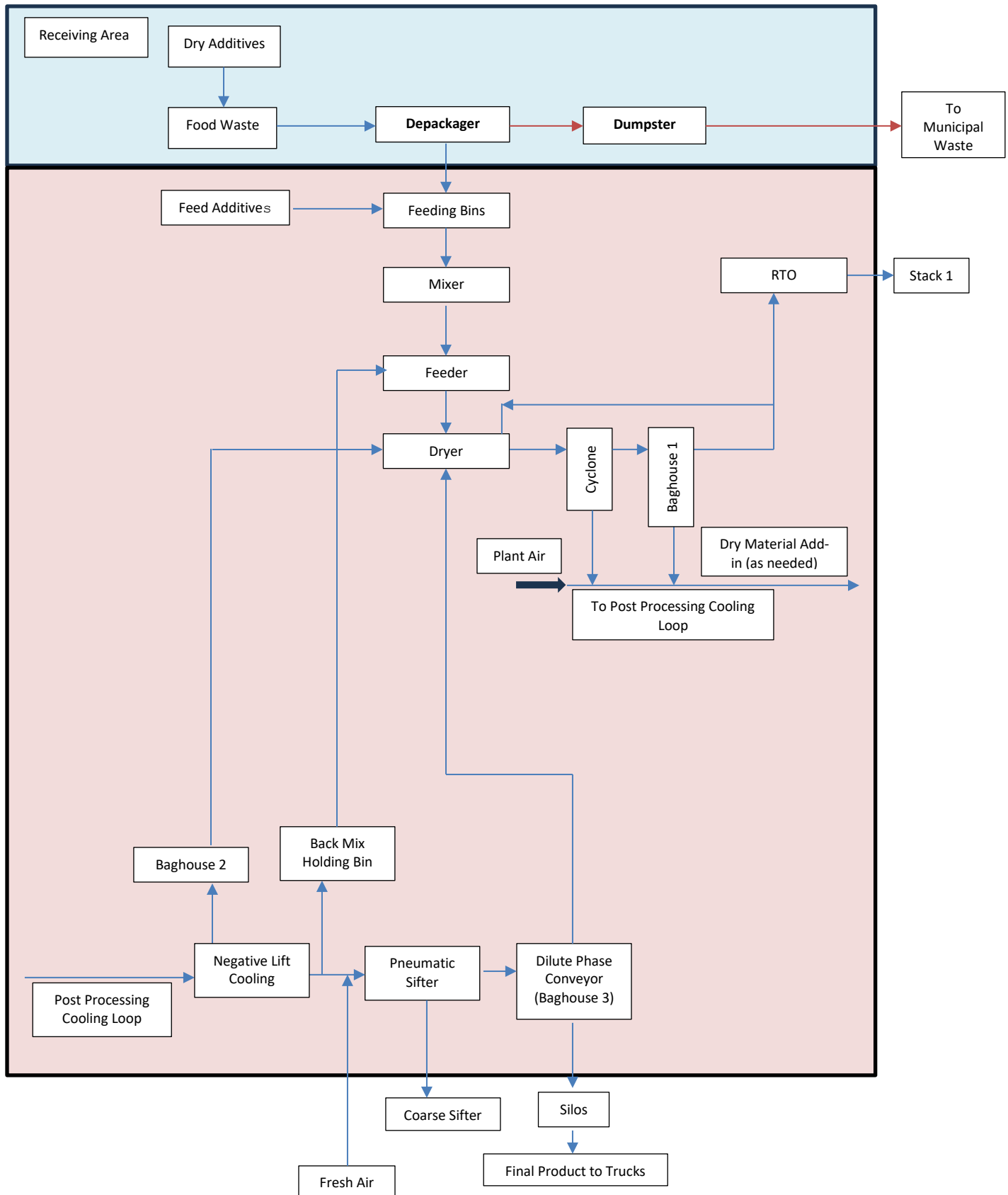
1. Regenerative Thermal Oxidizer (RTO)
 - i. The RTO and rotary dryer shall be interlocked such that if the RTO is offline, the rotary dryer shall not operate.
 - ii. Minimum Operating Temperature of Chamber: 1,500 °F, or the minimum temperature that achieved 97% destruction efficiency according to the most recent stack test.
 - iii. Maximum Hourly Firing Rate: 4,600 ft³/hr
 - iv. Maximum Annual Fuel Usage: 40.3 MMft³
 - v. Maximum Hourly VOC Load: 200 lb/hr
 - vi. Destruction Efficiency: 97%

- C. The Permittee shall operate and maintain equipment and control equipment in accordance with the manufacturer’s specifications and written recommendations to comply with this permit.
- D. The Permittee shall properly operate the control equipment at all times that equipment is in operation and emitting air pollutants. The VOC capture and control system shall be maintained in a leak free condition so as to assure that all exhaust gas is routed to the RTO.
- E. If there is an incident that impairs the proper functioning of any of the control equipment while the

process is in operation, only the product in the process line may be processed. Processing shall not continue for more than 4 hours. Processing of new product may resume once all the control equipment has returned to normal operations, compliant with this permit.

- F.** The Permittee shall have on site a written Dust and Odor Control Management Plan to address fugitive emissions and odors at the premises and operate in accordance with such plan. The Dust Control and Odor Management Plan shall include, but not limited to, standard operating procedures for plant personnel and contractors, a program to respond to dust/odor complaints, a schedule for performing visible dust inspections and required annual dust training for employees and contractors. The Dust Control and Odor Management Plan shall be amended as needed.
- G.** The Permittee shall operate equipment and control equipment at this premises at all times in a manner that complies with RCSA Subsection 22a-174-18(c)
- H.** Whenever possible the Permittee shall keep the facility's bay doors to the outside closed if they are not in use.
- I.** The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23. [STATE ONLY REQUIREMENT]
- J.** The Permittee shall have baghouse filters available on-site for replacement, as needed.
- K.** The Permittee shall:
 - 1. Check the pressure drop across baghouse 2 and 3, weekly, to ensure they are maintained within the manufacturer's recommended range. If the pressure drop is found to be out of the manufacturer's recommended range, corrective action should be taken to remedy the deviation; and
 - 2. Examine the bags in baghouse 1, 2 and 3 bi-weekly to check for excessive build up on the outside of the bags/cartridges. If excessive build up occurs, the interval between the automatic cleaning shall be adjusted in accordance with manufacturer's recommendations.
- L.** The Permittee shall perform inspections of the control devices as recommended by the manufacturer.
- M.** The Permittee shall comply with the requirements of RCSA Section 22a-174-7 with respect to operation of the air pollution control and monitoring equipment set forth in this permit
- N.** Not more than 1 year from the date of the 1st stack test, conducted pursuant to Part V of this permit, that demonstrates compliance with the limits of Part III of this Permit, the Permittee shall submit a minor permit modification which proposes a means to monitor and record the actual hourly VOC load to the RTO in units of lb/hour. If such proposal involves methods other than direct measurement of hourly VOC load in the duct upstream of the RTO, then the proposal shall be supported with empirical observations and data, including data from the 1st stack test and any subsequent department approved compliance tests

O. Flow Diagram



PART III. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

A. Criteria Pollutants

1. Allowable Emissions (Process Emissions+ Fuel Burning Emissions)

Pollutant	lb/hr
PM/PM ₁₀ / PM _{2.5}	0.71
VOC	6.00

2. Allowable Emissions (Fuel Burning Emissions)

Pollutant	lb/hr
SO ₂	0.01
NO _x	1.96
CO	1.65

3. Annual Emissions (Process Emissions and Fuel Burning Emissions)

Pollutant	TPY
PM/PM ₁₀ / PM _{2.5}	3.11
SO ₂	0.05
NO _x	8.58
CO	7.21
VOC	26.28

B. Hazardous Air Pollutants

This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA Section 22a-174-29. [STATE ONLY REQUIREMENT]

C. Opacity

This equipment shall not exceed 20% opacity during any six minute block average as measured by 40 CFR Part 60, Appendix A, Reference Method 9 or 40% opacity as measured by 40 CFR Part 60, Appendix A, Reference Method 9; reduced to a one minute block average. [RCSA Sections 22a-174-18(b)(1)(A) and (B)].

D. Demonstration of compliance with the above emission limits may be met by calculating the emission rates using emission factors from the following sources:

- VOC, PM, PM₁₀, PM_{2.5} (fuel burning equipment + process emissions): most recent approved stack testing results.
- SO_x, NO_x, CO (fuel burning: Rotary dryer and RTO): Natural gas: AP42, Section 1.4 – Natural Gas Combustion

- E. The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

A. Monitoring Requirements

1. The Permittee shall continuously monitor the total fuel supplied to the rotary dryer and RTO using a non-resettable totalizing fuel meter. Not more than 180 days from the issuance of this permit but prior to the conduct of the initial stack test required in Part V of this permit, the permittee shall install a non-resettable totalizing fuel meter to monitor the total fuel supplied to the rotary dryer and the RTO, combined.
2. The Permittee shall, using differential pressure gauges, monitor the operating pressure drop of baghouse 1. The pressure drop shall be monitored once per shift. The Permittee shall maintain the pressure drop across the baghouse within the range specified in Part II.A of this permit.
3. The Permittee shall monitor the weekly and consecutive 52-week weight of material fed to the dryer.
4. The Permittee shall continuously monitor and record the actual operating temperature of the RTO using thermocouples that are periodically calibrated and/or replaced in accordance with the manufacturer's specifications.
5. The permittee shall monitor the actual hours of operation of the dryer during each shift.
6. Not more than 180 days from the issuance of this permit but prior to conducting the Initial stack test required in Part V of this permit, the Permittee shall install a bag leak detector system on baghouse 1. The bag leak detector shall be properly installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations at all times that materials are being processed. An audible alarm shall be set to sound when there is a leak.
7. Prior to conducting the initial stack test required in Part V of this permit, the Permittee shall:
 - a. develop a methodology for tracking the weight of the blended food fed to the rotary dryer hourly;
 - b. provide said methodology to the Department for review and approval as soon as practicable but no later than 60 days after the issuance of this permit; and,
 - c. implement the approved methodology.

B. Record Keeping Requirements

1. The Permittee shall make and keep records of the following information for each incoming load of food waste
 - a. the quantity of food waste received,
 - b. the origin of each load (municipality, regional facility or commercial/industrial generator facility by name)
 - c. Name of the transporter company delivering the load
2. The Permittee shall keep customer contracts on site and make them available for inspection upon request.

3. Prior to the implementation of an approved methodology for tracking the weight of the blended food fed to the dryer, the Permittee shall make and keep records of the weekly and consecutive 52-week total weight of blended food fed to the dryer in tons. Weekly shall be defined as: for each calendar week, beginning at 00:00 on Sunday through 23:59 on the immediately following Saturday. Weekly records shall include dates of measurement during the week, measurement locations, measurements at each measurement location, a sample calculation of the material balance or accounting used to determine the weekly weight of blended food loaded to the dryer, and resultant weekly feed of blended food to the dryer. Consecutive 52-week total weight of blended food fed into the dryer shall be the sum of the most recent weekly weight of blended food fed to the dryer and the 51 immediately preceding weekly weights of blended food fed to the dryer. The permittee shall make these records by Friday for the preceding calendar week.
4. Subsequent to the approval of a methodology for tracking the weight of blended food fed to the dryer, the Permittee shall record the hourly total, daily total, weekly total, and the consecutive 52-week total weight of blended food fed to the dryer.
5. The permittee shall record the daily, weekly, and consecutive 52-week hours of operation of the dryer. Such records of daily hours of operation shall include start and end times for all dryer operation occurring during the day and the sum of hours of operation rounded to the nearest hour. Weekly hours of operation shall be the sum of daily hours of operation during each calendar week. Consecutive 52-week hours of dryer operation shall be the sum of the most recent weekly hours of dryer operation and the 51 immediately preceding weekly hours of dryer operation of material fed to the dryer. The permittee shall make these records by Friday for the preceding calendar week.
6. The Permittee shall make and keep records of the weekly, monthly and consecutive 12 month total product produced.
7. The Permittee shall continuously record the RTO operating temperature during all periods of dryer operation. Such records shall include the dates and times of the temperature recordings.
8. The Permittee shall keep records of monthly and consecutive 12 month natural gas consumption of the rotary dryer and RTO, combined. The consecutive 12 month natural gas consumption shall be determined by adding the current month's natural gas consumption to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
9. The Permittee shall make and keep records of the weekly and consecutive 52-week mass of emissions of VOC and PM/PM₁₀/PM_{2.5} in units of tons. Weekly shall be defined as: for each calendar week, beginning at 00:00 on Sunday through 23:59 PM on the immediately following Saturday. Prior to the initial stack test, weekly emissions shall be based on weekly hours of operation and the hourly limits in Part III.A.1 of this permit. Subsequent to the initial stack test, weekly emissions shall be based on weekly hours of operation and the results of the most recent Department approved stack test. Consecutive 52-week mass of emissions shall be the sum of the most recent weekly emissions of each pollutant and the 51 immediately preceding weekly emissions for that pollutant. The permittee shall make these records by Friday for the preceding calendar week.
10. The Permittee shall calculate and record the monthly and consecutive 12-month SO₂, NO_x, and CO emissions in units of tons. The consecutive 12-month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall

include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.

11. The Permittee shall make and keep records of all instances when the bag leak detector alarm on baghouse 1 is activated. Such records shall include the following information:
 - a. Date and time of the alarm,
 - b. Name of the control device to which the alarm is attached,
 - c. Date and time that the control device returned to normal operation while the dryer is operating without sounding the alarm.
 - d. Dates and time of operation of the dryer while the bag leak detector was in alarm status commencing with the date of the alarm
 - e. Suspected cause of the conditions that triggered the alarm
 - f. Description of any corrective action taken to address the alarm and the dates taken
 - g. Name and affiliation of individuals or vendors performing corrective action.

12. The Permittee shall make and keep records at least once per working shift of the operating pressure drop across baghouse 1. Such records shall include the date and time of day of recording. If a reading outside of permitted range is observed, the Permittee shall make a record of the following information:
 - a. Date and time of the observation,
 - b. Name of the control device to which the pressure gauge is attached,
 - c. Name of the person making the entry, and
 - d. Any corrective action taken to address the out of range pressure drop.

13. The Permittee shall keep a copy of the manufacturer's specifications and written recommendation for the baghouses and cyclones.

14. The Permittee shall make and keep records of the weekly and bi-weekly inspections conducted on the baghouses. Such records shall include the following information:
 - a. Date and time of inspection,
 - b. Name of device inspected,
 - c. Name of the person making the entry,
 - d. Parameters checked,
 - e. Bags/filters replacement,
 - f. Any problem detected, and
 - g. Any corrective action taken if a problem is detected.

15. The Permittee shall make and keep records of personnel and contractors' training in accordance with the Dust and Odor Control Management Plan.

16. The Permittee shall keep all records required by this permit for a period of no less than five years, unless noted otherwise, and shall submit such records to the commissioner upon request.

C. Reporting Requirement

1. In addition to the requirements of RCSA Section 22a-174-7, the Permittee shall notify the commissioner in writing of any exceedance of an operating limit in Part II. A.1-A.2 or Part II.B or an emission limit in Part III of this permit. For each exceedance, such notice shall identify the dates, times, duration in hours, cause or likely cause of such exceedance, all corrective actions and preventive measures taken with respect thereto, and the dates of such corrective actions and measures were taken. Such notice shall be sent to the addressee in Part VII.I of this permit as follows:
 - a. For any hazardous air pollutant, no later than 24 hours after such exceedance commenced; and
 - b. For any other regulated air pollutant or operating parameter, no later than ten days after such exceedance commenced.

PART V. STACK EMISSION TEST REQUIREMENTS

- A. Stack emission testing shall be performed in accordance with the Emission Test Guidelines available on the DEEP website at www.ct.gov/deep/stacktesting.
- B. Stack testing shall be required as follows:
 1. Stack 1 (RTO)
 - VOC
 - PM/PM₁₀/PM_{2.5} (Filterable + Condensable)
 - RTO – Destruction Efficiency
- C. The Permittee shall conduct initial stack testing within 180 days after the issuance of this permit (Application No. 202504193).
- D. The Permittee shall conduct recurrent stack testing for Stack 1 within three years from the date of the previous stack test.
- E. Stack test results shall be reported as follows:
 1. VOC: lb/hr
 2. PM/PM₁₀/PM_{2.5} (Filterable + Condensable): lb/hr
 3. RTO – Destruction Efficiency: %
- F. The Permittee shall submit test results within 60 days after completion of testing.
- G. The commissioner retains the right to require stack testing of any pollutant at any time to demonstrate compliance.

PART VI. SPECIAL REQUIREMENTS**A. Premises Emissions Summary**

1. On January 1st of each calendar year, if the potential emissions of NO_x or VOC from the premises are equal to or greater than 25 tons per year per pollutant, then for such pollutant(s), the Permittee shall:

- a. Monitor NO_x and/or VOC emissions, as applicable, from the premises for such calendar year.
 - b. Calculate and record annual NO_x and/or VOC emissions, as applicable, from the premises for such calendar year, in units of tons. The Permittee shall make these calculations on or before February 1st of the following year with respect to the previous calendar year. Such records shall include a sample calculation(s).
 - c. If actual NO_x and/or VOC emissions, as applicable, from the premises are equal to or greater than 25 tons for such calendar year, the Permittee shall submit to the commissioner, on or before March 1st of the following year, an annual emissions summary with respect to the premises for the previous calendar year. Such summary shall be submitted on forms prescribed or provided by the commissioner.
2. A Permittee is exempt from Part VI.A.1 requirements of this permit if, on January 1st of the subject year, the premises was operating in accordance with any of the following:
- a. A valid Title V permit issued pursuant to RCSA section 22a-174-33;
 - b. RCSA section 22a-174-33a; or
 - c. RCSA section 22a-174-33b

PART VII. ADDITIONAL TERMS AND CONDITIONS

- A.** This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B.** Any representative of DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C.** This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D.** This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
- E.** Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F.** Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and

natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.