STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

Peaks Renewables, Inc. **Kennebec County** **Clinton, Maine** **A-1160-71-A-N**	**Departmental** **Findings of Fact and Order** **Air Emission License**

FINDINGS OF FACT

After review of the air emission license application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Peaks Renewables, Inc. (Peaks) has applied for an Air Emission License for the operation of emission sources associated with a renewable natural gas (RNG) production facility.

The equipment addressed in this license will be located at 839 River Road in Clinton, Maine.

B. Title, Right, or Interest

In their application, Peaks submitted copies of a lease demonstrating interest in the facility. Peaks has provided sufficient evidence of title, right, or interest in the facility for purposes of this air emission license.

C. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

Equipment	Max. Heat Input Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type, % sulfur	Date of Manuf.	Stack #
Boiler #1	4.3	4,200	Pipeline quality natural gas, negligible	2022	EP-1
Boiler #2	4.3	4,200		2022	EP-1
Boiler #3	5.1	5,016		2022	EP-2
Boiler #4	5.1	5,016		2022	EP-2

Stationary Engines

Equipment	Max. Heat Input Capacity (MMBtu/hr)	Firing Rate (scf/hr)	Rated Output Capacity (kW)	Fuel Type, % sulfur	Date of Manuf.
Co-Gen #1	2.69	2,620	280	Pipeline quality natural gas, negligible	2022
Emergency Generator #1	5.25	5,120	500		2022

Peaks may operate small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More information regarding requirements for small stationary engines is available on the Department's website at the link below.
http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf

Additionally, Peaks may operate portable engines used for maintenance or emergency-only purposes. These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

Process Equipment

Equipment	Production Rate	Pollution Control Equipment
Anaerobic Digester	170,000 gal/day liquid manure	H_2S Scrubber, Activated Carbon Scrubbers, Flare
Gas Conversion Equipment	17,640 scf/hr RNG	Flare

Peaks may operate aqueous-based parts washers. The cleaning solution must contain less than 5% VOC. As such, it does not meet the definition of solvent cleaning machine, and there are no applicable requirements in *Solvent Cleaners,* 06-096 C.M.R. ch. 130. Aqueous-based parts washers are considered insignificant activities and mentioned for completeness purposes only.

D. Definitions

Records or *Logs* mean either hardcopy or electronic records.

Portable or Non-Road Engine means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than

12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

An engine is not a non-road (portable) engine if it remains or will remain at a location for more than 12 consecutive months or for a shorter period of time if sited at a seasonal source. A seasonal source is a source that remains in a single location for two years or more and which operates for fewer than 12 months in a calendar year. If an engine operates at a seasonal source for one entire season, the engine does not meet the criteria of a non-road (portable) engine and is subject to applicable stationary engine requirements.

E. Stationary Source Definition

Peaks proposes to construct and operate an RNG production facility on an existing commercial dairy farm located in Clinton, Maine. The dairy farm is owned by Flood Farm Properties, LLC (Flood Brothers).

Flood Brothers and other nearby farms will supply Peaks' facility with dairy manure to digest and convert to renewable natural gas suitable for injection into a natural gas distribution pipeline owned and operated by Summit Natural Gas of Maine, Inc. (Summit). Summit will own and operate pipeline interconnect equipment on the same site.

Pursuant to State and Federal definitions, two or more emissions units are to be considered a single stationary source if they meet all three of the following criteria:

- They are in the same industrial grouping;
- They are located on contiguous or adjacent property; and
- They are under common control.

Peaks and Flood Brothers are not in the same industrial grouping. Peaks and Summit are in the same industrial grouping and located on contiguous or adjacent property.

In April 2018, EPA issued clarification of its interpretation of "common control" in a letter to Pennsylvania DEP (the Meadowbrook letter[1]). The Meadowbrook letter explains EPA's view that control means the power or authority of one entity to dictate decisions of the other that could affect the applicability of, or compliance with, relevant air pollution regulatory requirements. In light of the Meadowbrook letter and based on the relationship between Peaks and Summit presented in the application and outlined above, the Department has determined that Peaks and Summit are not under common control and may be considered separate stationary sources. This air emission license addresses emission units of the Peaks facility.

[1] https://www.epa.gov/sites/production/files/2018-05/documents/meadowbrook_2018.pdf

F. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

A new source is considered a major source based on whether or not total licensed annual emissions exceed the "Significant Emission" levels as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100.

Pollutant	Total Licensed Annual Emissions (tpy)	Significant Emission Levels
PM	0.9	100
PM_{10}	0.9	100
SO_2	5.4	100
NO_x	5.7	100
CO	17.9	100
VOC	4.8	50

The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115.

G. Facility Classification

With the annual SO_2 emission limit for Flare #1, the facility is licensed as follows:

- As a natural minor source of air emissions for all criteria pollutants except SO_2, because no license restrictions are necessary to keep facility emissions below major source thresholds for these criteria pollutants;
- As a synthetic minor source of air emissions for SO_2, because Peaks is subject to license restrictions that keep facility emissions below major source thresholds for SO_2; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Process Description

Flood Brothers and other nearby farms will supply Peaks' facility with dairy manure to digest and convert to renewable natural gas. The manure will be received within an enclosed dedicated structure and pumped through a rock trap into an equalization pit within an existing repurposed building. The manure will be diluted with wastewater from the milking parlor to meet the desired solids content and mixed to ensure homogenization.

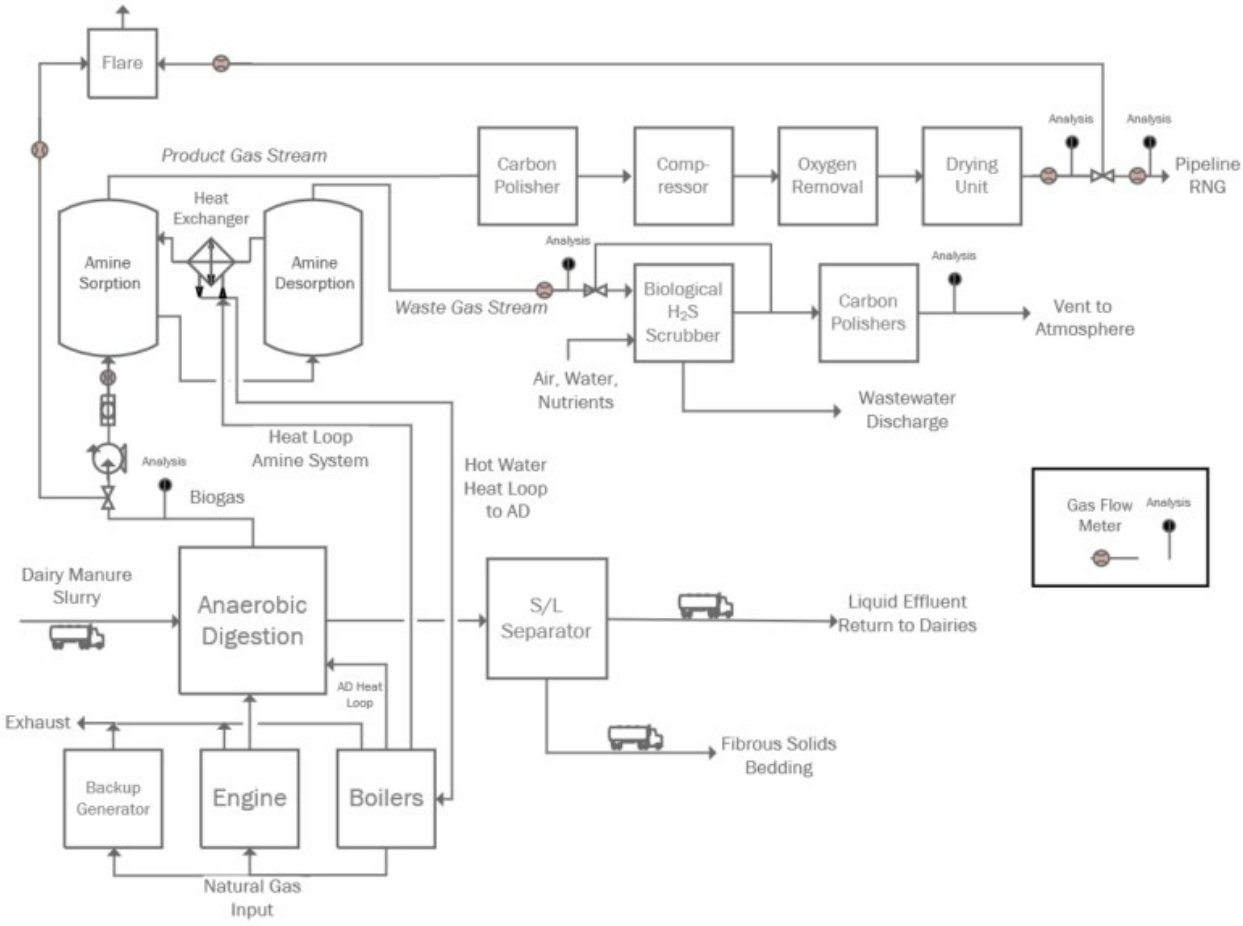
The manure will be pumped to the Anaerobic Digester which is a fixed-roof, mixed plug-flow digester tank containing two vessels with U-shaped flows that will process approximately 170,000 gallons per day. The Anaerobic Digester is designed to accelerate and control the decomposition of organic matter by microorganisms in the absence of oxygen. Anaerobic decomposition results in the conversion of organic matter to raw biogas consisting of primarily methane (CH_4) and carbon dioxide (CO_2) as well as small amounts of hydrogen sulfide (H_2S), volatile organic compounds (VOC), oxygen (O_2), nitrogen (N_2), and water. The Anaerobic Digester is designed to produce up to 540 standard cubic feet per minute (scfm) of raw biogas with a methane content of 40-60% and a H_2S content of up to 3,500 parts per million by volume (ppmv).

The raw biogas will be scrubbed to remove CO_2, H_2S, and other impurities using a skid-mounted upgrade system. The upgrade system includes an Amine Scrubber which produces a waste gas stream (tail gas) consisting of CO_2, H_2S at a concentration of up to 8,800 ppmv, water, and trace amounts of methane. Peaks proposes to treat the tail gas to remove H_2S using a biologic scrubber followed by two activated carbon polishers (carbon scrubbers) operated in lead-lag series.

The product gas exiting the Amine Scrubber will be refined further by passing the gas through two parallel activated carbon polishers (carbon scrubber) to remove any residual H_2S. The product gas will then be compressed using electrically-driven compressors, passed through two parallel oxygen removal systems and an adsorption dryer to remove moisture, and then chilled. At this point the product gas is pipeline quality RNG which is sent to the interconnection facility and transferred to Summit.

The proposed project includes operation of a flare (Flare #1) for safe disposal of gas during certain situations. Peaks will have the ability to divert gas to the flare for disposal from several points in the process.

Below is a simplified process flow diagram for the RNG production process.



The proposed facility will also include natural gas-fired boilers (Boilers #1 - #4) to provide heat to the Anaerobic Digester, a combined heat and power engine/generator (Co-Gen #1) to provide process heat and a portion of the facility's electrical needs, and an emergency generator.

C. Anaerobic Digester and Amine Scrubber

As described above, the Anaerobic Digester will produce raw biogas that is then refined to pipeline natural gas quality. The Amine Scrubber which follows the Anaerobic Digester produces a tail gas consisting mostly of CO_2 and H_2S, with some water and trace amounts of methane. The following BACT analysis addresses control of pollutants in the tail gas stream prior to it being vented to atmosphere.

Please note, the following BACT analysis does not address the control efficiency of any process units treating the product gas after the amine scrubber (e.g., the carbon scrubber on the product gas stream). The Department is not aware of any air exhaust stream from this equipment if it is operating as intended and producing pipeline quality natural gas. In

cases where the gas does not meet pipeline quality, the system is vented to the facility's flare which is addressed in the next section.

1. BACT Findings

CO_2 is a regulated pollutant, but it is specifically excluded from minor New Source Review in accordance with 06-096 C.M.R. ch. 100, § 150(H).

H_2S is a regulated pollutant pursuant to 06-096 C.M.R. ch. 100, § 150(B), because there are several New Source Performance Standards that contain standards for H_2S. Additionally, the destruction of H_2S through combustion (e.g., flaring) results in proportional emissions of sulfur dioxide (SO_2), a criteria pollutant.

Potential control technologies considered for removal of H_2S from the tail gas stream include biologic scrubbers, activated carbon scrubbers, and iron media scrubbers.

a. Biologic Scrubbers

Biologic removal of H_2S is achieved by using sulfur-oxidizing bacteria to convert H_2S to elemental sulfur and sulfates. One such system manufactured by BiogasClean utilizes a biological trickle filter. The gas to be cleaned is mixed with air using a blower set to introduce roughly 2% oxygen (10% air) to the gas stream. This gas stream is introduced into the bottom of a trickling filter with packing material containing sulfur-oxidizing bacteria. As the gas rises across the packing material, a continuously recycled liquid nutrient solution is flowing downward. The bacteria meet the H_2S in the gas stream and the water and nutrients in the liquid. A biological reaction occurs which converts the H_2S to elemental sulfur and/or sulfates and sulfuric acid.

Biologic scrubbers have been demonstrated to achieve an H_2S control efficiency of over 90%. The vendors for this project have designed and sized a biological scrubber to handle a flow rate of 220 scfm with a concentration of 9,000 ppmv of H_2S with a control efficiency of greater than 99%. The system is designed so that scrubbed gas leaves the trickling filter at less than 50 ppmv H_2S.

The use of a biologic scrubber has been determined to be feasible and has been selected as part of the BACT strategy for the tail gas from the Amine Scrubber.

b. Carbon Scrubber

Adsorption is the process by which molecules collect on and adhere to the surface of an adsorbent solid due to physical and/or chemical forces. Activated carbon is typically used as an adsorbent because of its large surface area which is a critical factor in the adsorption process. As gas passes through the carbon scrubber, H_2S is adsorbed onto the activated carbon. Before the activated carbon is saturated, the scrubber must be taken off-line and the spent media replaced. The control efficiency

of carbon scrubbers for H_2S removal ranges from 90 – 99% depending on the inlet H_2S concentration.

The use of a carbon scrubber has been determined to be feasible and has been selected as part of the BACT strategy for the tail gas from the Amine Scrubber. Peaks has proposed two carbon scrubbers following the biologic scrubber to "polish" or remove any H_2S that remains in the tail gas stream. The vendors for this project have designed and sized the dual carbon scrubbers such that each carbon scrubber will be capable of handling the full load of tail gas to allow for maintenance downtime of the other carbon scrubber as well as the biologic scrubber. The carbon scrubbers will be able to operate either in parallel or in series as need to ensure the exhaust gas reaches an emission limit of 10 ppmv of H_2S or less.

c. Iron Scrubber

An iron scrubber is composed of vessel(s) containing iron sponge, which consists of a hydrated form of iron oxide infused into wood shavings. As the gas passes through the iron sponge material, the following chemical reaction takes place converting H_2S to iron sulfide and water.

$$H_2S + Fe(OH)_2 \rightarrow FeS + 2H_2O$$

To perform efficiently, the iron sponge must be maintained within a specific moisture content range. If the iron sponge becomes dry, control efficiency will be lost. The useful life of the iron sponge will vary depending on the inlet H_2S concentration, flow rate, and vessel mass. Before a scrubber is completely spent, the scrubber must be taken offline and the iron sponge replaced. The control efficiency of an iron scrubber for H_2S removal is approximately 75% for treatment of biogas with an inlet concentration of 3,500 ppmv H_2S.

The use of an iron scrubber has been determined to be feasible for control of H_2S from the tail gas from the Amine Scrubber.

d. Ranking of Control Technologies

Biologic scrubbers, carbon scrubbers, and iron scrubbers were all determined to be technically feasible control technologies for H_2S from the tail gas from the Amine Scrubber. Peaks has proposed the use of the two strategies with the highest control efficiencies, i.e., a biologic scrubber (>90% control) followed by two parallel carbon scrubbers (90-99% control). Each carbon scrubber will be sized to be able to control the full load of H_2S in the tail gas for periods when the biologic scrubber or second carbon scrubber is offline due to malfunction or maintenance. Peaks has proposed an emission limit of 10 ppmv H_2S following the carbon scrubbers, which represents a control efficiency of greater than 99%.

e. Determination

The Department finds the use of the proposed biologic scrubber followed by carbon scrubbers and an emission limit of 10 ppmv on a 12-month rolling average basis to represent BACT for H_2S from the tail gas from the Amine Scrubber.

This limit applies at all times. Compliance with the H_2S ppmv limit shall be demonstrated by sampling the concentration of the H_2S in the tail gas entering and exiting the control equipment (i.e., inlet to the biologic scrubber and the carbon scrubber outlet) at least once per calendar month using a handheld monitor or equivalent. The handheld monitor or equivalent shall be operated, calibrated, and maintained in accordance with the manufacturer's specifications.

At least annually, Peaks shall test the tail gas entering and exiting the control equipment three times during a single day (i.e., three samples at the inlet to the biologic scrubber and three samples at the carbon scrubber outlet) using ASTM Test Method D5504, or other methods as approved by the Department, to analyze for H_2S and total sulfur.

Concurrent with the annual test, measurements of H_2S shall be taken with the handheld monitor or equivalent. If the results of the handheld (or equivalent) sampling does not correspond within reasonable accuracy to the annual test results, Peaks shall re-assess/replace/recalibrate the handheld monitor, or equivalent, as appropriate to obtain valid sampling results.

For the monthly and annual H_2S sampling required by this license, Peaks shall develop a written site-specific monitoring plan that addresses methods and equipment used, data collection, and the quality assurance and quality control elements. The monitoring plan shall be submitted to the Department for approval prior to startup of the Anaerobic Digester.

Peaks shall calculate and record the estimated mass emissions of H_2S from the tail gas vented to atmosphere on a monthly basis. Emissions shall be based on monthly sampling of exit H_2S concentration and tail gas flow rates.

2. Periodic Monitoring

Peaks shall keep records for the following periodic monitoring for the Anaerobic Digester and Amine Scrubber:

a. H_2S concentration (ppmv) entering the biologic scrubber on a monthly average basis;
b. H_2S concentration (ppmv) exiting the carbon scrubbers on a monthly average and 12- month rolling average basis;
c. Amount of tail gas (scf) sent to the scrubbing system (i.e., biologic and carbon scrubbers) on a monthly basis;

d. Date, time, duration, and reason for any downtime of the biologic scrubber;
e. Date, time, duration, and reason for any period of time when both carbon scrubbers are out of service; and
f. Records of any maintenance activities performed (planned or unplanned) on the biologic scrubber and the carbon scrubbers.

D. Flare #1

The proposed project includes the use of an elevated, semi-enclosed, automatic-spark, candlestick flare for safe disposal of gas during certain situations. The flare will be equipped with a pilot that burns either natural gas or propane. Peaks will have the ability to divert gas from several points in the process under the following circumstances:

- During equipment downtime due to scheduled maintenance or unplanned outage in the gas upgrade equipment, it may be necessary to divert the raw biogas from the Anaerobic Digester to the flare.

- If the RNG product gas stream does not meet pipeline quality natural gas specifications, it will be diverted to the flare.

- When conducting maintenance on equipment or a section of piping, the equipment will be isolated and the gas (raw biogas or product gas) will either be reinjected into the process or diverted to the flare.

1. BACT Findings

Combustion of raw biogas or product gas in Flare #1 will convert any sulfur compounds, including H_2S, to SO_2. Peaks estimates the H_2S concentration in the raw biogas will be 3,500 ppmv at a flowrate of 606.7 scfm. Product gas would have a significantly lower H_2S concentration. Based on these assumptions, Peaks has proposed SO_2 emission limits for Flare #1 of 21.51 lb/hr and 5.4 tpy.

Annual emissions of PM, PM_{10}, NO_x, CO, and VOC from Flare #1 are dependent upon the amount and the heat content of the gas sent to the flare. Peaks has proposed an annual limit of 37,350 MMBtu/year. Compliance shall be demonstrated by monthly and annual calculations of the heat input to Flare #1 based on the amount and heat content of any gas combusted in Flare #1. Peaks shall operate flow meters to continuously monitor the amount (scf) of each gas stream (raw biogas or product gas) combusted in Flare #1. The heat content shall be determined by sampling of the methane content of each gas stream at least monthly. The calculations shall use the 12-month rolling average of heat content (of each gas separately) or the average of all available monthly values if less than 12 months is available (i.e., first year after startup).

The Department finds that the proposed annual limits above and the short term limits described below represent BACT for Flare #1.

The BACT emission limits for Flare #1 were based on the following:

PM/PM_{10}	–	7.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
SO_2	–	21.51 lb/hr based on facility estimates
NO_x	–	0.068 lb/MMBtu based on AP-42 Table 13.5-1 dated 2/18
CO	–	0.31 lb/MMBtu based on AP-42 Table 13.5-1 dated 2/18
VOC	–	0.14 lb/MMBtu based on AP-42 Table 13.5-1 dated 2/18
Visible Emissions	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Flare #1 are the following:

Unit	Pollutant	lb/MMBtu
Flare #1	PM	0.01

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Flare #1	0.28	0.28	21.51	2.54	11.58	5.23

Compliance with the short-term emission limits for Flare #1 shall be demonstrated by use of standardized emission factors (for all pollutants other than SO_2) and the periodic monitoring required by this license.

Compliance with the short-term and annual SO_2 limits shall be demonstrated by sampling the concentration of the H_2S in each gas stream sent to the flare at least once per calendar month using a handheld monitor or equivalent. Calculations of SO_2 shall be based on the 12-month rolling average of H_2S concentration or the average of all available monthly values if less than 12 months is available (i.e., first year after startup). The handheld monitor or equivalent shall be operated, calibrated, and maintained in accordance with the manufacturer's specifications.

Visible emissions from Flare #1 shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated by testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

2. Periodic Monitoring

Peaks shall keep records for the following periodic monitoring for Flare #1:

a. Amount (scf) of each gas stream combusted in Flare #1 on a monthly basis;
b. H_2S concentration (ppmv) of each gas stream combusted in Flare #1 on a monthly and 12-month rolling average basis;

c. Heat content (based on methane content) of each gas stream combusted in Flare #1 on a monthly and 12-month rolling average basis;
d. Monthly calculations and annual totals of the SO_2 emissions from Flare #1; and
e. Records of any maintenance activities performed (planned or unplanned) on the biologic scrubber and the carbon scrubbers.

E. Fugitive VOC Emissions

The raw biogas, tail gas, and product gas will all contain small amounts of VOC. Operation of the facility's equipment and maintenance activities will result in fugitive emissions of gas. Annual combined emissions of VOC from fugitive emissions is expected to be less than 0.1 tpy based on the analysis of the chemical composition of raw biogas from other similar facilities and a collection efficiency of 98% based the digester collection efficiency in Table IIf of the US EPA Climate Leaders Greenhouse Gas Inventory Protocol Offset Project Methodology. It is therefore considered an insignificant activity mentioned for completeness only.

F. Boilers #1 - #4

Peaks proposes to install four boilers, Boilers #1 and #2 each rated at 4.3 MMBtu/hr and Boilers #3 and #4 each rated at 5.1 MMBtu/hr. These units will fire only pipeline quality natural gas. The boilers will provide indirect contact heat through heat exchangers to the manure within the Anaerobic Digester to accelerate the decomposition process. Boilers #1 and #2 will exhaust through a common stack, and Boilers #3 and #4 will exhaust through a common stack. Each of the boiler stacks will be at least 26.5 feet above ground level.

1. BACT Findings

Peaks submitted a BACT analysis for control of emissions from Boilers #1 - #4.

a. Particulate Matter (PM, PM_{10})
Peaks has proposed to burn only low-ash content fuels (natural gas) in Boilers #1 - #4. Additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for PM/PM_{10} emissions from Boilers #1 - #4 is the firing of natural gas and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)
Peaks has proposed to fire only natural gas in Boilers #1 - #4. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for SO_2 emissions from Boilers #1 - #4 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

Peaks has proposed the use of low-NO_x burners (LNBs) on Boilers #1 - #4 which will result in a reduction of NO_x emissions by approximately 50%. Additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for NO_x emissions from Boilers #1 - #4 is the firing of only natural gas, use of LNBs, and the emission limits listed in the tables below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

Peaks considered several control strategies for the control of CO and VOC including oxidation catalysts and thermal oxidizers.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the units in question. These controls were determined to not be economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for CO and VOC emissions from Boilers #1 - #4 is the firing of natural gas and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for Boilers #1 - #4 were based on the following:

PM/PM_{10}	–	7.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	50 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	06-096 C.M.R. ch. 101

The BACT emission limits for Boilers #1 - #4 are the following:

Unit	Pollutant	lb/MMBtu
Boiler #1	PM	0.01
Boiler #2	PM	0.01
Boiler #3	PM	0.01
Boiler #4	PM	0.01

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.03	0.03	–	0.21	0.35	0.02
Boiler #2	0.03	0.03	–	0.21	0.35	0.02
Boiler #3	0.04	0.04	–	0.25	0.42	0.03
Boiler #4	0.04	0.04	–	0.25	0.42	0.03

2. Visible Emissions

   Visible emissions from Boilers #1 - #4 (each) shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated by testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

   Due to their size, Boilers #1 - #4 are not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

4. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJJ

   Boilers #1 - #4 are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ. Natural gas-fired units are exempt from the requirements of this regulation. [40 C.F.R. §§ 63.11195(e)]

G. Co-Gen #1

Peaks proposes to install and operate a new stationary non-emergency generator (Co-Gen #1). Co-Gen #1 is a generator set consisting of an engine and an electrical generator as well as hot water heat recovery from both the engine oil and exhaust. The engine will be a 260 brake horsepower (bhp), 4-stroke, rich-burn engine which fires pipeline quality natural gas. The engine's maximum heat input is calculated to be 2.69 MMBtu/hr. Co-Gen #1 will not fire biogas straight from the Anaerobic Digester or any other gas that does not meet pipeline quality natural gas standards.

1. BACT Findings

Peaks submitted a BACT analysis for control of emissions from Co-Gen #1.

a. Particulate Matter (PM, PM_{10})
Peaks has proposed to burn only low-ash content fuels (natural gas) in Co-Gen #1. Additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for PM/PM_{10} emissions from Co-Gen #1 is the firing of natural gas and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)
Peaks has proposed to fire only natural gas in Co-Gen #1. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for SO_2 emissions from Co-Gen #1 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)
Peaks considered the use of several control technologies for the reduction of NO_x from Co-Gen #1 including selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), and the use of a three-way catalyst.

SCR
SCR employs the reaction of NO_x with ammonia in the presence of a catalyst to produce nitrogen and water. The reduction is considered "selective" because the catalyst selectively targets NO_x reduction in the presence of ammonia within a temperature range of approximately 480 ºF to 800 ºF, according to the following reactions:

$$4NO + 4NH_3 + O_2 \rightarrow 4N_2 + 6H_2O$$
$$2NO_2 + 4NH_3 + O_2 \rightarrow 3N_2 + 6H_2O$$

SCR systems have typical control efficiencies between 70 – 90%. However, use of SCR on small reciprocating internal combustion engines is not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled. Additionally, use of SCR results in emissions of unreacted ammonia as an environmental trade-of.

SNCR

SNCR is a method of post combustion control that selectively reduces NO_x into nitrogen and water vapor by reacting the exhaust gas with a reagent such as ammonia or urea, similar to SCR. However, in SNCR, a catalyst is not used to lower the activation temperature of the NO_x reduction reaction. Therefore, SNCR is used when flue gas temperatures are between 1600 ºF and 2100 ºF. The NO_x reduction efficiency decreases rapidly at temperatures outside this optimum temperature window which results in excessive unreacted ammonia slip and increased NO_x emissions. The exhaust temperature for Co-Gen #1 is significantly lower than the temperature range needed for efficient application of SNCR technology. Heating of the exhaust gas to the temperatures required for the reaction to take place would require burning additional fuel, creating additional emissions of NO_x and other pollutants. Additionally, use of SNCR results in emissions of unreacted ammonia. Therefore, SNCR is determined to not be technically feasible without significant environmental trade-offs.

Three-Way Catalyst

Three-way catalytic converters are designed to perform multiple oxidation reactions and reduction reactions simultaneously. The specially formulated catalyst allows the reduction of NO_x by CO and the oxidation of CO and VOC by oxygen to occur at the same time. It functions most efficiently in rich-burn engines, slightly below the stoichiometric point. Three-way catalysts are typically used with an air-to-fuel ratio (AFR) controller to maintain a slightly rich mixture. AFR controllers use a feedback signal from an oxygen sensor located in the front of the catalyst.

Peaks has proposed the use of a three-way catalyst on Co-Gen #1 and an emission limit of 0.04 lb/hr based on a vendor guarantee of 0.14 lb/MW-hr.

BACT for NO_x emissions from Co-Gen #1 is the firing of natural gas, use of a three-way catalyst, use of an engine compliant with 40 C.F.R. Part 60, Subpart JJJJ, and an emission limit of 0.04 lb/hr.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

The three-way catalyst included in the BACT determination for NO_x also reduces emissions of CO and VOC. Any other add-on controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for CO and VOC emissions from Co-Gen #1 is the firing of natural gas, use of a three-way catalyst, use of an engine compliant with 40 C.F.R. Part 60, Subpart JJJJ, and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for Co-Gen #1 were based on the following:

PM/PM_{10}	- 0.02 lb/MMBtu based on AP-42 Table 3.2-3 dated 7/00
SO_2	- 0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	- 0.14 lb/MW-hr based on vendor guarantee
CO	- 2.0 g/bhp-hr based on 40 C.F.R. Part 60, Subpart JJJJ, Table 1
VOC	- 0.7 g/bhp-hr based on 40 C.F.R. Part 60, Subpart JJJJ, Table 1
Opacity	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Co-Gen #1 are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Co-Gen #1	0.05	0.05	–	0.04	1.15	0.40

2. Visible Emissions

Visible emissions from Co-Gen #1 shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated by testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

The Department has determined that the proposed BACT visible emission limit is more stringent than the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for the generator has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the air emission license.

3. 40 C.F.R. Part 60, Subpart JJJJ

Standards of Performance for Spark Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart JJJJ is applicable to Co-Gen #1 since the unit was ordered after June 12, 2006, and manufactured after July 1, 2008. [40 C.F.R. § 60.4230] By meeting the requirements of 40 C.F.R. Part 60, Subpart JJJJ, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart JJJJ requirements is listed below.

a. Emission Standards

Co-Gen #1 is subject to emission standards for non-emergency spark ignition natural gas-fired engines between 100 – 500 Hp manufactured after January 1, 2011 contained in 40 C.F.R. Part 63, Subpart JJJJ, Table 1 pursuant to 40 C.F.R. § 63.4233(e).

b. Control Requirements

The air-to-fuel ratio controller (AFR controller) must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. [40 C.F.R. § 60.4243(g)]

c. Certified vs. Non-Certified Engine

Subpart JJJJ requires Peaks to either purchase an engine certified by the manufacturer to meet the applicable emission standards or, for non-certified engines, to demonstrate compliance with the emission standards through performance testing.

Peaks may elect to not operate a certified engine in accordance with the manufacturer's written instructions. If the engine is not operated according to the manufacturer's written instructions, it will be considered a non-certified engine. Peaks shall notify the Department in writing within 30 days if at any point it intends to operate Co-Gen #1 as a non-certified engine.

(1) Certified Engine

(i) If Peaks purchases a certified engine and elects to operate it as a certified engine:

1. The engine shall be certified by the manufacturer as meeting the emission standards for non-emergency spark ignition natural gas-fired engines between 100 – 500 Hp found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. §§ 60.4233(e) & 60.4243(b)(1)]

2. The engine and control device shall be operated and maintained according to the manufacturer's emission-related written instructions. Peaks may only change those settings that are permitted by the manufacturer. [40 C.F.R. §§ 60.4243(a)(1) & (b)(1)]

3. A copy of the manufacturer's written instructions shall be provided to the Department upon request. [06-096 C.M.R. ch. 115, BACT]

(ii) If Peaks purchases a certified engine and elects to not operate it as a certified engine:

1. Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. §§ 60.4243(a)(2)(ii) & (b)(1)]

2. Peaks shall conduct an initial performance test within 1 year of engine startup to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. §§ 60.4243(a)(2)(ii) & (b)(1)]

   Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

   Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

   (1) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
   (2) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

3. Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed. [40 C.F.R. § 60.4245(d) and 06-096 C.M.R. ch. 115]

(2) Non-Certified Engine

If Peaks purchases a non-certified engine:

(i) Compliance Demonstration
Within 60 days of achieving the maximum production rate, but not later than 180 days from initial startup, Peaks shall conduct an initial performance test on the engine to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in Table 1. [40 C.F.R. §§ 60.8(a) and 60.4243(b)(2)(i)]

Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

(1) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
(2) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

(ii) Maintenance Plan

Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 60.4243(b)(2)(i)]

(iii) Reporting

Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed.
[40 C.F.R. § 60.4245(d) and 06-096 C.M.R. ch. 115]

d. Recordkeeping

Peaks shall keep records of the following for Co-Gen #1:

(1) All notifications submitted to comply with this subpart;
(2) All maintenance conducted on the engine;
(3) Documentation that the engine meets the emission standards (e.g., copies of performance test reports or supplier certification).

[40 C.F.R. § 60.4245(a)]

H. Emergency Generator #1

Peaks proposes to install and operate a new stationary emergency generator (Emergency Generator #1). Emergency Generator #1 is a generator set consisting of an engine and an electrical generator. The engine will be a 711 bhp, 4-stroke, lean-burn engine which fires pipeline quality natural gas. The engine's maximum heat input is calculated to be 5.25 MMBtu/hr. Emergency Generator #1 will not fire biogas straight from the Anaerobic Digester or any other gas that does not meet pipeline quality natural gas standards.

1. BACT Findings

Peaks submitted a BACT analysis for control of emissions from Emergency Generator #1.

a. Particulate Matter (PM, PM_{10}), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC)

Peaks has proposed to burn only low-ash content fuels (natural gas) in Emergency Generator #1 and the use of an engine compliant with 40 C.F.R. Part 60, Subpart JJJJ. Additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for PM/PM_{10}, CO, and VOC emissions from Emergency Generator #1 is the firing of natural gas, use of an engine compliant with 40 C.F.R. Part 60, Subpart JJJJ, and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)

Peaks has proposed to fire only natural gas in Emergency Generator #1. The use of this fuel results in minimal emissions of SO_2, and additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for SO_2 emissions from Emergency Generator #1 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

Peaks considered several control strategies for the control of NO_x including Selective Non-Catalytic Reduction (SNCR) and using an engine compliant with 40 C.F.R. Part 60, Subpart JJJJ.

SNCR is not economically feasible for use on engines of this size and limited use.

BACT for NO_x emissions from Emergency Generator #1 is the use of an engine compliant with 40 C.F.R. Part 60, Subpart JJJJ and the emission limits in the tables below.

d. Emission Limits

The BACT emission limits for Emergency Generator #1 are based on the following:

PM/PM_{10}	- 0.01 lb/MMBtu based on AP-42 Table 3.2-2 dated 7/00
SO_2	- 5.88 x 10^{-4} lb/MMBtu based on AP-42 Table 3.2-2 dated 7/00
NO_x	- 2.0 g/bhp-hr based on 40 C.F.R. Part 60, Subpart JJJJ, Table 1
CO	- 4.0 g/bhp-hr based on 40 C.F.R. Part 60, Subpart JJJJ, Table 1
VOC	- 1.0 g/bhp-hr based on 40 C.F.R. Part 60, Subpart JJJJ, Table 1
Opacity	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Emergency Generator #1 are the following:

Unit	Pollutant	lb/MMBtu
Emergency Generator #1	PM	0.01

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator #1	0.05	0.05	–	3.13	6.27	1.57

Visible emissions from Emergency Generator #1 shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated by testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

The Department has determined that the proposed BACT visible emission limit is more stringent than the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for the generator has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the air emission license.

2. 40 C.F.R. Part 60, Subpart JJJJ

Standards of Performance for Spark Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart JJJJ is applicable to the emergency engine listed above since the unit will be ordered after June 12, 2006, and manufactured after January 1, 2009. [40 C.F.R. § 60.4230] By meeting the requirements of 40 C.F.R. Part 60, Subpart JJJJ, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart JJJJ requirements is listed below.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart JJJJ, a stationary reciprocating internal combustion engine (ICE) is considered an emergency stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart JJJJ, resulting in the engine being subject to requirements applicable to non-emergency engines.

(1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

(ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. §§ 60.4243(d) and 60.4248]

b. Emission Standards

Emergency Generator #1 is subject emission standards for emergency engines greater than 130 Hp contained in 40 C.F.R. Part 63, Subpart JJJJ, Table 1 pursuant to 40 C.F.R. § 63.4233(e).

c. Certified vs. Non-Certified Engine

Subpart JJJJ requires Peaks to either purchase an engine certified by the manufacturer to meet the applicable emission standards or, for non-certified engines, to demonstrate compliance with the emission standards through performance testing.

Peaks may elect to not operate a certified engine in accordance with the manufacturer's written instructions. If the engine is not operated according to the manufacturer's written instructions, it will be considered a non-certified engine. Peaks shall notify the Department in writing within 30 days if at any point it intends to operate Emergency Generator #1 as a non-certified engine.

(1) Certified Engine

(i) If Peaks purchases a certified engine and elects to operate it as a certified engine:

1. The engine shall be certified by the manufacturer as meeting the emission standards for emergency engines greater than 130 Hp found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. §§ 60.4233(e) & 60.4243(b)(1)]

2. The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. Peaks may only change those settings that are permitted by the manufacturer. [40 C.F.R. §§ 60.4243(a)(1) & (b)(1)]

3. A copy of the manufacturer's written instructions shall be provided to the Department upon request. [06-096 C.M.R. ch. 115, BACT]

(ii) If Peaks purchases a certified engine and elects to not operate it as a certified engine:

1. Peaks shall keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. §§ 60.4243(a)(2)(iii) & (b)(1)]

2. Peaks shall conduct an initial performance test within 1 year of engine startup to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in Table 1. Subsequent performance tests shall be conducted every 8,760 hours or 3 years, whichever comes first. [40 C.F.R. §§ 60.4243(a)(2)(iii) & (b)(1)]

   Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

   Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

   (1) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]

   (2) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

3. Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed. [40 C.F.R. § 60.4245(d) and 06-096 C.M.R. ch. 115]

(2) Non-Certified Engine

If Peaks purchases a non-certified engine:

(i) Compliance Demonstration
Within 60 days of achieving the maximum production rate, but not later than 180 days from initial startup, Peaks shall conduct an initial performance test on the engine to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in Table 1. Subsequent

performance tests shall be conducted every 8,760 hours of operation or three years, whichever comes first. [40 C.F.R. §§ 60.8(a) and 4243(b)(2)(ii)]

Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

(1) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
(2) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

(ii) Maintenance Plan

Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 60.4243(b)(2)(ii)]

(iii) Reporting

Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed.
[40 C.F.R. §4245(d) and 06-096 C.M.R. ch. 115]

d. Non-Resettable Hour Meter Requirements

A non-resettable hour meter shall be installed and operated on the engine.
[40 C.F.R. § 60.4237]

e. Annual Time Limit for Maintenance and Testing

As an emergency engine, the unit shall be limited to 100 hours/year for maintenance and testing. The emergency engine may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours total allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 C.F.R. § 60.4243(d)]

f. Recordkeeping

Peaks shall keep records of the following for Emergency Generator #1:

(1) All notifications submitted to comply with this subpart;
(2) All maintenance conducted on the engine;

(3) Documentation that the engine meets the emission standards (e.g., copies of performance test reports or supplier certification).
[40 C.F.R. § 60.4245(a)]

(4) Hours of operation for the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4245(b)]

I. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.

J. General Process Emissions

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis.

K. Performance Test Protocol

For any performance testing required by this license, Peaks shall submit to the Department for approval a performance test protocol, as outlined in the Department's Performance Testing Guidance, at least 30 days prior to the scheduled date of the performance test. [06-096 C.M.R. ch. 115, BPT]

The Department's Performance Testing Guidance is available online at:
https://www.maine.gov/dep/air/emissions/testing.html

L. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee. Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum potential emissions were calculated based on the following assumptions:

- Operating Boilers #1 - #4 for 8,760 hrs/yr;
- Operating Co-Gen #1 for 8,760 hrs/yr
- Operating Emergency Generator #1 for 100 hrs/yr;
- A limit of 37,350 MMBtu/year for Flare #1;
- A limit of 5.4 tpy of SO_2 from Flare #1; and
- Expected emissions of H_2S.

Please note, this information provides the basis for fee calculation only and should not be construed to represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC	H_2S
Boiler #1	0.1	0.1	–	0.9	1.6	0.1	–
Boiler #2	0.1	0.1	–	0.9	1.6	0.1	–
Boiler #3	0.2	0.2	–	1.1	1.8	0.1	–
Boiler #4	0.2	0.2	–	1.1	1.8	0.1	–
Co-Gen #1	0.2	0.2	–	0.2	5.0	1.8	–
Emergency Generator #1	–	–	–	0.2	0.3	–	–
Flare #1	0.1	0.1	5.4	1.3	5.8	2.6	0.1
Tail Gas	–	–	–	–	–	–	0.1
Fugitive	–	–	–	–	–	–	0.9
Total TPY	**0.9**	**0.9**	**5.4**	**5.7**	**17.9**	**4.8**	**1.1**

Pollutant	Tons/year
Single HAP	7.9
Total HAP	19.9

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM_{10}	25
SO_2	50
NO_x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-1160-71-A-N subject to the following conditions.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S. § 347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 C.M.R. ch. 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license.
[06-096 C.M.R. ch. 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.
[06-096 C.M.R. ch. 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:

A. Perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
   1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
   2. Pursuant to any other requirement of this license to perform stack testing.

B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. Submit a written report to the Department within thirty (30) days from date of test completion.

[06-096 C.M.R. ch. 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. Within thirty (30) days following receipt of the written test report by the Department, or another alternative timeframe approved by the Department, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and

B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 C.M.R. ch. 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or license requirement. [06-096 C.M.R. ch. 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 C.M.R. ch. 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 C.M.R. ch. 115]

(16) The licensee shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605). [06-096 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(17) **Anaerobic Digester and Amine Scrubber**

A. Peaks shall operate a biological scrubber and carbon scrubbers to limit emissions of H_2S in the tail gas from the Amine Scrubber to 10 ppmv or less on a 12-month rolling average basis. This limit applies at all times. [06-096 C.M.R. ch. 115, BACT]

B. Compliance with the H_2S ppmv limit shall be demonstrated by sampling the concentration of the H_2S in the tail gas entering and exiting the control equipment (i.e., inlet to the biologic scrubber and the carbon scrubber outlet) at least once per calendar month using a handheld monitor or equivalent. [06-096 C.M.R. ch. 115, BACT]

C. The handheld monitor or equivalent shall be operated, calibrated, and maintained in accordance with the manufacturer's specifications. [06-096 C.M.R. ch. 115, BACT]

D. At least annually, Peaks shall test the tail gas entering and exiting the control equipment three times during a single day (i.e., three samples at the inlet to the biologic scrubber and three samples at the carbon scrubber outlet) using ASTM Test Method D5504, or other methods as approved by the Department, to analyze for H_2S and total sulfur. [06-096 C.M.R. ch. 115, BACT]

E. Concurrent with the annual test, measurements of H_2S shall be taken with the handheld monitor or equivalent. If the results of the handheld (or equivalent) sampling does not correspond within reasonable accuracy to the annual test results, Peaks shall re-assess/replace/recalibrate the handheld monitor, or equivalent, as appropriate to obtain valid sampling results. [06-096 C.M.R. ch. 115, BACT]

F. For the monthly and annual H_2S sampling required by this license, Peaks shall develop a written site-specific monitoring plan that addresses methods and equipment used, data collection, and the quality assurance and quality control elements. The monitoring plan shall be submitted to the Department for approval prior to startup of the Anaerobic Digester. [06-096 C.M.R. ch. 115, BACT]

G. Peaks shall calculate and record the estimated mass emissions of H_2S from the tail gas vented to atmosphere on a monthly basis. Emissions shall be based on monthly sampling of exit H_2S concentration and tail gas flow rates.
[06-096 C.M.R. ch. 115, BACT]

H. Peaks shall keep records for the following periodic monitoring for the Anaerobic Digester and Amine Scrubber:

1. H_2S concentration (ppmv) entering the biologic scrubber on a monthly average basis;
2. H_2S concentration (ppmv) exiting the carbon scrubbers on a monthly average and 12- month rolling average basis;
3. Amount of tail gas (scf) sent to the scrubbing system (i.e., biologic and carbon scrubbers) on a monthly basis;
4. Date, time, duration, and reason for any downtime of the biologic scrubber;
5. Date, time, duration, and reason for any period of time when both carbon scrubbers are out of service; and
6. Records of any maintenance activities performed (planned or unplanned) on the biologic scrubber and the carbon scrubbers.

[06-096 C.M.R. ch. 115, BACT]

(18) **Flare #1**

A. Flare #1 shall be limited to 37,350 MMBtu/year. Compliance shall be demonstrated by monthly and annual calculations of the heat input to Flare #1 based on the amount and heat content of each gas stream combusted in Flare #1. The calculations shall use the 12-month rolling average of heat content (of each gas separately) or the average of all available monthly values if less than 12 months is available (i.e., first year after startup). [06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Flare #1	PM	0.01	06-96 C.M.R. ch. 115, BACT

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Flare #1	0.28	0.28	21.51	2.54	11.58	5.23

D. Peaks shall not exceed emissions of 5.4 tpy of SO_2 from Flare #1 on a calendar year basis. [06-096 C.M.R. ch. 115, BACT]

E. Compliance with the short-term and annual SO_2 limits shall be demonstrated by sampling the concentration of the H_2S in each gas stream sent to the flare at least once per calendar month using a handheld monitor or equivalent. Calculations of SO_2 shall be based on the 12-month rolling average of H_2S concentration or the average of all available monthly values if less than 12 months is available (i.e., first year after startup). The handheld monitor or equivalent shall be operated, calibrated, and maintained in accordance with the manufacturer's specifications. [06-096 C.M.R. ch. 115, BACT]

F. Visible emissions from Flare #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

G. Peaks shall keep records for the following periodic monitoring for Flare #1:

1. Amount (scf) of each gas stream combusted in Flare #1 on a monthly basis;
2. H_2S concentration (ppmv) of each gas stream combusted in Flare #1 on a monthly and 12-month rolling average basis;
3. Heat content (based on methane content) of each gas stream combusted in Flare #1 on a monthly and 12-month rolling average basis;
4. Monthly calculations and annual totals of the SO_2 emissions from Flare #1; and
5. Records of any maintenance activities performed (planned or unplanned) on the biologic scrubber and the carbon scrubbers.

[06-096 C.M.R. ch. 115, BACT]

(19) **Boilers #1 - #4**

A. Peaks shall fire only natural gas in Boilers #1 - #4. [06-096 C.M.R. ch. 115, BACT]

B. Boilers #1 - #4 shall each be equipped with low-NO_x burners. [06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.01	06-096 C.M.R. ch. 115, BACT
Boiler #2	PM	0.01	06-096 C.M.R. ch. 115, BACT
Boiler #3	PM	0.01	06-096 C.M.R. ch. 115, BACT
Boiler #4	PM	0.01	06-096 C.M.R. ch. 115, BACT

D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	0.03	0.03	–	0.21	0.35	0.02
Boiler #2	0.03	0.03	–	0.21	0.35	0.02
Boiler #3	0.04	0.04	–	0.25	0.42	0.03
Boiler #4	0.04	0.04	–	0.25	0.42	0.03

E. Visible emissions from Boilers #1 - #4 (each) shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 3(A)(3)]

(20) **Co-Gen #1**

A. Peaks shall fire only natural gas in Co-Gen #1. [06-096 C.M.R. ch. 115, BACT]

B. Co-Gen #1 shall be equipped with a three-way catalyst for control of NO_x, CO, and VOC. [06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Co-Gen #1	0.05	0.05	–	0.04	1.15	0.40

D. Visible emissions from Co-Gen #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. Co-Gen #1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ, including the following:
[incorporated under 06-096 C.M.R. ch. 115, BACT]

1. Control Requirements
The air-to-fuel ratio controller (AFR controller) must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. [40 C.F.R. § 60.4243(g)]

2. Peaks shall notify the Department in writing within 30 days if at any point it intends to operate Co-Gen #1 as a non-certified engine. [06-096 C.M.R. ch. 115, BACT]

3. Certified Engine

   a. If Peaks purchases a certified engine and elects to operate it as a certified engine:

      (1) The engine shall be certified by the manufacturer as meeting the emission standards for non-emergency spark ignition natural gas-fired engines between 100 – 500 Hp found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. §§ 60.4233(e) & 60.4243(b)(1)]

      (2) The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. Peaks may only change those settings that are permitted by the manufacturer. [40 C.F.R. §§ 60.4243(a)(1) & (b)(1)]

      (3) A copy of the manufacturer's written instructions shall be provided to the Department upon request. [06-096 C.M.R. ch. 115, BACT]

   b. If Peaks purchases a certified engine and elects to <u>not</u> operate it as a certified engine:

      (1) Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. §§ 60.4243(a)(2)(ii) & (b)(1)]

      (2) Peaks shall conduct an initial performance test within 1 year of engine startup to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. §§ 60.4243(a)(2)(ii) & (b)(1)]

      (3) Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

      (4) Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

         (i) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
         (ii) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

      (5) Peaks shall submit a copy of each performance test report to the Department and EPA within <u>30 days</u> after the test has been completed. [40 C.F.R. § 60.4245(d) and 06-096 C.M.R. ch. 115]

4. Non-Certified Engine

   If Peaks purchases a non-certified engine:

   a. Within 60 days of achieving the maximum production rate, but not later than 180 days from initial startup, Peaks shall conduct an initial performance test on the engine to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in Table 1. [40 C.F.R. §§ 60.8(a) and 4243(b)(2)(i)]

   b. Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

   c. Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

      (1) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
      (2) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

   d. Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 60.4243(b)(2)(i)]

   e. Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed. [40 C.F.R. § 4245(d) and 06-096 C.M.R. ch. 115]

5. Peaks shall keep records for the following periodic monitoring for Co-Gen #1:

   a. All notifications submitted to comply with this subpart;
   b. All maintenance conducted on the engine;
   c. Documentation that the engine meets the emission standards (e.g., copies of performance test reports or supplier certification).

   [40 C.F.R. § 60.4245(a)]

(21) **Emergency Generator #1**

A. Emergency Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations.
[06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Emergency Generator #1	PM	0.01	06-096 C.M.R. ch. 115, BACT

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator #1	0.05	0.05	–	3.13	6.27	1.57

D. Visible emissions from Emergency Generator #1 shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. Emergency Generator #1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart JJJJ, including the following:
[incorporated under 06-096 C.M.R. ch. 115, BACT]

1. Peaks shall notify the Department in writing within 30 days if at any point it intends to operate Emergency Generator #1 as a non-certified engine. [06-096 C.M.R. ch. 115, BACT]

2. Certified Engine

   a. If Peaks purchases a certified engine and elects to operate it as a certified engine:

      (1) The engine shall be certified by the manufacturer as meeting the emission standards for emergency engines greater than 130 Hp found in 40 C.F.R. Part 60, Subpart JJJJ, Table 1. [40 C.F.R. §§ 60.4233(e) & 60.4243(b)(1)]

      (2) The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. Peaks may only change those settings that are permitted by the manufacturer.
      [40 C.F.R. §§ 60.4243(a) & (b)(1)]

      (3) A copy of the manufacturer's written instructions shall be provided to the Department upon request. [06-096 C.M.R. ch. 115, BACT]

b. If Peaks purchases a certified engine and elects to not operate it as a certified engine:

(1) Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. §§ 60.4243(a)(2)(iii) & (b)(1)]

(2) Peaks shall conduct an initial performance test within 1 year of engine startup to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in Table 1. Subsequent performance tests shall be conducted every 8,760 hours or 3 years, whichever comes first. [40 C.F.R. §§ 60.4243(a)(2)(iii) & (b)(1)]

(3) Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

(4) Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

(i) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
(ii) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

(5) Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed. [40 C.F.R. § 60.4245(d) and 06-096 C.M.R. ch. 115]

3. Non-Certified Engine

If Peaks purchases a non-certified engine:

a. Within 60 days of achieving the maximum production rate, but not later than 180 days from initial startup, Peaks shall conduct an initial performance test on the engine to demonstrate compliance with the applicable NO_x, CO, and VOC emission standards in Table 1. Subsequent performance tests shall be conducted every 8,760 hours of operation or three years, whichever comes first. [40 C.F.R. §§ 60.8(a) and 4243(b)(2)(ii)]

b. Peaks shall provide 30-days' notice of any performance test to both the Department and EPA. [40 C.F.R. § 60.8(d)]

c. Performance tests shall be conducted in accordance with 40 C.F.R. § 60.4244 including, but not limited to, the following:

(1) Each performance test shall be conducted within 10% of 100% peak (or the highest achievable) load. [40 C.F.R. § 60.4244(a)]
(2) When calculating emissions of VOC, emissions of formaldehyde shall not be included. [40 C.F.R. § 60.4244(f)]

d. Peaks shall keep a maintenance plan and records of conducted maintenance. Peaks shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 60.4243(b)(2)(ii)]

e. Peaks shall submit a copy of each performance test report to the Department and EPA within 30 days after the test has been completed. [40 C.F.R. § 4245(d) and 06-096 C.M.R. ch. 115]

4. Non-Resettable Hour Meter
A non-resettable hour meter shall be installed and operated on the emergency engine. [40 C.F.R. § 60.4237]

5. Annual Time Limit for Maintenance and Testing
As an emergency engine, the unit shall be limited to 100 hours/year for maintenance and testing. The emergency engine may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours total allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 C.F.R. § 60.4243(d]

6. Peaks shall keep records for the following periodic monitoring for Emergency Generator #1:

a. All notifications submitted to comply with this subpart;
b. All maintenance conducted on the engine;
c. Documentation that the engine meets the emission standards (e.g., copies of performance test reports or supplier certification).
[40 C.F.R. § 60.4245(a)]
d. Hours of operation for the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time.
[40 C.F.R. § 60.4245(b)]

(22) **Performance Test Protocol**

For any performance testing required by this license, Peaks shall submit to the Department for approval a performance test protocol, as outlined in the Department's Performance Testing Guidance, at least 30 days prior to the scheduled date of the performance test. [06-096 C.M.R. ch. 115, BPT]

(23) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis. [06-096 C.M.R. ch. 101, § 3(C)]

(24) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101, § 3(B)(4)]

DONE AND DATED IN AUGUSTA, MAINE THIS 1st DAY OF MARCH, 2022.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____ for ____
MELANIE LOYZIM, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 12/2/2021
Date of application acceptance: 12/3/2021

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

FILED

MAR 01, 2022

State of Maine
Board of Environmental Protection