

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: On-site Inspection

P110964433

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|--|--|----------------------------------|
| <b>FACILITY:</b> Hoover Road Real Estate, LLC                          |  | <b>SRN / ID:</b> P1109           |
| <b>LOCATION:</b> 21590 Hoover Road, WARREN                             |  | <b>DISTRICT:</b> Warren          |
| <b>CITY:</b> WARREN  |  | <b>COUNTY:</b> MACOMB            |
| <b>CONTACT:</b> Griffin Kas , Associate, Regulatory Compliance - Legal |  | <b>ACTIVITY DATE:</b> 08/05/2022 |
| <b>STAFF:</b> Robert Elmouchi  | <b>COMPLIANCE STATUS:</b> Non Compliance | <b>SOURCE CLASS:</b> SM OPT OUT  |
| <b>SUBJECT:</b> On-site inspections and emission tests.                |  |                                  |
| <b>RESOLVED COMPLAINTS:</b>  |  |                                  |

On November 16, 2021, April 22, and August 5, 2022, I conducted on-site scheduled inspections of Hoover Road Real Estate (SRN: P1109), located at 21590 Hoover Road, Warren, Michigan. Kaitlyn Leffert, AQD Environmental Quality Analyst, accompanied me during the April 2022 inspection. The purpose of these inspections was to determine the facility's compliance with the requirements of the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the administrative rules; and Air Use Permit to Install (PTI) number 10-20A.

## FACILITY DESCRIPTION

Hoover Road Real Estate (HRRE) is one of the largest licensed marijuana indoor grow facilities in Michigan. HRRE is licensed by the Michigan Department of Licensing and Regulatory Affairs - Cannabis Regulatory Agency to grow and process marijuana. This facility is licensed to grow 50,000 marijuana plants. It occupies a total of 207,000 square feet of space, of which 193,000 square feet is dedicated to growing marijuana. HRRE has multilayer ownership.

HRRE is the business entity regulated by the AQD. PharmaCann is the major corporate owner over Livwell Enlightened Health, who operates the business in partnership with HRRE. AQD permit 10-20A authorizes the operation of an electric powerplant consisting of six natural gas-fired RICE, a diesel-fired standby generator, three natural gas-fired boilers, and two solvent-based Essential Oil Extraction (EOE) emission units that are permitted to only use Liquid Petroleum Gas.

This facility has some notable differences in how it is designed and operated. The main difference is the construction and operation of a 6.4-megawatt natural gas-fired powerplant. This electric powerplant (FGCOGEN) consists of six 1.067 megawatt natural-gas fired generators, plus one 1.139-megawatt diesel-fired standby generator, which is a backup for whenever two of the six natural gas-fired engines are not operating. Furthermore, there are additional emission controls on EUGEN1 and EUGEN2. The emission controls on these two engines reduce air contaminants to the point that the exhaust from these engines is used to provide heat, water, and CO2 to the indoor grow operations.

It is important to note that internal combustion engine exhaust contains CO<sub>2</sub>, which is a plant nutrient, and ethylene, which is a plant hormone. In high enough concentrations, ethylene can cause premature maturation, brown leaves, and poor yield. The emission controls on EUGEN1 and EUGEN2 are designed to reduce ethylene to an acceptable level. The CO<sub>2</sub> concentration in the exhaust is too high for human health and cultivation, so it is diluted before venting it into grow rooms, which are equipped with CO<sub>2</sub> monitors.

## INSPECTIONS

On November 16, 2021, I met with Mr. James (Jim) Kelly, President of Cultivated Power, who has been the AQD's primary environmental contact for HRRE and Livwell Enlightened Health (LEH). Mr. Kelly is responsible for the engineering and installation of the powerplant. During this inspection I also met with Mr. Todd Oltmans, Vice President Operations and Construction; Mr. Tom Lauzon, Vice President of Development; Mr. Patrick Muller, LivWell Michigan Facility Manager; Mr. Cody Joner, GenTech – Field Service Technician; Mr. Aaron Bain, Bass Controls – Vice President; and Mr. Sri Krishna Bohora, AeriNOx – Project Engineer. Mr. Oltmans escorted Mr. Kelly and me throughout the facility inspection. Mr. Lauzon joined us about halfway through the facility inspection. Mr. Muller joined the four of us for the closing meeting.

On April 22, 2022, we met with Mr. James (Jim) Kelly, President of Cultivated Power; Ms. Meagan Goddard, Senior Manager of Production Compliance – Michigan LivWell Enlightened Health; and Ms. Shelly Edgerton, Michigan LivWell Enlightened Health. All attended the closing meeting.

On August 5, 2022, I met with Griffin Kas, Associate, Regulatory Compliance – Legal; and James (Jim) Kelly, President of Cultivated Power, who escorted me throughout the inspection. I was informed that Meagan Goddard was no longer with the company and that Evan Dupree - Compliance Manager would be the primary environmental compliance contact for EGLE. Evan was not able to attend this inspection. After the site inspection, Griffin, Jim, and I met with Ed Mullins, Supervisor; Patrick Muller, Senior Manager - Facilities; and Nathan Livingston, Manager of Facilities, to review recordkeeping, attend the closing meeting.

## FGCOGEN

FGCOGEN consists of six natural gas-fired engines used for electricity generation for the cannabis cultivation, extraction, processing, and distribution operations. Each engine is equipped with a SCR for control of NO<sub>x</sub> and CO, and oxidation catalyst for control of VOC and formaldehyde. The SCR system includes two 1,100-gallon Urea tanks shared by all six engines. The six natural gas-fired engines were operating during the August 5, 2022, inspection. I inspected the control room, which is a soundproofed room adjacent to the six engines and four boilers. During each

inspection we discussed the parametric monitoring system and how the engines are kept at a base load of 80 percent, which reserves generating capacity for peak HVAC and lighting power demands.

All of the emission limits are in grams per horsepower-hour, or parts per million. Compliance with these limits is determined through emissions testing. EUGEN1, EUGEN2, EUGEN3, EUGEN4, and EUGEN5 were tested on November 16, 2021. As of September 6, 2022, TPU staff Lindsey Wells has not completed her review of that emissions test report. Therefore, the emission limits compliance status determination for these engines is pending.

EUGEN6 was tested on August 5, 2022. Per FGOGEN V.1, The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. This test report is due October 4, 2022. Therefore, the emission limits compliance status determination for EUGEN6 is pending.

I was provided records of maintenance activities, hours of operation, natural gas use, and hours of operation, in compliance with the VI.2, 4, 5, and 7 monitoring and recordkeeping requirements. Records of natural gas use per hour demonstrate compliance with the 0.056 MMSCF per hour limit.

## **EUDIESEL**

This emission unit is a 1,528 HP (1,139 kW) diesel-fueled standby CI RICE, 2019 model year, with a displacement of 3 liters/cylinder.

The engine is manufactured by Mitsubishi Heavy Industries Engine & Turbocharger, LTD., which is in Sagamihara, Japan. Per the Generac statement of exhaust emissions, this engine model is certified and has been issued certificate number KMVXL37.1BBA-014. The model number is S12H-Y2PTAW-1, with a total cylinder displacement of 37.1 liters, which equals 2264 cubic inches. The serial number is 35415. The manufacture date was 11/2019. The nameplate rated output is 1528 horsepower at 1800 RPM, and 1140 kW at 1800 RPM. This is a compression ignition certified reciprocating internal combustion engine (RICE).

The generator portion of this generator set is a Generac model IDLC1000, model number MD1000KG02371D18APSY2, with a serial number of 3005672755. The production date is 20200305. This generator is rated at 1,000 KW, which is less than the permitted value of 1,139 KW.

On July 8, 2020, the AQD issued a violation notice for noncompliance with PTI 10-20, Special Condition III.1 and R 336.1225 because the permittee exceeded the permit limit of operating 100 hours per year on a 12-month rolling basis. EUDIESEL had operated for 137 hours on a 12-month rolling basis. PTI 10-20A was approved on December 2, 2020. This violation was resolved with the AQD's approval of PTI 10-20A, which permits the operation of EUDIESEL up to 250 hours per year.

On November 16, 2021, the non-resettable total-hours meter indicated 349 hours. On April 22, 2022, the non-resettable total-hours meter indicated 389 hours. Therefore, the total hours value appears to indicate compliance with the PTI 10-20A limit.

### **EUEXTRACTION - ESSENTIAL OIL EXTRACTION (EOE)**

During the inspection of November 16, 2021, I observed that HRRE had installed a solvent-based cannabis extraction unit without obtaining an approved permit to install. This was cited in a violation notice dated December 20, 2021. Resolution of this violation is pending a PTI modification, which is currently under review by Lauren Magirl of the AQD permit section.

On August 5, 2022, I conducted another inspection of the Essential Oil Extraction (EOE) process equipment. HRRE uses internal designations for each EOE processing room. The permitted EUEXTRACTION process is in a C1D1 fire rated room because the solvent is Liquid Petroleum Gas (LPG). We reviewed recordkeeping and emission limits. The calculated emissions appeared valid and in compliance with the permitted limit of 22.3 tpy of VOC.

The unpermitted ethanol extraction process is in a C1D2 fire rated room because of the fire risks associated with handling ethanol.

### **EMAILS - ESSENTIAL OIL EXTRACTION**

#### **EMAIL INQUIRY**

On August 19, 2022, 12:49 p.m. I received the following email message from Evan Dupree,

“Good Afternoon Robert & Kristen [Kaitlyn],

Our processor license is considering adding in some additional equipment that I want to check if EGLE has jurisdiction over. The two proposed pieces of extraction equipment are a Rotary Evaporator and Short Path Distiller.

The rotary evaporator further refines crude cannabis oil by rotating a large flask in a hot water bath, causing suspended solvents to be evaporated into a condensation chamber, where a coil filled with chilled water causes the evaporated solvent to recondense to a liquid. At this point it falls into a collection chamber and can be emptied out into a container for reuse.

The short-path distiller uses a vacuum to induce boiling of crude cannabis oil at low temperatures. The apparatus then sorts out solvent, cannabinoids and terpenes from each other. These can be separated out from each other.

At no point do either of these machines offgas solvent into or outside of the facility.

Before proceeding with any applications to introduce this equipment to the facility, I want to get your take if this would require an application and/or an inspection with EGLE.

Please let me know if you have any follow up questions for me or clarifications I can provide.”

#### EMAIL REPLY

On Friday, August 19, 2022, 4:16 p.m. I replied,

“Hi Evan,

Thank you for the inquiry and the detailed descriptions of a rotary evaporator and short path distiller.

I am familiar with the rotary evaporator as well as the short path distillation processes and have seen them in use. I disagree with the assertion, “At no point do either of these machines off-gas solvent into or outside of the facility.” Both the rotary evaporator and the short path distiller use one or more condensers to collect materials and control the emission of air contaminants. Per the USEPA Knowledge Base\*, “Condenser efficiencies vary from 50 to 95 percent, and are dependent on the type of gas stream entering the condenser and on the condenser operating parameters (e.g., coolant temperature).”

Because the rotary evaporator and short path distiller emit air contaminants, they are subject to the permitting requirements of R 336.1201(1) (attached). If Hoover Road Real Estate intends to install a rotary evaporator and/or a short path distiller, they must demonstrate that the process equipment is exempt from permitting or obtain an approved air use permit to install (PTI) before purchasing the equipment and bringing it on site. I would be happy to participate in a conference call to answer any questions.

Please note that if Hoover Road Real Estate can demonstrate that the requirement for approval of a PTI before construction will create an undue hardship, once an application has been received and an application number has been assigned, you may request a waiver to proceed with construction. However, the operation of the equipment shall not be authorized until the application for a permit to install has been approved by the AQD. Please read R 336.1202 (attached) for specific details.

I'd also like to bring to your attention that a Violation Notice (attached) dated December 20, 2021, cited Hoover Road Real Estate for installing a solvent-based cannabis extraction unit (also known as the C1D2 ethanol extraction unit) without obtaining an approved PTI. I do not have the authority to instruct Hoover Road Real Estate to cease the operation of the unpermitted process equipment. Nevertheless, it is important to note that operating the unpermitted C1D2 ethanol extraction constitutes an ongoing violation of R 336.1201(1). I am emphasizing this point because I'm concerned that I did not properly convey the significance of the continued operation of unpermitted equipment during the most recent inspection on August 5, 2022. Again, I would be happy to participate in a conference call to answer any questions you may have.

Regards,

Bob

\* [https://www.epa.gov/air-emissions-monitoring-knowledge-base/monitoring-control-technique-condensers#:~:text=Condenser%20efficiencies%20vary%20from%2050,\(e.g.%2C%20coolant%20temperature\).](https://www.epa.gov/air-emissions-monitoring-knowledge-base/monitoring-control-technique-condensers#:~:text=Condenser%20efficiencies%20vary%20from%2050,(e.g.%2C%20coolant%20temperature).)

## ESSENTIAL OIL EXTRACTION - COMPLIANCE DETERMINATION

Per subsequent emails and telephone conversations it was determined that HRRE had brought a rotary evaporator, and a short path distiller on site. I was informed that the rotary evaporator, and a short path distiller had not been operated at HRRE

and that the day after my email reply, both emission units were removed and relocated to facilities outside of Michigan. Per discussion with my district supervisor, Joyce Zhu, I am applying enforcement discretion and choosing to not cite the noncompliance in a violation notice because the emission units (EUs) have a low potential to emit, the EUs had not been operated, and because the EUs were removed within one day after HRRE became aware of the violation.

I also confirmed that the C1D2 ethanol extraction system has not been operated since my email of August 19, 2022. Because the C1D2 ethanol extraction system was cited in the violation notice dated December 20, 2021, and the emission unit is in a PTI modification pending approval by the AQD, I have elected to not cite this non-compliance a second time.

## **FGBOILERS**

**NOTE:** The flexible group description in PTI No. 10-20A states, *“Three (3) dual fueled boilers used for backup electricity generation for the cannabis cultivation, extraction, processing and distribution operations.”* This is not correct. The boilers are only constructed for backup hot water (not steam) generation for building heat and dehumidification. This description error is being addressed in the pending permit modification.

## **PERMITTED BOILERS**

This facility is permitted to install and operate three (3) 6.0 MMBtu/hr. natural gas-fired or and propane fired, boilers (FGBOILERS) to provide heat and dehumidification for the building interior. These boilers generate hot water, no steam is generated. As of the April 22, 2022, inspection, these three boilers had not been installed. On the August 5, 2022, inspection, I observed that the three permitted boilers had been installed, were operational, and were in standby mode.

## **UNPERMITTED 33.476 MMBtu PER HOUR BOILER**

During the November 16, 2021, inspection, I observed that an unpermitted natural gas-fired boiler was installed. It was a Cleaver Brooks packaged boiler; model number CB 700-800, serial number L-93614. The nameplate on the boiler indicated it was rated at a maximum heat input of 33.476 MMBtu per hour. I informed Mr. Oltmans, Mr. Lauzon, and Mr. Kelly that installation of this boiler without an approved PTI is a violation of R 336.1201(1). Mr. Oltmans stated that HRRE will take corrective actions to achieve compliance. Per a follow-up cell phone meeting with Mr. Kelly, I was informed that this boiler does not generate steam. HRRE installed this boiler as an emergency backup for hot water and building heat should FGCOGEN malfunction, which did occur for 16-hours on December 25, 2020. Per a subsequent Teams meeting with HRRE, I was informed that this boiler has operated

Per my review of the Code of Federal Regulations, it appears that the Cleaver Brooks 33.476 MMBtu natural gas-fired boiler is neither subject to a new source performance standard (NSPS) under 40 CFR Part 60, nor a national emission standard for hazardous air pollutants for source categories (NESHAP) under Part 63. Nevertheless, it appears that this boiler is subject to the Michigan Air Pollution Control Rules and the installation of this emission unit is in violation of R 336.1201 (1). A violation notice citing this violation was issued on December 20, 2021.

After the violation notice was issued, per comments received from Acting Supervisor Sebastian Kallumkal on December 21, 2021, it appeared that this boiler is exempt from R 336.1201(1) per R 336.1282(2)(b)(i). Per follow up discussions with Mr. Kallumkal, I sent the following email to Mr. Todd Oltmans,

“An error in my compliance determination regarding the violation notice dated December 20, 2021, has been brought to my attention. A violation of R 336.1201(1) was cited for installing a 33.476 MMBtu natural gas-fired boiler without obtaining an approved permit to install. This is an incorrect citation and is not a violation because R 336.1282 states in part, “The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the following: (b) Fuel-burning equipment which is used for space heating, service water heating, electric power generation, oil and gas production or processing, or indirect heating and which burns only the following fuels: (i) Sweet natural gas, synthetic natural gas, liquefied petroleum gas, or a combination thereof and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour.”

Therefore, when replying to the violation notice, please indicate this boiler is exempt from R 336.1201(1) per R 336.1282(2)(b)(i).

The remainder of the violation notice is valid and remains in effect.

I apologize for the inconvenience caused by my error. Please accept my apology and feel free to contact me if you have any questions or comments.”

On January 5, 2022, I held a Teams meeting with permit engineer Janelle Trowhill to discuss the unpermitted installation of the 33.476 MMBtu natural gas-fired boiler, because I had been contacted by Jim Kelly, who asked if a fourth 6 MMBtu natural gas-fired boiler could be installed per the R 336.1282(2)(b)(i) exemption, or if the installation of the 6 MMBtu boiler required a permit modification. We reevaluated how a 33.476 MMBtu boiler could be exempt per R 336.1282(2)(b)(i) but the three 6 MMBtu boilers were required to be permitted. During this review, we determined that because both the 33.476 MMBtu and the 6 MMBtu boilers were part of the PTI No. 10-20A project, both boilers needed to be permitted. On January 6, 2022, Janelle and I held a Teams meeting with Mark Mitchell, Permit Section Manager, and Joyce Zhu, AQD Warren District Office Supervisor, to discuss our applicability determination. Mark and Joyce agreed that both boilers need to be permitted.



On January 7, 2022, a video conference meeting was held with Mr. Todd Oltmans, Ms. Shannelle Montoya, Mr. Mark Gill, Mr. Randy Rinker, Mr. Jim Kelly and me to discuss the violation notice and the AQD's recent applicability determination. The meeting was friendly and, as requested, I sent Mr. Oltmans the following email summarizing the AQD's applicability determination,

"Thank you for taking the time to discuss the violation notice dated December 20, 2021.

Because the AQD was recently informed of plans to install a fourth 6 MMBtu natural gas boiler, a second compliance review of the unpermitted 33.476 MMBtu natural gas-fired boiler was conducted. Per this second review, the AQD has determined that despite the R 336.1282(b)(i) exemption noted below, the unpermitted installation of the 33.476 MMBtu natural gas-fired boiler is in violation of R 336.1201(1) because the unpermitted boiler is part of the project approved per permit to install (PTI) No. 10-20A.

During the 10-20A application review process, modeling was not required because Hoover Road Real Estate accepted legally enforceable limits on NOx emissions to less than 10 tons per year (25% of the NOx Significant Level of 40 tpy). Records indicate that PTI 10-20A limits NOx emissions to 9.66 tpy. Because the installation of the unpermitted boiler has the potential to increase NOx emissions to greater than 10 tpy, Hoover Road Real Estate must apply for a permit modification.

Therefore, please disregard my email dated December 21, 2021, and respond to the violation notice in its entirety.

Thank you again for your attention to resolving the violations and for the cooperation that was extended to me during my inspection of November 16, 2021."

The 33.476 MMBtu natural gas-fired boiler was removed June 2022. I visually confirmed this boiler had been removed. A permit modification application has been submitted, which includes the fourth 6 MMBtu boiler. Approval of this permit is pending review by the Lauren Magirl of the AQD permit section.

#### **UNPERMITTED 6.0 MMBtu/hr. NATURAL GAS-FIRED or PROPANE-FIRED BOILER**

On August 5, 2022, I also observed a fourth (4<sup>th</sup>) identical 6.0 MMBtu/hr. natural gas-fired or and propane fired-boiler that was not permitted. It was installed, operational, and in standby mode. All four boilers (three permitted and one unpermitted) were installed adjacent to each other in the mechanical building, which also houses the natural gas-fired generators. The installation of the fourth (4<sup>th</sup>) boiler without

obtaining an approved permit constitutes a violation of R 336.1201(1) of the administrative rules promulgated under Act 451, which states in part, ***“Except as allowed in R 336.1202, R 336.1277 to R 336.1291, or R 336.2823(15) a person shall not install, construct, reconstruct, relocate, or modify any process or process equipment, including control equipment pertaining thereto, which may emit any of the following [air pollutants and air contaminants], unless a permit to install that authorizes such action is issued by the department.”***

The installation of the fourth (4<sup>th</sup>) boiler without obtaining an approved permit also constitutes a violation of PTI No. 10-20A, General Condition 1, which states, ***“The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule.”***

These two violations shall be cited in a violation notice.

#### CONCLUSION

Hoover Road Real Estate is in violation of R 336.1201(1), and PTI No. 10-20A, General Condition 1, which shall be cited in a violation notice.

NAME

Robert Umarchi

DATE

9/7/2022

SUPERVISOR

Joyce