

State Registration Number
B2814

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B2814-2014

Detroit Thermal Beacon Heating Plant

SRN: B2814

Located at

541 Madison, Detroit, Michigan 48226

Permit Number: MI-ROP-B2814-2014

Staff Report Date: January 27, 2014

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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RENEWABLE OPERATING PERMIT

JANUARY 27, 2014 STAFF REPORT

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft permit pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	Detroit Thermal Beacon Heating Plant 541 Madison Detroit, Michigan 48226
Source Registration Number (SRN):	B2814
North American Industry Classification System (NAICS) Code:	221330
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201300125
Responsible Official:	Richard Pucak, President 313-963-3395
AQD Contact:	Todd Zynda, Environmental Engineer 313-456-2761
Date Permit Application Received:	July 25, 2013
Date Application Was Administratively Complete:	August 2, 2013
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	January 27, 2014
Deadline for Public Comment:	February 26, 2014

Source Description

Detroit Thermal Beacon Heating Plant (DTBHP), a subsidiary of Detroit Renewable Energy, is located in downtown Detroit at 541 Madison Avenue. To the west of the facility is the 36th District Court, to the north is Ford Field Stadium, to the south are the Wayne County Jail and Wayne County Third Circuit Court, and to the east is the Chrysler Freeway (Interstate 375). The facility currently has 17 employees and operates 24 hours a day 7 days a week.

DTBHP operates six boilers that are used to generate/supply steam to various commercial, industrial, and residential customers in the downtown Detroit area. The six boilers primarily fire natural gas but have the capacity to fire No. 2 fuel oil as a backup. Boilers 1, 2, and 4 were installed in the 1920's and have a rated heat input capacity of 570 million British thermal units per hour (MMBtu/hr). Boiler 3 was installed in the 1959, and has a rated heat input capacity of 600 MMBtu/hr. Boiler 5 was permanently shut down and removed from the facility. Boilers 6 and 7 were installed during 2007 and are rated at 180.2 MMBtu/hr. Boilers 6 and 7 are equipped with low nitrogen oxides (NO_x) burners and flue gas recirculation.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the **2012** submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	0.12 tons
Lead (Pb)	0.19 lb
Nitrogen Oxides (NO _x)	40 tons
Particulate Matter (PM)	1.14 tons
Sulfur Dioxide (SO ₂)	0.1 tons
Volatile Organic Compounds (VOCs)	1 ton

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases in tons per year of CO₂e is 1,655,250 tons. CO₂e is a calculation of the combined global warming potentials of six Greenhouse Gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

See Parts C and D in the draft ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is located in Wayne County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants. A small portion of Wayne County has been designated by the USEPA as nonattainment for sulfur dioxide (SO₂). DTBHP is not located within the SO₂ nonattainment area.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit nitrogen oxides and carbon monoxide exceeds 100 tons per year and the potential

to emit of Greenhouse Gases is 100,000 tons per year or more calculated as carbon dioxide equivalents (CO₂e) and 100 tons per year or more on a mass basis.

EU-BOILER6 and EU-BOILER7 at the stationary source were subject to review under the Prevention of Significant Deterioration regulations of CFR 40, Part 52.21, because at the time of New Source Review permitting the potential to emit of carbon monoxide and nitrogen dioxide was greater than 100 tons per year.

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR 98 is not an ROP applicable requirement and is not included in the ROP.

EU-BOILER1, EU-BOILER2, EU-BOILER3, and EU-BOILER4 were installed prior to August 15, 1967. As a result, this equipment was considered "grandfathered" and was not subject to New Source Review (NSR) permitting requirements. However, modifications at this source caused this equipment to become subject to NSR permitting requirements. EU-BOILER6 and EU-BOILER7 which officially started up on March 9, 2007 are subject to NSR.

EU-BOILER6 and EU-BOILER7 at the stationary source are subject to the New Source Performance Standards for Industrial and Commercial Institutional Steam Generating Units promulgated in 40 CFR, Part 60, Subparts A and Db.

EU-BOILER1, EU-BOILER2, EU-BOILER3, and EU-BOILER4 are not subject to Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971 as promulgated in 40 CFR, Part 60, Subparts A and D. Boilers 1 through 4 are not subject to Subpart D as the change from coal burning boilers to natural gas/no.2 fuel oil boilers does not constitute as a modification as defined in §60.2.

There are no Maximum Achievable Control Technology Standards or National Emission Standard for Hazardous Air Pollutants-subject sources at the facility.

The stationary source has no emission units subject to the federal Acid Rain program promulgated in 40 CFR of, Part 72 because it is not capable of generating 25 megawatts.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

The emission limitation(s) or standard(s) for NO_x from FG-BOILER_6,7 at the stationary source are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR, Part 64, because the emission limitation(s) or standard(s) meet the CAM exemption for a continuous compliance determination method. Therefore, FG-BOILER_6,7 is exempt from CAM requirements for NO_x. The source has Predictive Emissions Monitoring (PEMs) installed on Boilers 6 and 7.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B2814-2009 are identified in Appendix 6 of the ROP.

PTI Number			
249-74	128-75	63-05	63-05A

Streamlined/Subsumed Requirements

This permit does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Non-applicable Requirements

Part E of the draft ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the draft ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

Exempt Emission Unit ID	Description of Exempt Emission Unit	Rule 212(4) Exemption	Rule 201 Exemption
EU-COMBUSTION_AIR_HEATER	Natural gas-fired combustion air heater (max heat input: 20 MMBtu/hr)	Rule 212(4)(b)	Rule 282(b)(i)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This permit does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by the DEQ

The AQD proposes to approve this permit. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD’s proposed action and draft permit. In addition, the U.S. Environmental Protection Agency (USEPA) is allowed up to 45 days to review the draft permit and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Wilhemina McLemore, Detroit District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

RENEWABLE OPERATING PERMIT

ROP Number

B2814

MARCH 5, 2014 STAFF REPORT ADDENDUM

MI-ROP-B2814-2014

Purpose

A Staff Report dated January 27, 2014, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	Richard Pucak, President 313-963-3395
AQD Contact:	Todd Zynda, Environmental Engineer 313-456-2761

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period.

Changes to the January 27, 2014 Draft ROP

No changes were made to the draft ROP.