

State Registration Number
N7396

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N7396-2022

White Pine Copper Refinery, Inc.

State Registration Number (SRN): N7396

Located at

20784 Willow Road, White Pine, Ontonagon County, Michigan 49971

Permit Number: MI-ROP-N7396-2022

Staff Report Date: August 8, 2022

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) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), 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

AUGUST 8, 2022 - STAFF REPORT

ROP Number

MI-ROP-N7396-2022

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan's Administrative Rules for Air Pollution Control promulgated under 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 Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP 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:	White Pine Copper Refinery, Inc. 29784 Willow Road White Pine, Michigan 49971
Source Registration Number (SRN):	N7396
North American Industry Classification System (NAICS) Code:	331411
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202100213
Responsible Official:	Zachary Halkola, Chief Operating Officer 906-885-7100
AQD Contact:	Joseph Scanlan, Environmental Quality Analyst 906-458-6405
Date Application Received:	October 26, 2021
Date Application Was Administratively Complete:	October 26, 2021
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	August 8, 2022
Deadline for Public Comment:	September 7, 2022

Source Description

The White Pine Copper Refinery, Inc. (WPCR) facility is located in Carp Township, Ontonagon County, Michigan, six (6) miles south of Lake Superior. The Copper Range Company began operating an underground copper mine in the 1950's in White Pine, Michigan. The WPCR was constructed in 1982. The refinery process used electrochemical dissolution of impure copper anodes in an acid electrolyte bath and electroplating of pure copper ions onto stainless steel cathodes. Auxiliary processes were operated to control the amount of copper ions in the refining electrolyte and to remove by-product impurities in the copper anodes.

The mine was shut down by the Copper Range Company in 1996. In January of 1998, BHP Copper White Pine Refinery Inc. purchased all of the equipment associated with the mine's copper refining processes including the boiler house and electrical generators. In 2004, the White Pine Copper Refinery, Inc. transferred ownership/control of the Power Complex to White Pine Electric Power, LLC. The refinery continued in operation until purchased by Hudson Bay Mining and Smelting (HBM&S), Ltd in January 2006. Refinery operations were curtailed in August of 2010 due to HBM&S closing its copper smelter in Canada. The Refinery was purchased by Traxys Power Group in June of 2011. PM Power Group (PMPG) purchased the refinery in August of 2014 from Traxys. A preliminary study was completed in 2010 to convert the refinery from electro-refining to electro-winning.

The facility operated the following equipment and/or processes: a Nickel Sulfate Recovery System, Anode Scrape and Cathode washing machines, a 22 MMBtu per hour Vertical Shaft Furnace, a Contilanod Anode Casting System, Tank house Ventilation for the electrolytic copper refining operations, a Slimes Treatment System, and the Electrometals Electrowinning (EMEW) System.

The EMEW System has been in reduced operation since 2010. The process involves the electrolytic recovery of copper from an aqueous solution of sulfuric acid. EMEW is comprised of 8 modules consisting of 90 cells each, for a total of 720 cells, and four sulfuric acid storage tanks. Using titanium anodes with an iridium coating, the system makes copper cathodes ranging from 20-45 pounds. The EMEW system is operating daily, however at a very reduced rate of only 30 active cells. Emissions are controlled with an exhaust ventilation system, scrubber, and demister. The refinery plant and EMEW system can produce up to approximately 75,000 long tons of copper cathodes annually.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year 2020.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	0
Lead (Pb)	0
Nitrogen Oxides (NO _x)	0
Particulate Matter (PM)	0
Sulfur Dioxide (SO ₂)	0
Volatile Organic Compounds (VOCs)	0

This source is a true minor source of HAPs, thus no HAP emissions data is listed.

See Parts C and D in the 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 in Ontonagon County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of carbon monoxide exceeds 100 tons per year. EUSF02, the Vertical Shaft Furnace (PTI No. 56-81) is fired with natural gas and is operated in a reducing atmosphere, creating significant emissions of carbon monoxide (CO). The furnace has not operated in many years.

The stationary source is a minor source of HAP emissions because the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

EUSF02 at the stationary source was subject to review under the Prevention of Significant Deterioration regulations of The Michigan Air Pollution control Rules Part 18, Prevention of Significant Deterioration of Air Quality or 40 CFR 52.21 because at the time of New Source Review permitting the potential to emit of carbon monoxide was greater than 100 tons per year.

Although EURA01 Slimes Treatment was installed after August 15, 1967, this equipment was exempt from New Source Review (NSR) permitting requirements at the time it was installed. However, future modifications of this equipment may be subject to NSR.

Significant changes from the previous ROP include changes to test requirement frequency from "within 180 days of restart of operation" to "upon request from AQD District Supervisor" for emission units with testing requirements as the compliance method with applicable emission limits. Emission units subject to testing are currently operating at limited capacity or are not operating at all; this change in testing language is necessary to ensure a reasonable method of compliance for applicable emission limits.

EURF02R1 Liberator Cell Enclosed Electrowinning System (Permit to Install (PTI) No. 321-07) has been renamed the EMEW System and replaced EURF02 Liberator Cell System which is not operating as the electrical system was removed.

The Anode Casting System, EUSM13, ceased operations in 1996 and was removed during the demolition of the copper smelter in 2011.

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."

No emission units have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds

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-N7396-2017 are identified in Appendix 6 of the ROP.

PTI Number			
321-07	127-82	30-82	627-81
626-81	365-81	57-81	56-81
432-74			

Streamlined/Subsumed Requirements

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

Non-applicable Requirements

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

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EUBOILER1	100 HP Boiler that provides steam	R 336.1212(4)(c)	R 336.1 282(2)(b)(i)
EUBOILER2	100 HP Boiler that provides steam	R 336.1 212(4)(c)	R 336.1 282(2)(b)(i)
EUSTEAM	4 1 MMBtu/hr Boilers that provide steam	R 336.1212(4)(c)	R 336.1 282(b)(i)
EUCOMFORT	Misc. heaters for comfort heat (<100,000 Btu/hr each)	R 336.1 212(4)(c)	R 336.1 282(b)(i)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP 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 EGLE, AQD

The AQD proposes to approve this ROP. 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 USEPA is allowed up to 45 days to review the draft ROP 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 Michael Conklin, Acting Marquette District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP 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.

State Registration Number
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RENEWABLE OPERATING PERMIT
SEPTEMBER 12, 2022 - STAFF REPORT
ADDENDUM

ROP Number
MI-ROP-N7396-2022

Purpose

A Staff Report dated August 8, 2022, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. 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 Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	Zachary Halkola, Chief Operating Officer 906-885-7100
AQD Contact:	Joseph Scanlan, Environmental Quality Analyst 906-458-6405

Summary of Pertinent Comments

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

Changes to the August 8, 2022 Draft ROP

No changes were made to the draft ROP.