

State Registration Number
P1028

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-P1028-2022d

**Corteva Agriscience, LLC
and
Clean Harbors Industrial Services**

State Registration Number (SRN): P1028

Located at

Corteva Agriscience, LLC, 701 Washington Street, Midland, Midland County, Michigan 48667
and
Clean Harbors Industrial Services, Building 492, J Street, Midland, Midland County, Michigan 48642

Permit Number: MI-ROP-P1028-2022d
Staff Report Date: June 13, 2022
Amended Dates: November 3, 2022
April 21, 2023
June 5, 2023
September 14, 2023

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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State Registration Number

P1028

RENEWABLE OPERATING PERMIT

JUNE 13, 2022 - STAFF REPORT

ROP Number

MI-ROP-P1028-2022

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:	Section 1: Corteva Agriscience, LLC 701 Washington Street Midland, Michigan 48667 Section 2: Clean Harbors Industrial Services Safety-Kleen Systems, Inc. 4704 NE 22 nd Street Des Moines, Iowa 50313
Source Registration Number (SRN):	P1028
North American Industry Classification System (NAICS) Code:	Section 1: 325199 Section 2: 562211
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance?	Significant Modification
Application Number:	201900086
Responsible Official:	Section 1: Kayla Peacock, Michigan Hub Responsible Care Leader Section 2: Mori Sorenson, Vice President Environmental Compliance
AQD Contact:	Kathy Brewer, Senior Environmental Quality Analyst 989-439-2100

Date Application Received:	
Date Application Was Administratively Complete:	
Is Application Shield in Effect?	NA
Date Public Comment Begins:	June 13, 2022
Deadline for Public Comment:	July 13, 2022

Source Description

Section 1 of the ROP covers Corteva Agrisciences, LLC (Corteva). Corteva is a chemical manufacturer located at 701 Washington Street in Midland, Michigan. The facility is located in an industrial area surrounded by other chemical manufacturers. Commercial businesses are approximately 1/3 mile north of the facility and the closest residential areas are approximately 1/2 mile north, northwest, and northeast of the facility. The Tittabawassee River is located approximately one mile west of the facility. Corteva manufactures chemical products using a variety of process equipment including: reactors, distillation/fractionation columns, separators, storage tanks/silos, condensers, thermal heat recovery and oxidation units, scrubbers, etc. Corteva maintains and operates Research and development facilities, storage tank farms, office building, and ancillary equipment such as boilers.

Section 2 of the ROP covers Clean Harbors Industrial Services (Clean Harbors) who own and operate a storage tank cleaning facility permitted to service Corteva and other Dow iPark manufacturers.

Corteva and Clean Harbors are located at a single Stationary Source with The Dow Chemical Company (Dow Chemical) (SRN: A4033), Dow Silicones Corporation (Dow Silicones) (SRN: A4043), DDP Specialty Electronic Materials US, Inc. (DDP) (SRN: P1027), Nutrition & Biosciences USA 1, LLC (N&B) (SRN: P1027), and Trinseo LLC (Trinseo) (SRN: P1025).

In 2016, Dow Silicones Corporation became a wholly owned subsidiary of The Dow Chemical Company. On April 1, 2019, The Dow Chemical Company, underwent a restructuring and split off its assets to form an industrial park with SK Saran Americas, LLC, Dow AgroSciences, LLC, Trinseo LLC, and DDP Specialty Electronic Materials US, Inc. SK Saran Americas, LLC ceased operations at the site in 2020. Nutrition & Biosciences USA 1, LLC has acquired and begun operating some assets formerly owned by DDP Specialty Electronic Materials US, Inc.

Dow Chemical is considered the landlord of the industrial park or stationary source whereas the other facilities are considered tenants that will own and operate their assets. They are one stationary source pursuant to the Clean Air Act. Dow Chemical owns the land and has lease agreements, product supply agreements, licensing agreements, business service agreements, technical service agreements, site service agreements, and other agreements with the facilities that give Dow Chemical common control.

Dow Chemical requested that each facility acquire its own Part 70, Title V, renewable operating permit (ROP). The Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), had the facilities submit individual ROP Significant Modification applications to enable each facility to acquire its own ROP. In the Source-Wide Requirements section of each facility's ROP, language has been added to indicate that all the facilities are one stationary source, and specific federal requirements or standards that apply to the entire stationary source have also been included.

Currently some emissions unit owned by one company can vent process exhaust to a control device owned by another company. Language has been included in the ROP that requires the generator of the emissions to acquire and the owner of the control device to provide adequate monitoring and records to demonstrate compliance with conditions in the ROP.

Control Device	Current Control Device Owner	Emission Unit	Current Emission Unit Owner
FG954THROX	Corteva (SRN P1028)	EU01, EU02, EU1028	Corteva (SRN P1028)
		EU06HIGHPURITY*, EU06LOWPURITY*, EU08+, EUB2, EUB5	DDP and N&B (SRN P1027)
		EU91	Trinseo (SRN P1025)
FG963THROX	DDP (SRN P1027)	EU88, EUANION_XCHG,	DDP (SRN P1027)

		EURULE290; EUB2 (N&B)	
		EU03, EU12b	Corteva (SRN P1028)
		EUB1	Trinseo (SRN P1025)
		EU82	Dow Chemical (SRN A4033)
FGHCLSCRUBBER	DDP (SRN P1027)	EU06HIGH PURITY* (N&B), EU06LOW PURITY*	DDP (SRN P1027)
		EU05*	Corteva (SRN P1028)

*Former EU85 (PTI No.78-03)

+ Former EU93 (PTI No. 284-07)

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2019**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	13
Lead (Pb)	NA
Nitrogen Oxides (NO _x)	188
Particulate Matter (PM)	23
Sulfur Dioxide (SO ₂)	9
Volatile Organic Compounds (VOCs)	252
Ammonia	32

For 2019, MAERS did not require Individual and accumulative HAPs to be reported annually for the entire stationary source. HAPs emissions are tracked by individual processes as required by the conditions in the ROP and per state and federal regulations. HAP emissions were not required by the ROP Significant Modification application.

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 Midland County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants. The stationary source is a chemical process plant and a major stationary source because its potential to emit of NO_x, PM, and VOCs are greater than 100 tons per year. The 32 hazardous waste incinerator at Dow Chemical is considered a “synthetic minor” source with regard to PSD as Dow Chemical accepted legally enforceable permit conditions limiting the potential to emit from the incinerator for SO₂, PM, PM₁₀ (PM less than 10 microns in diameter), PM_{2.5} (PM less than 2.5 microns in diameter), CO, fluorides, and sulfuric acid. The 32 incinerator was able to “net out” of PSD for NO_x.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70 because the potential to emit each of the following criteria pollutants exceeds 100 tons per year: NO_x, PM, and volatile organic compounds (VOCs). The stationary source is considered a major source of Hazardous Air

Pollutant (HAP) emissions because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year.

The stationary source is an existing Major Stationary Source for federal Prevention of Significant Deterioration (PSD) (40 CFR 52.21) regulations.

As stated above under the "Source Description", Corteva, Clean Harbors, Dow Chemical, Dow Silicones, DDP Specialty Electronic Materials US, Inc., Nutrition & Biosciences USA 1, LLC, and Trinseo, LLC, are one stationary source for New Source Review, PSD, and Title V Major Source applicability and determinations.

The stationary source is subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Asbestos promulgated in 40 CFR Part 61, Subparts A and M.

The stationary source is subject to the NESHAP General Provisions promulgated in 40 CFR Part 63, Subpart A.

The stationary source is subject to the NESHAP for Site Remediation promulgated in 40 CFR Part 63, Subpart GGGGG.

EU01, EU02, EU03, EU9, EU10, EU12b, EU1200, EU1028, EURULE290, and FG954THROX at the Corteva facility are subject to the National Emission Standard for Hazardous Air Pollutants for Equipment Leaks promulgated in 40 CFR Part 63, Subparts A and H.

EU01, EU02, EU03, EU9, EU10, EU12b, EU1028, EURULE290, and FG954THROX at the facility are subject to the National Emission Standard for Hazardous Air Pollutants for Pesticide Active Ingredient Production in 40 CFR Part 63, Subparts A and MMM.

EU01, EU02, EU9, EU12b, and EU1200 at the facility are subject to the National Emission Standard for Hazardous Air Pollutants for Organic Liquids Distribution (Non-Gasoline) promulgated in 40 CFR Part 63, Subparts A and EEEE.

EU9, EU1200, EURULE290, and FG954THROX at the facility are subject to the National Emission Standard for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing promulgated in 40 CFR Part 63, Subparts A and FFFF.

FG954THROX at the facility is subject to the National Emission Standard for Hazardous Air Pollutants for Cellulose Products Manufacturing in 40 CFR Part 63, Subparts A and UUUU.

FG954THROX at the facility is subject to the National Emission Standard for Hazardous Air Pollutant Emissions: Group I Polymers and Resins in 40 CFR Part 63, Subparts A and U.

FGBOILERS21&22 and EURULE290 (Garlon EU-FH-1000) at the facility are subject to the National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters – Major Sources in 40 CFR Part 63, Subpart DDDDD.

FGEMERGCIRICE and FGEMERGSIRICE at the facility are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines in 40 CFR Part 63, Subpart ZZZZ.

The FG954THROX control consists of the 954 TTU with absorber/quench (T-3601) and packed bed caustic and sodium thiosulfate scrubber (T-3602) located at 954 building. The FG954THROX control equipment

has previously been tested to show control efficiencies. A stack test in March 2022 at FG954THROX was conducted to verify operating parameters and demonstrate compliance for the following:

Control Equipment	Pollutant	UAR
TTU-954	TOC	Title 5 (T5)
	TOC	T5
	TOC as C1 @ 3%O2	PAI/MON 63.1365(a)(7)(i),(b) 63.2450(g)-(i)
Quench/Adsorber (T-3601) No. 1	HCl	T5
Scrubber (T-3602) No. 1	HCl	T5
Quench/Adsorber (T-3601) No. 1	Halide (HX)	PAI/MON; T5
Scrubber (T-3602) No. 1	Halide (HX)	PAI/MON; T5
Quench/Adsorber (T-3601) No. 1	Halogen (X ₂)	PAI/MON
Scrubber (T-3602) No. 1	Halogen (X ₂)	PAI/MON

The AQD's Rules 287 and 290 were revised on December 20, 2016. FGRULE287(2)(c) and FGRULE290 are flexible group tables created for emission units subject to these rules. Emission units installed before December 20, 2016, can comply with the requirements of Rule 287 and Rule 290 in effect at the time of installation or modification as identified in the tables. However, emission units installed or modified on or after December 20, 2016, must comply with the requirements of the current rules as outlined in the tables.

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 stationary source has no new large pollutant specific emission units since issuance of MI-ROP-A4033-2017c and the ROP Significant Modification application did not require Compliance Assurance Monitoring (CAM) plan submittals or revisions. CAM requirements from MI-ROP-A4033-2017c are carried forward in each emission unit or flexible group in the ROP. CAM will be reassessed during the next ROP Renewal.

Some EUs at the stationary source that vent process exhaust to FG954THROX may have emission limitations or standards for pollutants that are exempt from the federal Compliance Assurance Monitoring (CAM) regulation pursuant to 40 CFR 64.2(b)(1)(i) because the Special Conditions or standards contained in the ROP for the EU meet the CAM exemption for NSPS or MACT proposed after November 15, 1990. Refer to the EU in the ROP issued to each company based on SRN for CAM applicability.

The following Emission Units/Flexible Groups at Corteva are subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM):

Emission Unit/Flexible group ID	Pollutant/ Emission Limit	UAR(s)	Control Equipment	Monitoring (Include Monitoring Range)	Emission Unit/Flexible Group for CAM	PAM ? *
EUB2 CAM subject vents to FG954THROX (See Section 2 of MI-ROP-	EUB2 VOC =1.2pph	R 336.1702(c)	954 TTU (back up control when 963THROX in SRN	Exit gas temperature = minimum of 760 C TTU or any other limit demonstrated	FG954THRO X	Yes

Emission Unit/Flexible group ID	Pollutant/Emission Limit	UAR(s)	Control Equipment	Monitoring (Include Monitoring Range)	Emission Unit/Flexible Group for CAM	PAM ? *
P1027-2020a for SRN P1027)			P1027 Sec 1 not operating)	during testing. Excess oxygen in the exhaust gases = minimum of 3%, based on a 15-minute average, or any other limit demonstrated during stack testing		
EU06-LOWPURITY & EU06-HIGHPURITY CAM subject vents to FG954THROX (See Section 1 and Section 2 of MI-ROP-P1027-2020a for SRN P1027)	HCL/HAPs	R 336.1225 R 336.1910 40 CFR 64.6(c)(1)(i) and (ii))	954 Absorber/ Quench and Scrubber. (backup control when FGHCLSCRBBER [SRN P1027 Sec 1] is unavailable)	Absorber/quench (T-3601) exit gas temperature \leq 80 C, scrubber (T-3602) pH \geq 8.4 & recirculation flow \geq or 23.8 gpm	FG954THROX	No
EU1200 (New EU - PTI No. 37-20 - Monitoring not yet established)	VOC and acetone combined =20 ppmv; VOC and Acetone combined= 24.1 tpy	R 336.1205(1) R 336.1702(a) R 336.1702(a)	RTO-1870 RTO-1875	Combustion chamber temperature – TBD per MAP post stack testing	EU1200	TBD

*Presumptively Acceptable Monitoring (PAM)

FG954THROX receives vent exhaust from CAM subject emission units for VOCs at the DDP and N&B (See ROP for SRN P1027 Section 1 and Section 2) Dow iPark facilities that use the FG954THROX as backup control in the event the EUs process emission control device normally used for CAM subject EUs are not available. FG954THROX is considered a small pollutant specific emission unit for VOCs, as it has potential pre-controlled VOC emissions greater than major source levels, the control device (thermal oxidizer TOX) controls VOCs, and potential post-controlled emissions of VOCs less than major source thresholds. The thermal oxidizer is monitored for a minimum temperature and percent oxygen. Refer to FG954THROX monitoring conditions in the renewable operating permit for specifics.

EUB2 (N&B facility SRN P1027 Sec 2) is CAM subject for VOCs and PM10, but only vents processes subject to CAM for VOCs to FG954THROX as a backup control when 963THROX is unavailable (See FG963THROX in ROP for SRN P1027, Section 1).

FG954THROX receives vent exhaust from CAM subject emission units for HCL at the DDP and N&B Dow iPark facilities that use the FG954THROX as backup control in the event the EUs process emission control device normally used for CAM subject EUs are not available. FG954THROX is considered a small pollutant specific emission unit for HCL, as it has potential pre-controlled HCL emissions greater than major source levels, the control device (post 954 TTU absorber/quench (T-3601) and scrubber (T-3602) controls HCL, and potential post-controlled emissions of HCL less than major source thresholds. The absorber/quench exhaust gas temperature is monitored and the scrubber is monitored for flow and pH. Refer to FG954THROX monitoring conditions in the renewable operating permit for specifics.

The anhydrous HCl distribution system in EU06-LOWPURITY (DDP SRN P1027, Section 1) and EU06-HIGHPURITY (N&B SRN P1027, Section 2) are CAM subject for HAPs but only vent as a backup control when FGHCLSCRUBBER (SRN P1027, Section 1) is unavailable.

EU1200 is a newly installed process that began operating April 21, 2022. EU1200 is a new small pollutant specific emission unit for VOCs. It has an emission limit for VOCs, potential pre-controlled VOC emissions greater than major source levels, a control device (regenerative thermal oxidizer RTO) that controls VOCs, and potential post-controlled emissions of VOCs less than major source thresholds. The EU1200 ROP requirements include emission testing and submittal of a malfunction abatement plan to establish control device monitoring ranges. Refer to EU1200 monitoring conditions in the renewable operating permit for specifics.

FG954THROX is required to demonstrate compliance with the applicable emission limits and establish operating requirements for Emission Units that vent to the FG954THROX including but not limited to the items in the table below.

Company SRN number and EU venting to FG954THROX	ROP conditions	954 THROX parameters to monitor	MACT/Group Designation
P1028/EU01 AG MULTIPRODUCT HAPS and TACs 2-Octanol, Methanol, Acetonitrile Butyl bromide, Methyl isobutyl ketone, 2,2,4 Trimethyl pentane	SC IV.1 FG954THROX conditions	TTU exit gas temperature, minimum excess oxygen, quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	PAIP MACT Group 1
P1028/EU02 SULFOXAFLO HAPS and TACs Acetonitrile, Toluene, Benzene impurity, Chloroform, Hydrogen fluoride, Enamine, Fluorinated ketone, Methylthiobutanal, Sulfur dioxide	PTI 95-20 SC IV.1 FG954THROX conditions	TTU exit gas temperature, minimum excess oxygen, quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	PAIP MACT Group 1
P1028/EU1028 SPINETORAM HAPS and TACs Ethyl bromide	PTI 84-21 SC III.3 FG954THROX conditions including 99.0% DE	TTU exit gas temperature, minimum excess oxygen, quench column No. 1 exit gas temperature,	PAIP No Group 1 vents

		scrubber No.1 pH & effluent flow	
P1027/ EUB5 ETHOCEL Methyl chloride, propylene oxide, methanol	SC VI.7 99.9% DRE organic compounds	TTU exit gas temperature, scrubber pH & effluent flow	MON MACT Group 1 HON MACT Group 1 (Backup control)
P1027/ EUB2 METHOCEL Ethylene chloride, Toluene	SC VI.7 99.9% DRE organic compounds	TTU exit gas temperature, scrubber pH & effluent flow	Cellulosics MACT Group 1 (Backup control)
	SC .III.1 FG954THROX conditions	TTU exit gas temperature, minimum excess oxygen, quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	
P1027/EU06- LOWPURITY ANHYDROUS HCL UNLOADING, STORAGE & DISTRIBUTION HAPS and TACs Hydrogen chloride	SC IV.1.b 99.6% DRE HCL FG954THROX conditions	Quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	No MACT requirements for vent to FG954THROX (Backup control)
	SC VI.1 99.6% DRE HCL removal		
P1027/EU06- HIGH PURITY ANHYDROUS HCL STORAGE & DISTRIBUTION HAPS and TACs Hydrogen chloride	SC IV.1.b 99.6% HCL DRE, FG954THROX conditions	Quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	No MACT requirements for vent to FG954THROX (Backup control)
	SC VI.1 99.6% HCL DRE		
P1027/EU08 PROPYLENE OXIDE STORAGE (operates ventless except during prep for maintenance)	SC VI.1 99.6% HCL DRE	TTU exit gas temperature, scrubber pH & effluent flow	Storage vessel, not vent, Group 1 during maintenance activities
	SC .IV.4 FG954THROX conditions	TTU exit gas temperature, minimum excess oxygen, quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	
P1025/EU91 BUTADIENE STORAGE (operates ventless except during infrequent maintenance)	SC VI.3 99.9% DRE organic compounds	TTU exit gas temperature	P&RI MACT Group 1 during maintenance activities
	SC .IV.3 FG954THROX conditions	TTU exit gas temperature, minimum excess oxygen, quench column No. 1 exit gas temperature, scrubber No.1 pH & effluent flow	

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 for process or process equipment currently owned by Corteva or Clean Harbors. PTIs issued for Corteva the effective date of ROP No. MI-ROP-A4033-2017c for the stationary source are identified in Appendix 6 of the ROP.

PTI Number			
194-08 (EU01)	287-09 (EU02)	84-14 (EU03)	237-06A (EU18*)
98-05 (EU09)	116-08B (EU10)	45-15 (EU11*)	993-92C (EU13*)
241-03 (EU14*)	57-17A (EU15*)	345-06 (FG954THROX)	

* These processes are no longer operating and have been removed from the ROP for SRN P1028

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	PTI Exemption Rule Citation	Rule 212(4) Citation
EU-Rule 282a	Processes or process equipment which are electrically heated or which fire sweet gas fuel or No. 1 or No. 2 fuel oil at a maximum total heat input rate of not more than 10,000,000 BTU per hour and meet the criteria of R 336.1282(2)(a).	Rule 282(2)(a)	Rule 212(4)(c)
EU-Rule 282b	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 specific in R 336.1283(2)(b)	Rule 282(2)(b)	Rule 212(4)(c)
EU-Rule 284b	Storage of butane, propane, or liquefied petroleum gas in a vessel that has a capacity of less than 40,000 gallons.	Rule 284(2)(b)	Rule 212(4)(d)
EU-Rule 284g	Gasoline, diesel fuel, or natural gas storage and handling equipment as follows: gasoline storage and handling equipment at loading facilities handling less than 20,000 gallons	Rule 284(2)(g)	Rule 212(4)(d)

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	PTI Exemption Rule Citation	Rule 212(4) Citation
	per day or at dispensing facilities, or for diesel fuel handling.		
EU-Rule 284i	Storage or transfer operations of volatile organic compounds or noncarcinogenic liquids in a vessel that has a capacity of not more than 40,000 gallons where the contents have a true vapor pressure of not more than 1.5 psia at the actual storage conditions.	Rule 284(2)(i)	Rule 212(4)(d)
EU-Rule 285g	Internal combustion engines that have less than 10,000,000 BTU/hour maximum heat input.	Rule 285(2)(g)	Rule 212(4)(e)
EU-Rule 285vi	The following equipment and any exhaust system or collector exclusively serving the equipment: Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals, graphite, plastics, concrete, rubber, paper board, wood, wood products which meets the subsequent requirements.	Rule 285(2)(l)(vi)	Rule 212(4)(e)

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 Chris Hare, Bay City 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
P1028

RENEWABLE OPERATING PERMIT
JULY 26, 2022 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-P1028-2022

Purpose

A Staff Report dated June 13, 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:	Section 1: Kayla Peacock, Michigan Hub Responsible Care Leader
	Section 2: Mori Sorenson, Vice President Environmental Compliance
AQD Contact:	Kathy Brewer, Senior Environmental Quality Analyst 989-439-2100

Summary of Pertinent Comments

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

Changes to the June 13, 2022 Draft ROP

No changes were made to the draft ROP.

State Registration Number

P1028

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-P1028-2022a

NOVEMBER 3, 2022 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION

Purpose

On September 15, 2022, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-P1028-2022 to Corteva Agriscience, LLC and Clean Harbors Industrial Services pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(2).

General Information

Responsible Official:	Section 1: Kayla Peacock, Michigan Hub Responsible Care Leader
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Numbers:	202200130; 202200195
Date Applications for Minor Modification were Submitted:	June 21, 2022; October 5, 2022

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to Rule 216(2).

Description of Changes to the ROP

Minor Modification Number 202200130 was to incorporate PTI No. 37-20A into Section 1 of the ROP, which is to update emission unit EU1200 to account for additional formaldehyde emissions based on emission testing at the Harbor Beach facility. The PTI was not required to go through Public Comment.

Minor Modification Number 202200195 was to incorporate PTI No. 98-05A into Section 1 of the ROP, which is for emission unit EU09 in the 489 building Liquid Herbicide Formulation production facility to account for ethylene oxide emissions based on emission testing.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

Action Taken by EGLE

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-P1028-2022, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification 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 requirements, and resolution of any objections by any affected states or the USEPA.

State Registration Number
P1028

RENEWABLE OPERATING PERMIT

ROP Number
MI-ROP-P1028-2022b

APRIL 21, 2023 - STAFF REPORT FOR RULE 216(1)(a)(i)-(iv) ADMINISTRATIVE AMENDMENT

Purpose

On December 20, 2022, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-P1028-2022a to Corteva Agriscience, LLC and Clean Harbors Industrial Services pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(1)(a)(i-iv).

General Information

Responsible Official:	Section 1: Kayla Peacock, Michigan Hub Responsible Care Leader
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202300060
Date Application for Administrative Amendment was Submitted:	March 14, 2023

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for an Administrative Amendment pursuant to Rule 216(1)(a)(iii).

Description of Changes to the ROP

Administrative Amendment Number 202300060 was to add Special Condition (SC) V.5 in FG954THROX in Section 1 of the ROP. This condition ensures all emission units venting to FG954THROX are in compliance with the 99.8 percent destruction removal efficiency (DRE) using the temperature in SC III.1 to have Corteva confirm the percent organic DRE. Based on stack testing, FG954THROX can operate at 760 degrees Celsius when all emission units are venting to it and meet the required DRE, except for when receiving vents from EUB5 (SRN P1027) where the temperature will need to be at least 789 degrees Celsius to achieve a required DRE of 99.9 percent. EUB5 only vents to FG954THROX for several weeks each year during the annual shut down of the EUB5 RTO (vent SVB5031) and as needed if the EUB5 RTO malfunctions.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Administrative Amendment to the ROP.

Action Taken by EGLE

The AQD approved an Administrative Amendment to ROP No. MI-ROP-P1028-2022a, as requested by the stationary source. The delegated decision maker for the AQD is the District Supervisor.

State Registration Number
P1028

RENEWABLE OPERATING PERMIT
JUNE 5, 2023 - STAFF REPORT FOR RULE 216(2)
MINOR MODIFICATION

ROP Number
MI-ROP-P1028-2022c

Purpose

On April 21, 2023, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-P1028-2022b to Corteva Agriscience, LLC pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(2).

General Information

Responsible Official:	Section 1: Kayla Peacock, Michigan Hub Responsible Care Leader
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202300084
Date Application for Minor Modification was Submitted:	May 2, 2023

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to Rule 216(2).

Description of Changes to the ROP

Minor Modification Number 202300084 was to incorporate PTI No. 147-20A into the ROP, which was to install a new rail car station at EU03, piping to allow EU03 to use an existing storage tank and existing rail car station that are part of EU09, and allowing pressurized loading, rather than vapor balance loading, of the choline hydroxide storage tank. These changes will allow a 42% increase in production.

No permit changes were made to EU09, as EU09 is permitted as “flexible for toxics” and the changes fall within the parameters of the current EU09 permit conditions.

PTI No. 147-20A was not required to go through the public participation process.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

Action Taken by EGLE

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-P1028-2022b, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification 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 requirements, and resolution of any objections by any affected states or the USEPA.

State Registration Number

P1028

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-P1028-2022d

SEPTEMBER 14, 2023 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION

Purpose

On July 24, 2023, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-P1028-2022c to Corteva Agriscience, LLC and Clean Harbors Industrial Services pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(2).

General Information

Responsible Official:	Section 1: Kayla Peacock, Michigan Hub Responsible Care Leader
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202300130
Date Application for Minor Modification was Submitted:	August 30, 2023

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to Rule 216(2).

Description of Changes to the ROP

Minor Modification Number 202300130 was to incorporate PTI No. 37-20B into the ROP, which was to install additional equipment to expand production capacity of the fermenters and seed tanks to increase the capacity 1.5 times in EU1200, and to add a stack that previously was assumed to exhaust indoors.

The PTI was not required to go through the public participation process.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

Action Taken by EGLE

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-P1028-2022c, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification 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 requirements, and resolution of any objections by any affected states or the USEPA.