

State Registration Number
M4777

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-M4777-2015b

BASF CORPORATION - PLASTICS PLANTS

SRN: M4777

Located at

1690 Biddle Avenue, Wyandotte, Michigan 48192-3792

Permit Number: MI-ROP-M4777-2015b

Staff Report Date: April 20, 2015

Amended Date: September 21, 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) 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

RENEWABLE OPERATING PERMIT

ROP Number

M4777

APRIL 20, 2015 STAFF REPORT

MI-ROP-M4777-2015

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 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 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:	BASF Corporation – Plastics Plants 1609 Biddle Avenue Wyandotte, Michigan 48192-3729
Source Registration Number (SRN):	M4777
North American Industry Classification System (NAICS) Code:	325991
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201400104
Responsible Official:	Greg Pflum, Vice President and General Manager BASF Corporation – Plastics Plants 734-324-6161
AQD Contact:	Todd Zynda, Environmental Engineer 313-456-2761
Date Application Received:	June 23, 2014
Date Application Was Administratively Complete:	June 23, 2014
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	April 20, 2015
Deadline for Public Comment:	May 20, 2015

Source Description

BASF Corporation (BASF) is located in Wyandotte, Michigan in the County of Wayne on the east side of Biddle Avenue, along the Detroit River, between Goddard Road and Ford Road in a primarily industrial setting. A mixture of commercial and residential areas is located immediately to the west across Biddle Avenue.

BASF's Wyandotte operations comprise three separate stationary sources: (1) chemical production plants with a Standard Industrial Classification (SIC) major grouping of 28 and identified as State Registration Number (SRN) B4359; (2) plastics production plants with an SIC major grouping of 30 and identified as SRN M4777; (3) laboratory and research operations with an SIC major grouping of 87 and identified as SRN M4808.

The Plastics Plants stationary source, M4777, the subject of this report, comprises the Engineering Plastics Compounding (EPC) Operations (Section 1) and the Cellasto Plant (Section 2).

The EPC Operations (Section 1) produces plastic pellets from seven extruder lines. Solid raw materials (filler, fiberglass, nylon, pigment) are poured from supersacs into mixing vessels which are then fed into the extruder hoppers. The solids are melted into semi-solids under heat and extruded into thin wires which are cooled to harden, cut into pellets, and packaged. Material handling and hopper charging operations are controlled by dust collectors. Vapors from the extruders are controlled by water scrubbers. EPC is divided into two sub-plants, EPC II and EPC III, each operating with its own extruders, dust collectors, and scrubber.

The Cellasto plant (Section 2) manufactures automobile suspension parts by curing a mixture of polyol and diisocyanate with catalysts/inhibitors. Polyol and diisocyanate are initially reacted under heat into a prepolymer in one of five reactors. The prepolymer is dosed with an initiator into a heated mold and a urethane plastic is produced. The plastics are cured in ovens and shaken ("deburred") to remove imperfections. Storage vessels and reactor vessels are controlled by carbon canisters. Curing oven emissions are controlled by demisters (called scrubbers by the plant, but actually fabric filters). Deburring machines are controlled with knock out boxes and mesh filters.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) in the **2013** submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	None reported
Lead (Pb)	None reported
Nitrogen Oxides (NO _x)	0.79
Particulate Matter (PM)	3.54
Sulfur Dioxide (SO ₂)	0.00
Volatile Organic Compounds (VOCs)	6.86

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases (GHG) in tons per year of CO₂e (carbon dioxide equivalents) is less than 100,000. CO₂e is a calculation of the combined global warming potentials of six GHG (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

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 located in that portion of Wayne County, Michigan which is currently designated by the U.S. Environmental Protection Agency (USEPA) as a non-attainment area with respect to the 1-hour sulfur dioxide standard. Wayne County is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment or unclassified for all other criteria pollutants.

Title V of the Clean Air Act and the Renewable Operating Permit Program

The M4777 stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, either through 40 CFR 70.3(a)(1) and R 336.1211(1)(a)(i) or through 40 CFR 70.3(a)(3) and R336.1211(1)(f).

The BASF Wyandotte manufacturing and research site at 1609 Biddle Avenue is considered a single facility within the BASF corporate structure. The various operations at the BASF Wyandotte site are segregated into three stationary sources for the administration of State and federal air quality regulations due to the three unique Standard Industrial Classification (SIC) code major groupings applicable to the activities at the site. Under the AQD administrative rules at R 336.1119(r), a stationary source is defined, in part, as “all buildings, structures, facilities, or installations which emit or have the potential to emit 1 or more air contaminants, which are located at 1 or more contiguous or adjacent properties, which are under the control of the same person, and which have the same 2-digit [SIC] major group code associated with their primary activity.” Therefore, despite the singular nature of the site for BASF corporate governance, under AQD Rule 119(r) the Wyandotte site is split into three stationary sources assigned SRNs B4359, M4777, and M4808 comprising, respectively, the chemical manufacturing activities (SIC major grouping 28), the plastics manufacturing activities (SIC major grouping 30) and the research and development activities (SIC major grouping 87).

The Clean Air Act Amendments of 1990 introduced a definition for a “major source” of hazardous air pollutants under Section 112 of the Clean Air Act (CAA), as follows, in part: “[t]he term ‘major source’ means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous pollutant or 25 tons per year or more of any combination of hazardous air pollutants.” Section 112 defines an “area source” as “any stationary source of hazardous air pollutants that is not a major source.” A “stationary source” under Section 112 is to have the same meaning as under Section 111(a): “any building, structure, facility, or installation which emits or may emit any air pollutant.” These definitions for major source, area source, and stationary source are incorporated into the resultant National Regulations Standards for Hazardous Air Pollutants for Source Categories promulgated at 40 CFR, Part 63, otherwise known as the Maximum Achievable Control Technology (MACT) Standards. Consequently, no matter the division of pollutant-emitting activities at the BASF Wyandotte site on the basis of SIC major groupings, the group of stationary sources B4359, M4777, and M4808 is a single entity when evaluated for “major source” applicability under Section 112 of the CAA and 40 CFR, Part 63.

Prior to February 7, 2006, the group of stationary sources at BASF Wyandotte emitted or had the potential to emit, considering controls, 10 tons or greater of a single HAP or 25 tons or greater of any combination of HAPs; prior to this date, the group of stationary sources was considered a CAA Section 112 major source. On February 7, 2006, BASF obtained legal, enforceable permit limits (e.g. Permits to Install Nos. 289-05 for B4359, 314-05 for M4808, and 315-05 for M4777) for the group of stationary sources to restrict the potential to emit of any single HAP to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year; on and after this date, each stationary source at BASF Wyandotte is an area source under CAA Section 112. These permit limits have been incorporated into the ROPs for each of the individual stationary sources under the source-wide requirements.

BASF Wyandotte operates polyether polyols manufacturing process units at B4359 that became an existing affected source under 40 CFR Part 63, Subpart PPP, the MACT standard for Polyether Polyols Production on the initial compliance date of June 1, 2002 (40 CFR 63.1422(c)). BASF Wyandotte operates a flexible polyurethane foam process at M4777 that became an existing affected source under 40 CFR Part 63, Subpart III, the MACT standard for Flexible Polyurethane Foam Production on the initial compliance date of October 8, 2001 (40 CFR 63.1291(a)).

A May 16, 1995 memorandum authored by John S. Seitz, then Director, USEPA Office of Air Quality Planning and Standards (OAQPS), and a March 23, 2000 memorandum authored by William T. Harnett, then Acting Director, Information Transfer and Program Integration Division, USEPA OAQPS, establish and explain EPA's "once in, always in" (OIAI) policy. The OIAI policy states "that facilities that are major sources for HAPs on the 'first compliance date' are required to comply permanently with the MACT standard to ensure that maximum achievable reductions in toxic emissions are achieved and maintained." (Seitz, pg. 9) However,

"[a] facility that is subject to a MACT standard is not necessarily a major source for future MACT standards. For example, if after compliance with a MACT standard, a source's potential to emit is less than the 10/25 tons per year applicability level, the EPA will consider the facility an area source for purposes of a subsequent standard." (Seitz, pgs. 9-10)

Thus, a facility may be simultaneously classified as a Section 112 major source and a Section 112 area source, depending on the MACT standard, as explained in the Harnett memorandum regarding a hypothetical source that was a Section 112 major source on the first compliance date of MACT T but then obtains legally enforceable limits on the potential to emit HAPs in order to become an area source for MACT MMMM:

"[i]n this case, the facility would continue to be classified as a major source for the purposes of subpart T and title V, but would not be subject to the major source requirements under the Miscellaneous Metal Parts MACT standard. Rather, area source requirements, if any, under this standard would apply to the facility." (Harnett, pgs. 2-3)

As a result of the OIAI policy, the group of stationary sources B4359, M4777, and M4808 remains a Section 112 major source for MACT standards PPP and III. The stationary sources B4359, M4777, and M4808 are eligible for Section 112 area source status only for those MACT standards with initial compliance dates of February 7, 2006 and after.

Section 501(2) defines a "major source" under Title V of the CAA as "any stationary source (or any group of stationary sources located within a contiguous area and under common control) that is either of the following: (A) A major source as defined in section 112. (B) A major stationary source as defined in section 302 or part D of title I." Under 40 CFR 70.3, a State Title V permitting program must permit any Section 112 major source (40 CFR 70.3(a)(1)) and "[a]ny source, including an area source, subject to a standard or other requirement under section 112 of the Act . . ." (40 CFR 70.3(a)(3)). AQD rules require a Renewable Operating Permit (i.e. a Title V permit) for any "major source under section 112 of the clean air act . . ." (R 336.1210(1), R 336.1211(1)(a)(i)) and for "[a]ny stationary source in a source category designated by the administrator of the United States environmental protection agency under 40 C.F.R. §70.3 . . ." (R 336.1210(1), R 336.1211(1)(f)) Therefore, each of the individual stationary sources within the group of stationary sources at BASF Wyandotte, i.e. the Section 112 major source, must operate in compliance with an ROP.

New Source Review and the Permit to Install Permit Program

No emissions units at the stationary source are currently subject to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of each criteria pollutant was less than 250 tons per year.

NSPS Subpart Kb

40 CFR Part 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels [including Petroleum Liquid Storage Vessels] for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984) does not apply to storage tanks that have a capacity less than 75 cubic meters (m³). The storage tanks at BASF Plastics Plants have a capacity less than 75 cubic meters (m³), with the exception of EUELATK-103 which has a capacity of 25,000 gallons or 94.63 m³. Subpart Kb (§60.110b(b)) also states that “the subpart does not apply to storage vessels...with a capacity greater than equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure less than 15.0 kilopascals (kPa).” Currently, storage tanks located at BASF Plastics Plants store liquids having a true vapor pressure less than 1.5 pounds per square inch absolute (psia) or 10.34 kPa. Therefore the BASF Plastics Plants storage tanks (including EUELATK-103) are not subject to 40 CFR Part 60, Subpart Kb.

NESHAP FF

The National Emission Standard (NESHAP) for Benzene Waste Operations is published at 40 CFR Part 61, Subparts A and FF. The provisions of NESHAP FF apply to chemical manufacturing plants (40 CFR 61.340(a)). The preamble to the March 7, 1990 final rule states at 55 FR 8319:

The final rule is applicable to facilities in the following industry sectors: petroleum refineries, coke by-product recovery plants, chemical plants, and commercial TSDF that manages wastes generated by the other three industries (i.e., petroleum refineries, coke by-product recovery plants, and chemical plants). Examples of affected industries include SIC codes 2911, 3312, 2800's, 4959, and 9511.

BASF's chemical production plants (SRN 4359) have an SIC major grouping of 28 and therefore represent “chemical manufacturing plants” within the meaning of Subpart FF. BASF's plastics production plants (SRN M4777) and laboratory/research operations (SRN M4808) have SIC major groupings of 30 and 87, respectively, and therefore appear to not fall within the meaning of “chemical production plants” as defined in Subpart FF.

In addition, as it relates to laboratory waste generally, even at a chemical production facility, EPA explains within the publication “Benzene NESHAP FAQ Handbook for Subparts BB and FF” of September 1997 (EPA/305-B-97-009) at page 30 that waste disposal typically subject to review and regulation under the Resource Conservation and Recovery Act (RCRA), such as waste drums, etc., is not regulated under 40 CFR Part 61, Subpart FF:

Was 40 CFR Part 61, Subpart FF designed to regulate the waste generated in subject facilities laboratories from counter top applications, of less than 1 gallon at a time? 55 gallon drums?

No. As stated in the memorandum dated March 13, 1991 from Ms. Carolyn J. Pina, Environmental Engineer, Control Technology and Compliance Section, EPA Region 1 to Daniel Couturier, EPA Stationary Source Compliance Division (now the Manufacturing, Energy & Transportation Division), if lab work is performed under a hood, no wastestreams are generated, and if everything is bottled and disposed of through waste transfer operations, Subpart FF does not apply. For 55 gallon drums, unless waste transferred into

drums is transferred from a wastestream (in which case the wastestream itself falls under Subpart FF) the drums are covered under RCRA, not Subpart FF.

[Citation: letter from Carolyn Pina, EPA Region 1, dated March 13, 1991 to Daniel Couturier, EPA Stationary Source Compliance Division]

As a result, unlike the HAP potential to emit permit limits, the special conditions associated with 40 CFR Part 61 Subparts A and FF appear only within the ROP for B4359 and not within the ROPs for M4777 or M4808.

MACT Standards

Equipment listed under FGELAMACTS at the stationary source (M4777) is subject to the National Emission Standard for Hazardous Air Pollutants for Flexible Polyurethane Foam Production promulgated in 40 CFR Part 63, Subparts A and III.

Equipment listed under FGELAMACTS at the stationary source (M4777) is not subject to the National Emission Standard for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources promulgated in 40 CFR Part 63, Subparts A and OOOOOO due to the OIAI policy described above and because the stationary source M4777 remains a "major source" for the flexible polyurethane foam production source category (40 CFR Part 63, Subpart III).

On August 13, 2010, BASF submitted a declaration of non-applicability for the National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources promulgated in 40 CFR Part 63, Subpart A and VVVVVV. BASF Plastic Plants (M4777) does not appear to be subject to Subpart VVVVVV. As required by §63.11494(a), BASF Plastic Plants do not use or produce the products listed in Table 1.

Compliance Assurance Monitoring (CAM)

No emission units are subject to the federal Compliance Assurance Monitoring rule under 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.

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."

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-M4777-2009 are identified in Appendix 6 of the ROP.

PTI Number			
315-05			

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).

During the working draft review of the ROP, BASF requested that 40 CFR Part 63, Subpart OOOOOO be included in the non-applicable requirements in Part E of Section 2. The AQD agrees that the facility is not subject to the area source flexible polyurethane foam production requirements of Subpart OOOOOO as described above in the Regulatory Analysis. However, future installations or modifications may be subject to the flexible polyurethane foam fabrication requirements under 40 CFR Part 63, Subpart OOOOOO.

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
EUELATK-101	6,000 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELATK-102	12,000 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELATK-111	3,000 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELATK-112	3,000 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELATK-210	300 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELATK-310A	375 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELATK-103	25,000 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELAD-202	250 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)
EUELAD-203	75 gallon tank dedicated to storing liquid having a true vapor pressure less 1.5 psia	Rule 212(4)(c)	Rule 284(i)

Processes in Application Identified as Exempt by Rule 281(h)

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4)(a). These processes are subject to process-specific emission limits and standards at R 336.1281(h) and the flexible unit conditions of either FGEPCCOLDCLEANERS (Section 1) or FGELACOLDCLEANERS (Section 2).

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Rule 290 Flexible Group
EUPECCOLDCLEANER	Cold cleaner for the EPC Plant.	FGEPCCOLDCLEANERS
EUELACOLDCLEANER	Cold cleaner for the Cellasto Plant.	FGELACOLDCLEANERS

Processes in Application Identified as Exempt by Rule 290

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4)(g). These processes are subject to process-specific emission limits and standards at R 336.1290 and the flexible unit conditions of either FGEPRULE290 (Section 1) or FGELARULE290 (Section 2).

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Rule 290 Flexible Group
EUPECOVEN	A pyrolysis furnace for cleaning plastic materials from extruder parts. The furnace is equipped with an afterburner.	FGEPRULE290
EUPECFILLERHNDLG	Equipment used to blend various materials with plastic resin pellets prior to being compounded at the extruders. Baghouses, vent filters, and scrubbers are installed as pollution control devices.	FGEPRULE290
EUELAOVEN101	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN102	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN103	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN104	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN105	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN106	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN107	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN108	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELAOVEN109	An oven for curing polyurethane parts controlled by a mist eliminator.	FGELARULE290
EUELADEBURRING	Equipment used to remove burrs and flash from polyurethane parts. Filter socks are installed for particulate control.	FGELARULE290
EUELAREACTOR210, 220, 230, 240, and 250	Production of prepolymer for use in the polyurethane molding operations. Carbon adsorbers are installed	FGELARULE290

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Rule 290 Flexible Group
	for volatile organic compound control. The emission units include pre-polymer reactor and associated equipment (storage and feed tanks, flake hopper, piping pumps, and dosing tanks).	
EUELAMOLDING	Equipment for the reaction injection molding of polyurethane parts.	FGELARULE290

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 the MDEQ, 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 Wilhemina McLemore, Detroit 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.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

M4777

RENEWABLE OPERATING PERMIT

JUNE 5, 2015 STAFF REPORT ADDENDUM

ROP Number

MI-ROP-M4777-2015

Purpose

A Staff Report dated April 20, 2015, 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:	Greg Pflum, Vice President and General Manager BASF Corporation – Plastics Plants 734-324-6161
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 April 20, 2015 Draft ROP

No changes were made to the draft ROP.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

M4777

RENEWABLE OPERATING PERMIT

**NOVEMBER 13, 2017 STAFF REPORT FOR
RULE 217(2) REOPENING**

ROP Number

MI-ROP-M4777-2015a

Purpose

On July 22, 2015, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-M4777-2015 to BASF Corporation – Plastics Plants pursuant to R 336.1214. Once issued, the AQD is required to reopen the ROP if the criteria described in R 336.1217 are met. Only those conditions to be added or changed in the ROP are to be considered during this public comment period. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1217.

General Information

Responsible Official:	Greg Pflum, Vice President and General Manager BASF Corporation – Plastics Plants 734-324-6161
AQD Contact:	Rebecca Loftus, Senior Environmental Quality Analyst 313-456-4720
Date Public Comment Begins:	November 13, 2017
Deadline for Public Comment:	December 13, 2017

Regulatory Analysis

Historically, up until April 30, 2003, the expanded polyolefin (EPO) Operations facilities located at 1609 Biddle Avenue, Wyandotte, Michigan, were owned and operated by BASF Corporation. On April 30, 2003, the facilities were sold to Concepp Technologies Inc. and on August 1, 2009, Polytech Moulding Industries, Inc. (Polytech) assumed ownership of the plants. During this time, Polytech (under SRN: N7238) applied for and received a separate ROP for the EPO Operations facilities; ROP No. MI-ROP-N7238-2011. The ROP renewal application (No. 201500137) for permit No. MI-ROP-N7238-2011 was submitted by Polytech on August 12, 2015.

On February 6, 2017, the Department of Environmental Quality (DEQ), Air Quality Division (AQD) received a letter from BASF Corporation stating that as of January 1, 2017, BASF once again owns Polytech's EPO Operations facilities. With this letter BASF accepted responsibility for the conditions of permits MI-ROP-N7238-2011 and MI-PTI-N7238-2011 and the ROP renewal application. In addition, BASF reported a change to the raw materials used in this process; BASF replaced the polyolefin with thermoplastic urethane. On July 13, 2017, BASF provided the AQD with an exemption applicability determination for the change in raw materials; BASF believes the change in raw materials is exempt from obtaining a permit to install pursuant to Rule 285(2)(c)(iii). The process will henceforth be identified as the expanded thermoplastic urethane (ETPU) Operations.

Since no actions were taken on renewal application No. 201500137, the AQD has determined that ROP No. MI-ROP-M4777-2015 should be reopened in order to incorporate applicable requirements associated with the equipment permitted under MI-ROP-N7238-2011 and MI-PTI-N7238-2011. With this reopening, the conditions of permits MI-ROP-N7238-2011 and MI-PTI-N7238-2011 have been incorporated into the ROP under Section 3, now known as ETPU Operations.

The ROP and PTI will now be designated as ROP No. MI-ROP-M4777-2015a and PTI No. MI-PTI-M4777-2015a to reflect the changes made during this reopening. Application No. 201500137 and ROP No. MI-ROP-N7238 will be voided when the reopening action is complete.

On June 2, 2017, BASF applied for a permit to install (PTI) for modifications to the ETPU Operations. The application requested the following: increasing the material limits for fresh butane, installing new degassing silos, and installing a regenerative thermal oxidizer for control of VOC emissions (for details see the application for PTI No. 88-17). PTI No. 88-17 was issued on September 29, 2017. This ROP reopening does not address the changes to the process permitted under this PTI; it simply changes all EPO references to ETPU. The AQD has not incorporated the PTI during this ROP reopening because BASF has not initiated any construction plans; note, the PTI has an expiration date of December 31, 2018, if BASF does not install the regenerative thermal oxidizer. BASF must provide written notification to the AQD 30 days after the construction, installation, and/or modification of the equipment/process modifications permitted under PTI No. 88-17, and then must submit a Modification Form (M-001 Form) to incorporate the PTI into their ROP.

For this ROP reopening, Section 3 is comprised of two ETPU plants; the operations at the two plants, ETPUI and ETPUII, are nearly identical. Water and the thermoplastic urethane beads are charged to an impregnation vessel, followed by a nitrogen purge and an addition of butane gas. After agitation under heat and pressure, the butane gas is expanded across an orifice into the rundown vessel, thus expanding the thermoplastic urethane beads to a desired density.

Butane and nitrogen in the rundown vessel flash off into an off-gas recovery tank (TK-780 for ETPUI and TK-880 for ETPUII). The aqueous solution is pumped out to a settlement tank. After washing, the beads are dried through a spin dryer, a flash dryer, and then stored in batch silos; this equipment vents to a fabric filter control device (i.e., F-780 for ETPUI and F-880 for ETPUII). After remaining in the batch silos for a sufficient time to allow for the majority of residual butane to off-gas to atmosphere, the beads are transferred to bulk storage silos in the bulk loading facility and thereafter shipped to customers.

The butane from the off-gas recovery tanks passes through a nitrogen condensation system for recovery and reuse in the impregnation vessels; one condensation system serves both ETPUI and ETPUII. Residual butane lost to off-gassing during the remainder of the process is replaced with fresh butane from storage as needed.

As explained in the original staff report (see pages 5 and 6), prior to February 7, 2006, the group of stationary sources at BASF Wyandotte (SRNs: B4359, M4777, and M4808) were subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, was equal to or more than 10 tons per year and the potential to emit of all HAPs combined was equal to or more than 25 tons per year. Through Michigan's permitting process, BASF obtained legal, enforceable permit limits for the group of stationary sources to restrict the potential to emit of any single HAP to less than 10 tons per year and the potential to emit of all HAPs combined to less than 25 tons per year. The permit limits have been incorporated into the ROPs for each of the individual stationary sources under the source-wide requirements. As a result of the EPA's OIAI policy, the group of stationary sources remains a Section 112 major source for MACT standards PPP and III. The group of stationary sources is eligible for Section 112 area source status only for those MACT standards with initial compliance dates of February 7, 2006 and after.

With the addition of the ETPU plants, the stationary source (M4777) is also subject to Title 40 of the CFR, Part 70, because the potential to emit volatile organic compounds (VOCs) exceeds 100 tons per year.

No emissions units within the ETPU plants are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of volatile organic compounds was less than 250 tons per year.

The nitric acid tank, EUEPOACIDTK702, remains on-site but was emptied in May 2017 as it is not needed in the ETPU process. References to this emission unit have been removed from the ROP. A tricalcium phosphate (TCP) slurry tank, Tank 701, also remains on-site and has been emptied; it was only utilized with the EPO process and is not needed in the ETPU process. Note, future modifications of this equipment may be subject to NSR.

The emission limitation for VOCs from FGETPU at the stationary source is exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR, Part 64, because the emission limitation meets the CAM exemption for a continuous compliance determination method.

At 40 CFR 64.1 a “continuous compliance determination method” is defined as “a method, specified by the applicable standard or an applicable permit condition, which: (1) Is used to determine compliance with an emission limitation or standard on a continuous basis, consistent with the averaging period established for the emission limitation or standard; and (2) Provides data either in units of the standard or correlated directly with the compliance limit.”

For FGETPU, the VOC emission limit is 129 tons per 12-month rolling time period as determined at the end of each calendar month (Condition I.1); butane is the VOC emitted from the process, where butane refers to a hydrocarbon mixture of n-butane, isobutane, and propane, with n-butane as the primary component. As mentioned above, a portion of the butane in the impregnation vessel is condensed downstream in the process and returned for reuse. Fugitive butane is released as VOC emissions and replaced in the impregnation vessel by fresh butane from storage. Condition II.1 limits the addition of fresh butane to FGETPU to 129 tons per 12-month rolling time period and monthly/12-month rolling time period records of fresh butane addition are required under Condition VI.3. This butane material balance provides data in the units of the standard (tons per 12-month rolling time period) on a frequency consistent with the averaging period of the standard (at the end of each calendar month). Therefore, the emission limitation meets the CAM exemption for a continuous compliance determination method and FGETPU is exempt from CAM requirements for VOCs.

No particulate matter emission limits at the stationary source are subject to the federal Compliance Assurance Monitoring rule under 40 CFR, Part 64, because all emission units at the stationary source emitting particulate matter 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.

Processes in Section 3 Identified as Exempt by Rule 281(h)

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4)(a). These processes are subject to process-specific emission limits and standards at R 336.1281(h) and the flexible unit conditions of FGETPUCOLDCLEANER.

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Rule 290 Flexible Group
EUETPUCOLDCLEANER	Cold cleaner for the ETPU plants.	FGETPUCOLDCLEANER

Processes in Application for Section 3 Not Identified in ROP

The following table lists processes that were included in the ETPU Plants 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
EUBUTANE	16,000 gallon capacity liquid butane storage tank and the small butane recovery tank within the condensation system	R 336.1212(4)(d)	R 336.1284(2)(b)
EUNITROGENTANKS	Nitrogen storage tanks	R 336.1212(4)(d)	R 336.1284(2)(j)

Description of Changes to the ROP

The changes made to the ROP include the addition of Section 3, the ETPU Operations. As stated above, Section 3 was added to incorporate all applicable requirements associated with the equipment permitted under MI-ROP-N7238-2011 and MI-PTI-N7238-2011.

Action Taken by the Department

The AQD proposes to approve this change to ROP No. MI-ROP-M4777-2015a, which was reopened by the AQD in order to incorporate the conditions of permits MI-ROP-N7238-2011 and MI-PTI-N7238-2011 into the ROP under Section 3 (ETPU Operations). A final decision on the approval of the revised ROP will not be made until the public and any affected states have had an opportunity to comment on the proposed changes to the ROP and the U.S. 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 Wilhemina McLemore, Detroit District Supervisor. The final determination for approval of the revised ROP will be based on a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by the public, any affected states or the USEPA.

State Registration Number

M4777

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-M4777-2015a

**DECEMBER 15, 2017 STAFF REPORT
ADDENDUM FOR RULE 217(2) REOPENING**

Purpose

A Staff Report dated November 13, 2017, was developed in order to set forth the applicable requirements and factual basis for the draft reopening to Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1214(3). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP reopening during the 30-day public and affected state(s) comment period as described in R 336.1214(3) and (4). In addition, this addendum describes any changes to the proposed ROP reopening resulting from these pertinent comments.

General Information

Responsible Official:	Greg Pflum, Vice President and General Manager BASF Corporation – Plastics Plants 734-324-6161
AQD Contact:	Rebecca Loftus, Senior Environmental Quality Analyst 313-456-4720

Summary of Pertinent Comments

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

Changes to the November 13, 2017 Draft ROP Reopening

No changes were made to the draft ROP reopening.

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number

M4777

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-M4777-2015a

**JANUARY 30, 2018 STAFF REPORT
ADDENDUM FOR RULE 217(2) REOPENING**

Purpose

A Staff Report dated November 13, 2017, was developed in order to set forth the applicable requirements and factual basis for a proposed reopening to Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1214(3). The purpose of this Staff Report Addendum is to summarize any significant comments received on the proposed ROP reopening during the U.S. Environmental Protection Agency's (USEPA), 45-day comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the proposed ROP reopening resulting from these pertinent comments.

General Information

Responsible Official:	Greg Pflum, Vice President and General Manager BASF Corporation – Plastics Plants 734-324-6161
AQD Contact:	Rebecca Loftus, Senior Environmental Quality Analyst 313-456-4720

Summary of Pertinent Comments

No pertinent comments were received during the USEPA's 45-day comment period.

Changes to the December 15, 2017 Proposed ROP Reopening

No changes were made to the proposed ROP reopening.

State Registration Number

M4777

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-M4777-2015b

SEPTEMBER 21, 2023 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION

Purpose

On January 30, 2018, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-M4777-2015a to BASF Corporation – Plastics Plants 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:	Joseph C. Dellamorte, Wyandotte Site General Manager 734-324-4125
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202300126
Date Application for Minor Modification was Submitted:	August 21, 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 No. 202300126 was to remove Section 3 from for the ROP, which includes Emission Units and Flexible Groups: EUETPUI, EUETPUII, EUETPURAWMATERIAL, EUETPUBULKSTORAGE, EUETPURULE290, EUETPUCOLDCLEANER, FGETPU, FGETPURULE290, FGETPUCOLDCLEANER, since they ceased operation and have been decommissioned. The Company requested Section 3, that included these emission units and flexible group be removed from the ROP.

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-M4777-2015a, 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.