



State Registration Number  
B4359

Michigan Department Of Environmental Quality  
Air Quality Division

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-B4359-2003b

BASF Corporation, Chemical Plants

SRN: B4359

located at

1609 Biddle Avenue, Wyandotte, Michigan, 48192

Permit Number: MI-ROP-B4359-2003b

Staff Report Date: July 28, 2003

Amended Date: September 14, 2005, January 8, 2007

This Staff Report is published in accordance with Sections 5506 and 5511 of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Specifically, Rule 214(1) requires that the Department of Environmental Quality (Department), 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

**B4359**

Michigan Department Of Environmental Quality  
Air Quality Division

**RENEWABLE OPERATING PERMIT**

ROP Number

**MI-ROP-B4359-2003**

**07-28-2003 STAFF REPORT**

**Purpose**

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a Renewable Operating Permit (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 Article II, Chapter I, Part 55 of PA 451 of 1994. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

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

**General Information**

Stationary Source Mailing Address:	Wyandotte, Michigan 48192
Source Registration Number (SRN):	B4359
Standard Industrial Classification (SIC) Code:	Section 1: 4961, Section 2&3: 2869, Section 4: 2821
Number of Stationary Source Sections:	4
Application Number:	199600432
Responsible Officials:	Section 1: Mr. Paul Moran, Manager EM&F (734) 324-6585, Section 2: Mr. Rick Hanna, Plant Manager (734) 324-6377, Section 3: Mr. Michael Capraro, Manager (734) 324-6363, Section 4: Mr. Terrence Gallagher, Plant Manager (734) 324-6473
AQD Contact:	Scott G. Klipa, Environmental Engineer (517) 241-2215
Date Permit Application Submitted:	12/10/96
Date Application Was Administratively Complete:	12/10/96
Is Application Shield In Effect?	Yes, 12/10/96
Date Public Comment Begins:	7/28/03
Deadline for Public Comment:	8/28/03

## Source Description

BASF Corporation 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. The nearest residential area is located approximately one-quarter mile to the west.

Three manufacturing processes at the facility make up the Chemical Production Plants covered by SRN B4359. These processes are the Polyol Manufacturing Unit, Analytical Chemistry and Chemical Engineering Unit, and Thermoplastic Urethane Synthesis Manufacturing Unit. The Steam Facility is also included in this SRN.

The Polyol Plant has been at the facility since the 1950's. The Polyol Plant currently consists of four reactor train systems. Reactor systems No. 7, No. 8, and No. 9 are used to produce conventional polyols. Graft polyols are produced in reactor train system No. 10. In addition to the reactor train systems, the Polyols plant includes various storage tanks and emissions control equipment. The emission control equipment includes (1) a water scrubber system, (2) a baghouse with cartridge-type fabric filters, (3) and a thermal oxidizer.

The Analytical Chemistry and Chemical Engineering unit provides a variety of research services and manufactures several small quantity products (polyether polyols and polytetrahydrofuran (THF)) using production equipment. The polyether polyols are produced using three reactor systems, bulk storage areas and an acid scrubber system. The Poly-THF process is a solvent extraction process used to produce special molecular weight grades of Poly-THF. Three vessels are used for batch extraction and distillation.

The raw materials for the Thermalplastic Urethane (TPU) Synthesis process are polydiol, butanediol, diphenylmethane diisocyanate (MDI) and lupragen. The raw materials are mixed, heated, and reacted on a belt line. The heated zone of the belt line is vented to a water scrubber for air pollution control. The storage silos are equipped with a baghouse.

The Steam Facility consists of four 49.9 MMBtu/Hr boilers. The boilers provide process and utility steam for the entire facility. The boilers are permitted to burn natural gas or No. 6 fuel oil. Also, boilers #3 and #4 are permitted to burn waste butane that is generated from portions of a manufacturing unit located at the facility.

The following table lists stationary source emission information as reported in Michigan Air Emissions Reporting System (MAERS) for 2001 submittal.

### TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	23.26
Lead (Pb)	0.00015
Nitrogen Oxides (NO <sub>x</sub> )	40.26
Particulate Matter (PM)	3.6
Sulfur Dioxide (SO <sub>2</sub> )	15.45
Volatile Organic Compounds (VOCs)	50.8
<b>Individual Hazardous Air Pollutants (HAPS) **</b>	
Acrylonitrile	0.1
Ethylene Oxide	0.013

Pollutant	Tons per Year
Propylene Oxide	0.047
Styrene	0.17
<b>Total Hazardous Air Pollutants (HAPs)</b>	0.33

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

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

### **Regulatory Analysis**

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are addressed in the non-applicable requirement section of the staff report and section G of the ROP.

The stationary source is located in Wayne County, which is currently designated as attainment/unclassified for all criteria pollutants.

Under Section 112 of the Clean Air Act, a major source is defined as 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 HAPs above the threshold level. For the purpose of applicability to Michigan's Renewable Operating Permit Program, BASF Chemical Production Plants (B4359) is considered contiguous to the Secondary Plastics Production Plants (M4777) and the R&D/Application Centers (M4808), which collectively are a major stationary source of HAPs.

The stationary source is not currently subject to Prevention of Significant Deterioration (PSD) (40 CFR 52.21) regulations because the stationary source has the potential to emit of all criteria pollutants less than 100 tons per year. However, modifications at this stationary source may be subject to PSD regulations.

The stationary source is subject to the New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels promulgated in 40 CFR Part 60 Subparts A and Subpart Kb, Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industrial Wastewater to be promulgated in 40 CFR Part 60 Subparts A and YYY, and Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry promulgated in 40 CFR Part 60 Subparts A and VV.

The stationary source is subject to the Maximum Achievable Control Technology (MACT) Standard for Polyether Polyol Production promulgated in 40 CFR Part 63 Subparts A and PPP.

The stationary source is not subject to R 336.1220 for Major Offset Sources.

Please refer to Sections B, C and D in the enclosed draft permit for detailed regulatory citations for the stationary source. Section A contains regulatory citations for General Conditions.

All terms and conditions that were initially established in a Permit to Install (PTI) are identified with a Footnote designation in the integrated ROP/PTI document. PTIs that are being incorporated through this current permit action into the source-wide PTI are listed in Appendix 6 of the permit.

The following table lists all individual PTIs that were incorporated into previous source-wide PTIs and subsequently voided.

PTI Number	PTI Number	PTI Number	PTI Number
229-01A	C-10681	C-5641	C-5639
269-01A	C-10732	C-5642	C-5640
C-5277	C-10733	C-10734	C-10735
C-10676	C-10677	C-10678	C-10680

### **Equivalent Requirements**

Equivalent requirements are enforceable applicable requirements that are equivalent to the applicable requirements contained in the original New Source Review (NSR) permit, a Consent Order/Judgment, and/or the State Implementation Plan (SIP).

In Section 2, per 40 CFR 63.160(c), compliance with the NESHAP (40 CFR 63 Subpart PPP) requirements constitutes compliance with NSPS 40 CFR Part 60 Subpart Vv.

### **Non-applicable Requirements**

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

### **Processes in Application Not Identified in Draft ROP**

There were no processes listed in the ROP application as exempt devices under Rule 212(3) and (4). Exempt devices are not subject to any process-specific emission limits or standards in any applicable requirement.

### **Draft ROP Terms/Conditions Not Agreed to by Applicant**

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

### **Compliance Status**

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

### **Action Taken by the Department**

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



State Registration Number  
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Michigan Department Of Environmental Quality  
Air Quality Division

**RENEWABLE OPERATING PERMIT**

**10-14-2003 STAFF REPORT ADDENDUM**

ROP Number

**MI-ROP-B4359-2003**

**Purpose**

A Staff Report dated July 28, 2003, 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 Rule 214(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 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: Mr. Paul Moran, Manager EM&F (734) 324-6585, Section 2: Mr. Rick Hanna, Plant Manager (734) 324-6377, Section 3: Mr. Michael Capraro, Manager (734) 324-6363, Section 4: Mr. Terrence Gallagher, Plant Manager (734) 324-6473
AQD Contact:	Scott G. Klipa, Environmental Engineer (517) 241-2215

**Summary of Pertinent Comments and Changes to the July 28, 2003 Draft ROP**

1. On page 1, revise the facility/source name from "BASF Corporation" to "BASF Corporation, Chemical Plants". Draft permits have been developed for separate sources at the Wyandotte Site. For that reason, the facility/source name for each one should be unique. The AQD agrees, change was made
2. The following MACT standards should be specified as "source-wide" requirements: (1) 40 CFR part 61, subpart M - Asbestos NESHAP and (2) 40 CFR part 61, subpart FF - Benzene Waste Operations NESHAP. Change was made
3. Anywhere that 40 CFR part 60, 61, or 63 requirements are described, the permit should also reference the General Provisions (Subpart A) of each part. Change was made
4. On pages 17, 20 through 23, 51 through 55, 74, 96 through 100, 104, 116 through 122, and 125, insert the 3-letter plant code in the name for the Rule 290 emission unit or flexible group as follows: FGSteRule290 in section 1, FGPolRule290 in section 2, FGCheRule290 in section 3, and FGTPURule290 in section 4. This revision is necessary since the current permit describes 4 different emission units that all share the same name. Change was made
5. On page 18, delete all references to "distillate oil" and replace with "no. 6 fuel oil". Change was made
6. On page 20, delete EUPolGraftIndexFilter from FGSteRule290. Change was made
7. On pages 20, 21, 98, 118, and 119, the numbering of items in the Pollutants column does not match with the numbering of items in the Maximum Emission Limit column. Change was made

8. On pages 38, 39, 51, 56, and 66, revise names for emission groups and flexible groups as necessary so that they start with the following characters: EUPol or FGPol. This will make them consistent with BASF's convention for naming emission units and flexible groups. These revisions are especially needed for the following incorrectly named emission groups: EUColdCleaners, EUPoGraftIndexFilter, and EUTkPolTkNSPS. Change was made
9. On page 38 replace the descriptions for EUPolGraftFug and EUPolGraft with the correct emission unit description on page 45. Change was made
10. On page 39, (1) change the emission group EUPolTkExempt into the flexible group FGPolTkExempt and (2) specify that each individual storage tank in FGPolTkExempt is a separate emission group. These changes are necessary because the storage tanks comply with Rule 290 requirements on an individual, not a collective, basis. In accordance with the Division's operational memorandum no. 6, each of the individual storage tanks operates separately from the others and there is no dependency between the storage tanks. In order to effect these revisions, BASF expects to see these changes implemented consistently in the flexible group summary table on page 51 and table D-2.6 on page 69. Change was made
11. On page 39, (1) change the emission group EUPolNSPSKbTanks into the flexible group FGPolNSPSKbTanks and (2) specify that each individual storage tank in FGPolNSPSKbTanks is a separate emission group. These changes are necessary because the storage tanks comply with Rule 290 requirements on an individual, not a collective, basis. In accordance with the Division's operational memorandum no. 6, each of the individual storage tanks operate separately from the others and there is no dependency between the storage tanks. In order to effect these revisions, BASF expects to see these changes implemented consistently in the flexible group summary table on page 51, table D-2.5 on page 66, and table D-2.6 on page 69. Change was made
12. On page 40, revise the last sentence in the emission unit description to completely list all control devices: "... vapor balance for storage tank loading, the water scrubber (T-408), baghouses with cartridge-type fabric filters, caustic scrubbers, and the thermal oxidizer." After this change is made, this same emission unit description should be used in the emission unit summary table on page 38. Change was made
13. On page 41, revise the first sentence in Process Monitoring System and Recordkeeping item 2 to read "... monitor the pressure drop across each fabric filter". Change was made
14. On page 42, delete all thermal oxidizer testing/recordkeeping requirements for EUPolConv since they are already specified for EUPolEmCon. EUPOLEMCON was setup to cover the thermal oxidizer which is the emission control equipment that is common to both the conventional (EUPOLCONV) and graft (EUPOLGRAFT) polyol processes. Therefore, it is appropriate to have the testing/recordkeeping requirements for the thermal oxidizer only in EUPOLEMCON. Change was made
15. On page 43, revise Operational Parameter item 7.b. to read "TK-534 after un-reacted materials have been removed". There was an extra digit in the tank ID, change was made
16. On page 46, delete all thermal oxidizer testing/recordkeeping requirements for EUPolGraft since they are already specified for EUPolEmCon. EUPOLEMCON was setup to cover the thermal oxidizer which is the emission control equipment that is common to both the conventional (EUPOLCONV) and graft (EUPOLGRAFT) polyol processes. Therefore, it is appropriate to have the testing/recordkeeping requirements for the thermal oxidizer only in EUPOLEMCON. Change was made
17. On page 48, revise the emission unit description to read "This emission group contains the TDI (TK-536) storage tank as well as an associated carbon adsorption canister." This revision is necessary because the MDI storage tank was removed from EUPolTkFarm. After this change is made, this same emission unit description should be used in the emission unit summary table on page 39. Change was made
18. On page 49, revise Operational Parameter item 1 to read "Permittee shall replace the carbon adsorption canister controlling the TDI tank ...". Change was made
19. On page 49, revise Operational Parameter item 6 to read "... unless the carbon adsorption canister is installed and operating ...". Change was made



20. On page 58, revise Other Requirements item 2.d. to read " ... 40 CFR 63.2, and it is not subject to the provisions of ...". Change was made
21. On page 59, revise the flexible group description to read "This flexible group contains the emissions control device that is common to both the conventional and graft polyol manufacturing processes: the thermal oxidizer." After this change is made, this same description should be used in the emission unit summary table on page 38. Change was made
22. On page 60, revise the Parameter To Be Tested subsection for EUPolEmCon by (1) combining items 1 and 2 together into a new item 1 reading, "EO and PO emission rates from equipment ..." and (2) combining items 3 and 4 together into a new item 2 reading, "Acn and styrene emission rates from equipment ...". As indicated in the following 2 comments, this change will reduce the repetition of follow-on requirements. Change was made
23. On page 61, revise the Method subsection for EUPolEmCon by (1) deleting items 3 and 4 and (2) adding Method 18 to the remaining items 1 and 2. The latter change is necessary because Method 18 is necessary to speciate VOCs. Change was made
24. On page 61, revise the Frequency And Schedule Of Testing subsection for EUPolEmCon by deleting items 3 and 4. Items 3 and 4 for the Testing/Recordkeeping- Parameters to be Monitored and Method/Analysis sections were combined into items 1 and 2, therefore, items 3 and 4 from the frequency section were identical to items 1 and 2 and therefore deleted. Change was made
25. On page 62, revise the Other Requirements (1) item 1 to read "... for Hazardous Air Pollutant Emissions for Polyether Polyol Production as they apply to FGPolEmCon" and (2) item 3 to read "... and operate the instrument used for measuring the liquid flowrate of the scrubber liquid, ...". Change was made
26. On page 63, delete the Stack/Vent Parameters for FGPolFug since there should be no stack/vent restrictions for fugitive emissions. Change was made
27. On page 64, delete Process Monitoring System and Recordkeeping item 2 and Other Monitoring And Recordkeeping item 3. Requirements from 40 CFR 63 subpart PPP should not be applied to either reactor train no. 10 or EGPoIGraft. As per my 07/08/03 e-mail, the graft production process is not subject to this MACT standard. BASF disagrees with the suggestion in your 07/23/03 e-mail, that these requirements are necessary in order to comply with emission limits. In fact, BASF could achieve compliance by utilizing a variety of alternative monitoring methods, including screening measurements and the use of U.S. EPA emission factors for estimating fugitive emissions of VOCs from equipment leaks. BASF should not be required to comply with MACT standard requirements when they are not applicable, they are excessively burdensome, and there are less-stringent methods available to maintain compliance with emission limits. Company agreed to leave in LDAR requirement and reference R629 with semi-annual reporting for minimum requirements of the LDAR program. Change was not made.
28. On page 65, revise Operational Parameter item 1 to read "For reactor train no. 9, in accordance with 40 CFR 63.160(c), compliance with 40 CFR 63 subpart PPP requirements constitutes compliance with 40 CFR 60, subpart Vv." This comment was provided in my 07/11/03 e-mail. The special condition was left in but the proposed wording was added as a clarifying note.
29. On pages 66 and 68, delete Other Monitoring And Recordkeeping items 1 through 3, Operational Parameter item 2, and Other Requirements items 1 and 2. While some volatile organic liquid storage tanks at the Polyols Plant match up with the specifications in 40 CFR 60.110b, there are none that (1) match up with the specifications in 40 CFR 60.112b and (2) are subject to requirements in 40 CFR 60.115b. Therefore, FGPolINSPSKbTanks should be assigned the same monitoring/recordkeeping requirement that is specified on page 94 for EUChTK-43: "Permitee, for each storage vessel, as specified in 40 CFR 60.110b(b) shall keep records and furnish reports as required by 40 CFR 60.116b(a) and (b)." Change was made
30. On page 67, delete Other Monitoring And Recordkeeping item 7. There are no volatile organic liquid storage tanks at the Polyols Plant that store a waste mixture and are subject to the requirements of 40 CFR 60.116b(f). Change was made

31. On page 70, delete Monitoring/Recordkeeping item 2, Reporting item 4, and Operational Parameter items 1 through 3. Instead, all of these requirements from 40 CFR 63 subpart PPP and 40 CFR 60 subpart YYY should be assigned to EUPolConv in Table C-2.1. As per the Division's operational memorandum no. 6, a significant reason for establishing EUPolConv as an emission unit is because it alone is subject to these two federal rules. So, all references to requirements from 40 CFR 63 subpart PPP and 40 CFR 60 subpart YYY should be assigned in EUPolConv only. Applicant agreed that these MACT and NSPS standards are applicable to equipment outside of EUPOLCONV and EUPOLFUGCONV, and therefore appropriate in FGPOLFACILITY since the Non-Applicable Requirements Table E-2 identifies that 40 CFR 63 Subpart PPP is not applicable to EUPOLGRAFT and EUPOLFUGGRAFT.
32. On page 71, delete all information related to EUPolCAR. Emission unit was deleted, no Non-Applicable Requirements apply. Change was made
33. On page 73 revise Appendix 2-4 item 1 to read "... kept on file for a period of at least five years and ...". Change was made
34. On page 74, revise the second row in the Appendix 2-6 table as follows: (1) PTI nos. C-10733 and C-10735 and (2) "Tank TK-536 for storage of toluene diisocyanate controlled by a carbon adsorption canister." This revision is necessary because the PTI for the MDI storage tank has been voided. Change was made
35. On page 86, revise the emission unit summary table as follows: (1) change EUChMacromer to EUChMacromers and (2) revise the first sentence of the EUChMacromers description to read "... macromers used internally in the production ...". Change was made
36. On page 88, revise the Pollution Control Equipment subsection to read "Surface Temperature Condensers". Change was made
37. On page 90, revise the Other Requirements subsection to read "... storage tanks in EUChPolyTHF." Change was made
38. On page 93, revise the Other Requirements subsection to read "... storage tanks in EUChPolyol." Change was made
39. On page 103, revise Appendix 3-4 so that it refers to EUChPolyTHF, not EU-Pol-THF. Change was made
40. On page 104, revise Appendix 3-4 so that it refers to EUChPolyol, not EU-Polyol. Change was made
41. On page 105, revise the Appendix 3-6 table so that it identifies emission units EUChPolyTHF and EUChPolyol. Change was made
42. On pages 116 and 117, change emission unit EUTPU to EUTPUSynthesis. The emission unit description does not need to be changed. Change was made
43. On page 116, insert emission unit EUTPUExtrusion into the emission unit summary table with the following description: "This emission group consists of all equipment at the TPU Synthesis Plant that is exempt from permitting pursuant to Rule 286(a) and includes all plastics extrusion equipment as well as associated plastic resin handling and storage equipment." This change is necessary because this equipment must be separated from the EUTPUSynthesis Rule 290-emission group. Change was made
44. There are four new comments: (a) On page 68, delete carbon adsorbers from the pollution control equipment in Table D-2.5. None of the tanks in EUPolINSPSKbTanks are controlled with a carbon adsorber. (b) On page 42, delete caustic scrubbers from the emission unit description and pollution control equipment for EUPolConv in Table C-2.1. In permit-to-install no. 229-01 there are no requirements for caustic scrubbers and as per comment no. 6 in my 07/08/03 message, stack tests have demonstrated that the caustic scrubbers are not necessary in order to comply with any emission limits. (c) On pages 88 and 98, add the emission unit EUChIndexFilter as another Rule 290-exempt emission unit at ACCE. The emission unit description for EUChIndexFilter is provided as follows: "This emission unit consists of an index filter that is used to filter various materials that have low vapor pressures. This emission unit is exempt from Rule 201 requirements pursuant to Rule 290." This emission unit was installed

around 09/17/01. (d) On page 27, revise Appendix 1-6 so that it refers to FGSteFacility, not FGSteam. Change was made

45. There are two general comments: (a) run a spell check to take care of various misspellings and (b) on page 69, consider inserting a page break before Table D-2.6 Change was made

46. Delete all dashes from emission unit names (these incorrectly named emission units can be located by searching for "EU-"). (b) On pages 3, 68, and 69, change FGNSPSKbTanks to FGPolNSPSKbTanks. (c) On page 69, revise Table D-2.6 so it refers to FGPolColdCleaners, not FGColdCleaners. Change was made

47. Revise the emission unit description for EUPolConv in the emission unit summary table on page 40 so that it matches the corrected emission unit description from Table C-2.1. Change was made

48. On page 50, replace the emission unit description for EUPolTkFarm in Table C-2.3 with the correct emission unit description from the emission unit summary table on page 41. Change was made

49. On page 51, revise operation parameter no. 7 to read "... are controlled by the carbon adsorption canister, installed ..." Change was made

50. On page 40, replace the emission unit description for EUPolEmCon in the emission unit summary table with the correct flexible group description from Table D-2.3 on page 61. Change was made

51. On page 64, revise the Other Requirements section for FGPolEmCon as follows: (a) item 1 should read "... for Hazardous Air Pollutant Emissions for Polyether Polyol Production as they apply to FGPolEmCon" and (b) item 3 should read "... and operate the instrument used for measuring the liquid flowrate of the scrubber liquid according to the manufacturer's recommendations.". As per my 07/08/03 e-mail, there are no requirements to monitor differential pressure, liquid pH or liquid temperature at the water scrubber. Change was made

52. On page 66, revise item 2 of the Process Monitoring System/Recordkeeping to read "... in a manner acceptable to the AQD District Supervisor, with semi-annual (not quarterly) reporting." Change was made

53. On page 119, revise the emission unit description so that it refers to EUTPUSynthesis, not EUTPU. Change was made

54. Change the 06/01/98 installation date for EUTPUExtrusion to 05/15/98. Change was made

55. Revise the description for FGPolTKExempt in the flexible group summary table on page 53 and in Table D-2.1 on page 54 by deleting the word "all" so that it reads "This flexible group includes volatile organic material storage tank ..." Change was made

56. On page 53, delete the fifth line in the flexible group summary table. The nonexistent emission unit EUPolTkNSPS is referred to on this line. Change was made

57. On page 53, replace the flexible group ID FGPolTkNSPS with FGPolNSPSKbTanks. Change was made

58. On page 68, revise the flexible group description for FGPolNSPSKbTanks in Table D-2.5 by deleting the last 7 words to read "... subject to the applicable requirements of 40 CFR 60, Subpart Kb." Change was made

59. On page 68, revise the list of emission units for FGPolNSPSKbTanks in Table D-2.5 by replacing "EUPolTkNSPS" with "EUDVPOLTK-518, EUDVPOLTK-527, EUDVPOLTK-526, EUDVPOLTK-401c, EUDVPOLTK-521, EUDVPOLTK524, DVPOLTK-301, and any VOL storage tanks installed in the future." This is the same listing from the flexible group summary table on page 53. Change was made

60. The applicant submitted comments associated with the staff report. Minor changes were incorporated into the Source Description section including (1) replaced Polyols Plant control equipment (2) from glycol reactor system to baghouse with cartridge type fabric filters, (2) in paragraph 5, replaced "extruded in a thin sheet that is cooled and dried on a conveyor" to "reacted on a belt line.", (3) other minor spelling and sentence order changes were made.



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B4359

Michigan Department Of Environmental Quality  
Air Quality Division

**RENEWABLE OPERATING PERMIT**

ROP Number

MI-ROP-B4359-2003

**12-01-03 STAFF REPORT ADDENDUM**

**Purpose**

A Staff Report dated July 28, 2003, 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 Rule 214(1). A Staff Report Addendum was added on October 14, 2003, to summarize the comments received and the changes made during the public comment period. The purpose of this Staff Report Addendum is to summarize any significant comments received on the proposed ROP during the 45-day EPA comment period as described in Rule 214(6). In addition, this addendum describes any changes to the proposed ROP resulting from these pertinent comments.

**General Information**

Responsible Official:	Section 1: Mr. Paul Moran, Manager EM&F (734) 324-6585, Section 2: Mr. Rick Hanna, Plant Manager (734) 324-6377, Section 3: Mr. Michael Capraro, Manager (734) 324-6363, Section 4: Mr. Terrence Gallagher, Plant Manager (734) 324-6473
AQD Contact:	Scott G. Klipa, Environmental Engineer (517) 241-2215

**Summary of Pertinent Comments and Changes to the 10-14-03 Proposed ROP**

EPA Region 5 provided a few questions and comments regarding the proposed ROP and resulted in one minor change to the proposed ROP. The Requirement Table No. for EUTPU EXTRUSION was changed from D-4.1 to NA in Section 4. NA is the appropriate reference because the emission unit is exempt from permitting under Rule 286, not Rule 290.



State Registration Number  
**B4359**

Michigan Department of Environmental Quality  
Air Quality Division

**RENEWABLE OPERATING PERMIT**

ROP N-umber

**MI-ROP-B4359-2003a**

**July 20, 2005 STAFF REPORT FOR RULE 216(2)  
MINOR MODIFICATION**

**Purpose**

On December 1, 2003, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B4359-2003 to **BASF Corporation** pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(2).

**General Information**

Responsible Official:	K. Edward Nuernberg, General Manager (734)-324-6000
AQD Contact:	Andrew Drury, Senior Environmental Engineer (517) 335-3107
Application Number:	200500118 and 200500150
Date Application For Minor Modification Was Submitted:	April 18, 2005 and June 30, 2005

**Regulatory Analysis**

The AQD has determined that the change requested by the stationary source meets the qualifications for a minor modification pursuant to R 336.1216(2).

**Description of Changes to the ROP**

BASF requested, on April 18, 2005, three Rule 216(1)(a)(i)-(iv) administrative amendments to the ROP. The following items were clearly mistakes when the ROP was written:

1. Correct the expiration date to 12/01/2008.
2. Add tanks EUDVPOLTK122, EUDVPOLTK505, and EUPOLTK518 to FGPolTkExempt. Documentation shows that these should have been included in the ROP.
3. In FGPolINSPSKbTanks, correct TK-401c to be TK-413c. Documentation shows this to be an error.
4. FGPolRULE290 should only include EUPOLRULE290, FGPolTKEXEMPT, and EUPOLGRAFTINDEXFILTER. FGPolRULE290 should not be listed in the group and EUPOLTKEXEMPT should be FGPolTKEXEMPT because it is a flexible group, not an emission unit.

Also on April 18, 2005, BASF requested four Rule 216(2) minor modifications to the ROP. Three were determined to require a Permit to Install and the minor modification requests were rescinded in a letter dated June 10, 2005. The fourth minor modification was made, as follows:

1. Table D-2.4 was changed to allow the results of the Leak Detection and Repair (LDAR) monitoring of reactor train number 10 to be submitted within 60 days following the end of the reporting period, rather

than 25 days, so that the LDAR reports for EUPOLGRAFT and EUPOLCONV are due at the same time. This change is acceptable since the 60 day reporting timeframe will not make the LDAR program less effective and will be consistent with the timeframe specified in the Polyether Polyol MACT standard (40 CFR 63 Subpart PPP).

On June 30, 2005, BASF requested to incorporate Permit to Install No. 157-05 into the ROP as a Rule 216(2) minor modification. Permit to Install 157-05 authorized the following changes to the ROP:

1. Reduce the frequency of the EUPOLCONV and FGPOLEMCON baghouse and thermal oxidizer inspections from semi-annually to annually.
2. Reduce the EUTPUSYNTHESIS water scrubber liquid flowrate monitoring from daily to monthly. An interlock is required that allows the synthesis belt line to operate only when the blower and water pump are operating and the liquid flowrate is above a minimum set value, as determined by the continuous liquid flowrate monitor.
3. Reduce the frequency of the EUTPUSYNTHESIS water scrubber inspections from semi-annually to annually.

### **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 the DEQ**

The AQD proposes to approve a minor modification to ROP No. MI-ROP-B4359-2003, 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 U.S. Environmental Protection Agency (USEPA) have been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is Ms. Lynn Fiedler, Permit Section 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.



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ROP Number

**MI-ROP-B4359-2003a**

**September 14, 2005, STAFF REPORT  
ADDENDUM**

**Purpose**

A Staff Report dated 2003, 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 45-day EPA comment period as described in R 336.1214(6). In addition, this addendum describes any changes to the proposed ROP resulting from these pertinent comments.

**General Information**

Responsible Official:	K. Edward Nuernberg, General Manager (734)-324-6000
AQD Contact:	Andrew Drury, Senior Environmental Engineer (517) 335-3107

**Summary of Pertinent Comments**

No pertinent comments were received during the 45-day EPA comment period.



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Michigan Department of Environmental Quality  
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**RENEWABLE OPERATING PERMIT**

ROP Number

**MI-ROP-B4359-2003b**

**November 16, 2006 REPORT FOR RULE 216(2)  
 MINOR MODIFICATION**

**Purpose**

On December 1, 2003, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-B4359-2003 to BASF Corporation pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(2).

**General Information**

Responsible Official:	K. Edward Nuernberg, General Manager 734-324-6000
AQD Contact:	Jeremy Hoeh, Environmental Engineer 517-241-2194
Application Number:	200600140
Date Application For Minor Modification Was Submitted:	September 28, 2006

**Regulatory Analysis**

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to R 336.1216(2).

The stationary source has requested that the Permit to Install (PTI) Nos. 289-05 and 331-05, issued on February 7, 2006 and January 12, 2006, respectively, be incorporated into their ROP. The AQD has determined that the change requested meets the following criteria for a Minor Modification pursuant to Rule 216(3). The PTI includes terms and conditions that comply with the permit content requirements contained in Rule 213 and the procedure used to issue the PTI was substantially equivalent to the requirements of Rule 214 regarding public participation and review by affected states.

BASF Corporation-Wyandotte site has three (3) sources at the 1609 Biddle Avenue location. They are: R&D and Application Centers (SRN M4808), Plastic Plants (SRN: M4777) and Chemical Plants (SRN: B4359). The group of stationary sources has obtained legal, enforceable permits to install 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. Therefore, the group of stationary sources will be considered an area source for the purpose of future applicable MACT standards. However, because the source was considered a major source of HAPs at the time of the initial compliance date, the stationary source B4359 is still subject to the requirements of the Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industrial Wastewater to be promulgated in 40 CFR Part 60 Subparts A and YYY, Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry promulgated in 40 CFR Part 60 Subparts A and VV, and to the Maximum Achievable Control Technology (MACT) Standard for Polyether Polyol Production promulgated in 40 CFR Part 63 Subparts A and PPP.

**Description of Changes to the ROP**



The hazardous air pollutant (HAP) emission limits of less than 10 ton per year for individual HAPs and less than 25 tons per year for total HAPs were incorporated into the Source-Wide Table in all sections of the ROP. Associated monthly and 12-month rolling calculations and recordkeeping were also added to the Source-Wide tables.

The new Stack/Vent Identification (SVPoIMagSil7) was added to the EUPOLCONV Table along with associated height and exhaust dimensions. The annual magnesium silicate material usage throughput limit was also incorporated into the EUPOLCONV Table, along with associated monthly and 12-month rolling recordkeeping.

### **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 the DEQ**

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-B4359-2003a, 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 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 the Permit Section 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

Michigan Department of Environmental Quality  
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## RENEWABLE OPERATING PERMIT

ROP Number

### January 8, 2007 STAFF REPORT ADDENDUM FOR RULE 216(2) MINOR MODIFICATION

#### Purpose

A Staff Report dated \_\_\_\_\_, was developed in order to set forth the applicable requirements and factual basis for the proposed Minor Modification to the Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1216(2)(c). The purpose of this Staff Report Addendum is to summarize any significant comments received on the proposed ROP modification during the U.S. Environmental Protection Agency's (USEPA) 45-day comment period as described in R 336.1216(2)(c). In addition, this addendum describes any changes to the proposed ROP Minor Modification resulting from these pertinent comments.

#### General Information

Responsible Official:	_____, General Manager 734-324-6000
AQD Contact:	_____, Environmental Engineer 517-241-2194

#### Summary of Pertinent Comments

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

#### Changes to the Proposed ROP Minor Modification

No changes were made to the proposed ROP Minor Modification.