



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

SEP 25 2009

REPLY TO THE ATTENTION OF:

**AE-17J**

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

Charles E. Anderson, EHS Team Member  
BASF, The Chemical Company  
1609 Biddle Avenue  
Wyandotte, Michigan 48192

Re: Finding of Violation  
BASF, The Chemical Co.  
Wyandotte, Michigan

Dear Mr. Anderson:

The U.S. Environmental Protection Agency is issuing the enclosed Finding of Violation (FOV) to BASF, The Chemical Company ("BASF" or "you"). We find that you have violated Section 112 of the Clean Air Act, 42 U.S.C. § 7412, at your Wyandotte, Michigan facility.

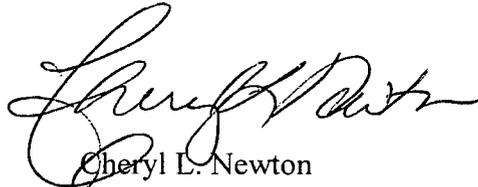
We have several enforcement options under Section 113(a)(3) of the Clean Air Act, 42 U.S.C. § 7413(a)(3). These options include issuing an administrative compliance order, issuing an administrative penalty order, and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the FOV. The conference will give you the opportunity to present information on the specific findings of violation, the efforts you have taken to comply, and the steps you will take to prevent future violations.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference. You should make the request within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

The EPA contact in this matter is Constantinos Loukeris. You may contact him at (312) 353-6198 to request a conference.

Sincerely,

A handwritten signature in black ink, appearing to read "Cheryl L. Newton". The signature is fluid and cursive, with the first name being the most prominent.

Cheryl L. Newton  
Director  
Air and Radiation Division

Enclosure

cc: Jeff Korminski, MDEQ

**United States Environmental Protection Agency Region 5**

**IN THE MATTER OF:** )  
 )  
 BASF, The Chemical Company ) **FINDING OF VIOLATION**  
 Wyandotte, Michigan )  
 ) **EPA-5-09-MI-12**  
 Proceedings Pursuant to )  
 the Clean Air Act, )  
 42 U.S.C. 7401 et seq. )  
 )

**FINDING OF VIOLATION**

The U.S. Environmental Protection Agency finds BASF, The Chemical Company (BASF or you) in violation of Section 112 of the Clean Air Act (the Act), 42 U.S.C. § 7412, as set forth below, at the Wyandotte, Michigan facility. Specifically, the facility has operated in violation of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Manufacture of Amino/Phenolic Resins at 40 C.F.R. Part 63, Subpart OOO; the NESHAP for Polyether Polyols Production at 40 C.F.R. Part 63, Subpart PPP; the NESHAP for Equipment Leaks – Control Level 2 Standards at 40 C.F.R. Part 63, Subpart UU; the NESHAP for the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater at 40 C.F.R. Part 63, Subpart G; and the NESHAP for Equipment Leaks at 40 C.F.R. Part 63, Subpart H as follows:

**Explanation of Violations**

The following regulatory background, factual background, and violations are relevant to this FOV:

**Regulatory Background**

1. On January 20, 2000, EPA promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Manufacture of Amino/Phenolic Resins at 40 C.F.R. Part 63, Subpart OOO (65 Fed. Reg. 3290).
2. On June 29, 1999, EPA promulgated the NESHAP for Equipment Leaks – Control Level 2 Standards at 40 C.F.R. Part 63, Subpart UU (64 Fed. Reg. 34899).
3. On June 1, 1999, EPA promulgated the NESHAP for Polyether Polyols Production at 40 C.F.R. Part 63, Subpart PPP (64 Fed. Reg. 29439).

4. On April 22, 1994, EPA promulgated the NESHAP for the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater at 40 C.F.R Part 63, Subpart G (59 Fed. Reg. 19468).
5. On April 22, 1994, EPA promulgated the NESHAP for Equipment Leaks at 40 C.F.R. Part 63, Subpart H (59 Fed. Reg. 19568).
6. EPA is authorized under Section 113(a)(3) of the Act, 42 U.S.C. § 7413(a)(3), to enforce Section 112 of the Act, 42 U.S.C. § 7412, and its implementing regulations under 40 C.F.R. Part 63.

#### Factual Background

7. BASF owns and operates a chemical plant at its Wyandotte, Michigan facility.
8. At the Wyandotte facility, BASF manufactures amino/phenolic resins and polyether polyols.
9. On March 17-20, 2008, EPA Region 5 conducted an inspection at the Wyandotte facility. The scope of the inspection included the evaluation of BASF's compliance with the NESHAPs for Amino/Phenolic Resins and Polyether Polyols Production and Equipment Leaks. EPA Region 5 staff performed Leak Detection and Repair (LDAR) comparative monitoring during the inspection.
10. On March 2, 2009, EPA Region 5 issued a Section 114 Information Request. The scope of the information request was to request information regarding LDAR, wastewater, and emissions data.
11. On April 3, 2009, BASF submitted a response to the March 2, 2009, Information Request.
12. On April 17, 2009, BASF submitted a supplemental response to the March 2, 2009, Information Request.
13. The Wyandotte facility has an amino/phenolic process unit which is a "new affected source" under the NESHAP for Amino/Phenolic Resins, as defined under 40 C.F.R. § 63.1400(d).
14. The Wyandotte facility has a polyether polyol process unit which is an "existing affected source" under the NESHAP for Polyether Polyols, as defined under 40 C.F.R. § 63.1420(a)(2).

## Explanation of Violations

### Polyether Polyols Process Unit

#### Failure to Meet Wastewater Requirements

15. The NESHAP for Polyether Polyols Production, at 40 C.F.R. § 63.1433(a), states that the owner or operator of each affected source shall comply with the wastewater requirements of the NESHAP for Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater (HON) specified at 40 C.F.R. Part 63, Subpart G at §§ 63.132 through 63.147 for each process wastewater stream originating at an affected source.
16. Under 40 C.F.R. § 63.1422(c), existing affected sources subject to Subpart PPP must comply with the requirements of Subpart PPP, including 40 C.F.R. § 63.1433(a), by no later than June 1, 2002.
17. The NESHAP for Polyether Polyols Production, at 40 C.F.R. § 63.1423, defines “process wastewater” as “wastewater which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples are product tank drawdown or feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; equipment washes between batches in a batch process; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.”
18. Under 40 C.F.R. § 63.1439(e)(5), existing affected sources must submit a Notification of Compliance Status (NCS) report which includes, among other things, identification of the Group status of all process wastewater streams subject to the HON as required under 40 C.F.R. § 63.146.

#### Failure to Identify and Report all Process Wastewater Streams Applicable to the HON

19. The HON, at 40 C.F.R. § 63.132(a), requires the owner or operator to determine whether each process wastewater stream at a subject process unit is subject to “Group 1” or “Group 2” requirements under the HON.
20. The HON, at 40 C.F.R. § 63.132(a)(2), states that for wastewater streams that are Group 1 for Table 9 compounds, the owner or operator must comply with applicable HAP control requirements of paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

21. Group 2 wastewater streams for table 9 compounds must comply with the applicable recordkeeping and reporting requirements specified in 40 C.F.R. §§ 63.146 and 63.147 of the HON.
22. BASF submitted to EPA a NCS report dated October 29, 2002, which identified 11 process wastewater stream Points of Determination (PODs) for its Polyether Polyols Process Unit, as follows:
  - a. Tank, TK 155
  - b. Water Scrubber
  - c. # 7 Reactor Cleaning
  - d. #9 Reactor Cleaning
  - e. Dirty Water Lift Station
  - f. Hotwell
  - g. Clean Water Lift Station
  - h. # 8 Reactor Cleaning
  - i. Outfall 0001
  - j. #2 Lift Station
  - k. TDA Scrubber

BASF indicated to EPA that it made a determination under 40 C.F.R. § 63.132(a)(1) that all 11 of these PODs are “Group 2” wastewater streams under the HON.

23. During the March 2008 inspection, BASF reported to the EPA inspector that it had identified eight process wastewater stream PODs for its Polyether Polyols Process Unit, which it identified as follows:
  - a. Tank, TK 155;
  - b. Water Scrubber
  - c. #7 Reactor Cleaning
  - d. #9 Reactor Cleaning
  - e. Dirty Water Lift Station
  - f. Hotwell
  - g. #8 Reactor Cleaning
  - h. Clean Water Lift Station

BASF indicated to EPA that it made a determination under 40 C.F.R. § 63.132(a)(1) that all eight of these PODs are “Group 2” wastewater streams under the HON.

24. In a Finding of Violation, dated September 22, 2008, EPA found that BASF failed to identify all process wastewater streams for the Polyether Polyols Process Unit, specifically failing to identify the #7, #8, and #9 vacuum systems as PODs (D-151B, D-150B, and S-405D).

25. In the March 2, 2009, Section 114 Information Request, EPA requested BASF to identify all PODs for process wastewater streams for the Polyether Polyols Process Unit.
26. Based on BASF's response, dated April 3, 2009, BASF has 11 PODs for the Polyether Polyols Process Unit in addition to the 11 PODs had identified in its October 29, 2002, NCS report to EPA:
- a. D-151B: #7 vacuum system separator
  - b. D-408: #9 initiator K.O. pot
  - c. D-405D: #9 reactor K.O. pot
  - d. S-150: Oxide K.O drum
  - e. D-150A: #8 jet decanter drain tank
  - f. D-530: 8Init Decantor
  - g. D-150B: # 8 vacuum system separator
  - h. S-530DB: #9 initiator vacuum system separator
  - i. S-405DB: #9 reactor vacuum system separator
  - j. TK 150: # 7 and #8 jets condensate
  - k. TK 151: #9 jet condensate collection tank

BASF's determination of the Group status of the TK 150 and TK 151 PODs did not occur until on or after August 19, 2008, and determination for remainder of the PODs did not occur until on or after October 20, 2008. BASF indicated in its April 3, 2009, response that it had determined that all of these PODs were Group 2 with the exception of D-151B, which the Information Request response identified the group designation as "pending," and S-150, which was designated in the Information Request response as "Exempt 40CFR63.144(f)." There is no paragraph (f) in 40 C.F.R. § 63.144.

27. In addition to the three PODs identified in the September 22, 2008, FOV, BASF has failed to timely determine and report to U.S. EPA the Group status of the following PODs for the Polyether Polyols Process Unit: S-150; D-408; D-150A; D-530; S-530DB; S-405DB; TK 150; and TK 151.
28. These failures constitute violations of the NESHAP for Polyether Polyols at 40 C.F.R. §§ 63.1433(a) and 63.1439(e)(5), and the HON at 40 C.F.R. § 63.132(a).

#### Failure to Control a Group 1 Wastewater Stream

29. The HON, at 40 C.F.R. § 63.132(c), "provides instructions for determining whether a wastewater stream is Group 1 or Group 2 for Table 9 compounds. Total annual average concentration shall be determined according to the procedures specified in § 63.144(b).... Annual average flow rate shall be determined according to the procedures specified in § 63.144(c)...."

30. The HON, at 40 C.F.R. § 63.132(c)(1), states that “[a] wastewater stream is a Group 1 wastewater stream for Table 9 compounds if:
- i. The total annual average concentration of Table 9 compounds is greater than or equal to 10,000 parts per million [ppm] by weight at any flow rate; or
  - ii. The total annual average concentration of Table 9 compounds is greater than or equal to 1,000 [ppm] by weight and the annual average flow rate is greater than or equal to 10 liters per minute.”
31. The HON, at 40 C.F.R. § 63.144(b), states that “[a]n owner or operator who elects to comply with the requirements of [§ 63.144(a)(1)] shall determine the annual average concentration for ... Table 9 compounds according to [§ 63.144(b)(1)] for existing sources.... The annual average concentration shall be a flow weighted average representative of actual or anticipated operation of the chemical manufacturing process unit generating the wastewater over a designated 12 month period. For flexible operation units, the owner or operator shall consider the anticipated production over the designated 12 month period and include all wastewater streams generated by the process equipment during this period. The owner/operator is not required to determine the concentration of ... Table 9 compounds that are not reasonably expected to be in the process.”
32. The HON, at 40 C.F.R. § 63.144(b)(1), states that an owner or operator of an existing source who elects to comply with the requirements of [§ 63.144(a)(1)] shall determine the flow weighted total annual average concentration for Table 9 compounds.... Flow weighted total annual average concentration for Table 9 compounds means the total mass of Table 9 compounds occurring in the wastewater stream during the designated 12-month period divided by the total mass of the wastewater stream during the same designated 12-month period....”
33. The HON, at 40 C.F.R. § 63.144(b)(5), states that “[w]here an owner or operator elects to comply with [§ 63.144(a)(1)] by measuring the concentration for the relevant... Table 9 compounds, the owner or operator shall comply with the requirements of this paragraph. For each wastewater stream, measurements shall be made either at the point of determination, or downstream of the point of determination with adjustment for concentration changes made according to [§ 63.144(b)(6)] A minimum of three samples from each wastewater stream shall be taken....”
34. In BASF’s April 3, 2009, response to EPA’s March 2, 2009 Section 114 Information Request, BASF identified that the S-150 POD (Oxide K.O. Drum) has an average HAP concentration of > 10,000 ppm. This information indicates the S-150 POD is a Group 1 wastewater stream under the HON.
35. In a submittal dated April 17, 2009, that supplemented BASF’s April 3, 2009, response to EPA’s March 2, 2009, Section 114 Information Request, BASF provided an updated

spreadsheet for the group determination for wastewaters in the Polyether Polyols Process Unit. BASF identified the D-151B POD (#7 vacuum system separator) as Group 2 and the S-150 POD as "Exempt 40CFR63.132(f)." There is no exemption from applicability to Group determination or requirements under 40 C.F.R. § 63.132(f).

36. Based on information provided by BASF, the S-150 POD is a Group 1 wastewater stream under the HON.
37. In the April 17, 2009, supplemental response to EPA's March 2, 2009 Section 114 Information Request, BASF provided information concerning sampling and analysis results of Table 9 compounds for the D-151 POD. The reported sampling results are summarized in the table below:

Dates	Propylene Oxide (ppm)	Ethylene Oxide (ppm)
October 20, 2008	59,000	< 2
October 21, 2008	> 13,000	< 2
October 22, 2008	85	< 2
November 20, 2008	38	2.9
April 1, 2009	110	7.1
April 2, 2009	22	7.2
April 2, 2009	25	4.9
April 3, 2009	11	7.2
April 3, 2009	< 4	13

38. The sampling results provided by BASF that were obtained October 20, 2008, through October 22, 2008 indicate a total annual average concentration of > 24,030 ppm of total Table 9 HAP for the D-151 POD. These results, showing a total average concentration that is over 10,000 ppm, indicate that the D-151 POD is a Group 1 wastewater stream under the HON.
39. When the results for November 20, 2008, are averaged with the three October 2008 sampling results, the total annual average concentration of total Table 9 HAP indicated is greater than > 18,032 ppm.
40. In a January 6, 2009, Section 114 Information Request EPA requested BASF to provide information about BASF's operation of the Polyether Polyol Process Unit in 2008 and its plans for operating the process unit in 2009. In a January 16, 2009 response to the Information Request, BASF indicated to EPA that on November 26-27 and December 22-31, 2008, the process unit was idled because there was no customer demand for its product. BASF further indicated that the process unit would be shut down in 2009, and that BASF expected the process unit to have additional idling periods before the shut-down due to, among other things, economic conditions and customer demand. BASF's information regarding reduced utilization and eventual shut-down of the Polyether Polyols Process Unit during 2009 indicates that the April 2009 sampling results for the

D-151B POD are not representative of the process unit's operating conditions prior to 2009.

41. Based on information provided by BASF, the D-151B POD is a Group 1 wastewater stream under the HON.
42. BASF has failed to implement or comply with any Group 1 wastewater control requirements for either the S-150 or D-151B PODs.
43. BASF's failure to implement or comply with Group 1 wastewater control requirements for either the S-150 or D-151B PODs violates the NESHAP for Polyether Polyols Production at § 40 C.F.R. § 63.1433(a) and the HON at 40 C.F.R. §§ 63.132(a)(1) and 63.144(b)(5).

#### Failure to Meet NESHAP Requirements for Weekly Visual Pump Inspections

44. The NESHAP for Polyether Polyols, at 40 C.F.R. § 63.1434(a), states that the owner or operator of each affected source shall comply with the HON equipment leak requirements in 40 C.F.R. Part 63, Subpart H for all equipment in organic HAP service.
45. Subpart H, at 40 C.F.R. § 63.163(b)(3), states that "[e]ach pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected."
46. In Attachment III of the April 3, 2009, response to EPA's Information Request, BASF provided weekly visual inspection sheets for the pumps in the Polyether Polyols Process Unit. The inspection sheets are for the period of January 4, 2008, through February 2, 2009, and include a total of 11 pumps that are subject to visual inspection under 40 C.F.R. § 63.163(b)(3).
47. BASF failed to visually check all 11 pumps subject to visual inspection once a week for leakage of liquid for the following weeks (using a Sunday through Saturday as a calendar week):
  - a. Week of January 13, 2008;
  - b. Week of January 27, 2008;
  - c. Week of February 17, 2008
  - d. Week of February 24, 2008;
  - e. Week of March 9, 2008;
  - f. Week of March 16, 2008;
  - g. Week of April 6, 2008;
  - h. Week of April 13, 2008;
  - i. Week of April 27, 2008;
  - j. Week of May 3, 2008;

- k. Week of May 24, 2008;
- l. Week of May 31, 2008;
- m. Week of June 7, 2008;
- n. Week of June 28, 2008;
- o. Week of July 6, 2008;
- p. Week of July 13, 2008;
- q. Week of July 20, 2008;
- r. Week of July 27, 2008;
- s. Week of August 10, 2008;
- t. Week of August 24, 2008;
- u. Week of September 7, 2008;
- v. Week of September 21, 2008;
- w. Week of October 5, 2008;
- x. Week of October 26, 2008;
- y. Week of November 16, 2008;
- z. Week of November 30, 2008;
- aa. Week of December, 14, 2008;
- bb. Week of December 21, 2008;
- cc. Week of December 28, 2008;
- dd. Week of January 4, 2009;
- ee. Week of January 11, 2009;
- ff. Week of January 18, 2009; and
- gg. Week of January 25, 2009.

48. By failing to conduct weekly inspections of all subject pumps, BASF has violated the NESHAP for Polyether Polyols at 40 C.F.R. § 63.1434(a) and the HON at 40 C.F.R. § 63.163(b)(3).

#### Failure to Meet NESHAP Requirements for Weekly Visual Agitator Inspections

49. Subpart H, at 40 C.F.R. § 63.173(b)(1), states that “[e]ach agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the agitator.”
50. The NESHAP for Equipment Leaks, at 40 C.F.R. § 63.173(b)(2), states that “[i]f there are indications of liquids dripping from the agitator, a leak is detected.”
51. In BASF’s April 3 and 17, 2009 response, BASF provided copies of operator logs for the #7, # 8, and #9 reactor systems for the Polyether Polyols Agitator weekly visual inspections. The operator logs cover the period from January 2005 through March 2009.
52. For the #7 reactor system, the operator logs indicate the level in the sight glass for the “No. 7 Rx. Oil seal.” For the # 8 reactor system, the operator logs indicate the level in the sight glass for the “No. 8 Rx seal oil” and the “No. 8 Init. seal oil.” For the #9 reactor

system, the operator logs indicate the level in the sight glass for the “No. 9 Init. Agitator Seal.” These records do not indicate that the visual inspection had included observations for indications of liquids dripping from the agitator.

53. By not visually inspecting the agitator for indications of liquids dripping from the agitator, BASF failed to properly conduct each weekly visual inspection on agitators.
54. These failures constitutes violations of the NESHAP for Polyether Polyols at 40 C.F.R. § 63.1434(a), and the HON at 40 C.F.R. §§ 63.173(b)(1) and 63.173(b)(2).

#### Amino Resins Process Unit

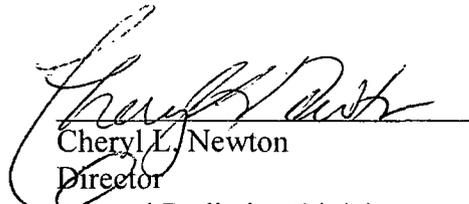
##### Failure to Conduct Periodic Monitoring on Pumps

55. The NESHAP for the Manufacture of Amino/Phenolic Resins, at 40 C.F.R. § 63.1410, states that “[t]he owner or operator of each affected source shall comply with the requirements of 40 CFR part 63, subpart UU (national emission standards for equipment leaks (control level 2)) for all equipment, as defined under § 63.1402, that contains or contacts 5 weight-percent HAP or greater and operates 300 hours per year or more.”
56. The NESHAP for Equipment Leaks – Control Level 2 Standards, at 40 C.F.R. § 63.1026(b)(1), states that “[t]he pumps shall be monitored monthly to detect leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).”
57. The NESHAP for Equipment Leaks – Control Level 2 Standards, at 40 C.F.R. § 63.1023(b)(1), provides that the monitoring shall comply with Method 21 of 40 C.F.R. Part 60, Appendix A.
58. In Attachment VIII of BASF’s April 3, 2009, response, BASF indicated that 12 pumps in the Amino Resins Process Unit were not monitored in January and March 2006. BASF stated that the Amino Resins process unit was shut down for 17 days in January 2006 and 15 days in March 2006.
59. By not performing monthly monitoring in the days that the pumps operated in January and March 2006, BASF failed to perform monitoring under Method 21 of 40 C.F.R. Part 60, Appendix A for the 12 pumps in each of those two months.
60. These failures constitute violation of the NESHAP for the Manufacture of Amino/Phenolic Resins at 40 C.F.R. § 63.1410, and Subpart UU at 40 C.F.R. §§ 63.1026(b)(1), and 63.1023(b)(1).

## Impact of Violations

61. Violation of the above MACT standards increases public exposure to HAP emissions, including, but not limited to, methanol, ethylene oxide, and propylene oxide. Organic HAPs are major precursors in the formation of atmospheric level ozone, a photochemical oxidant associated with a number of detrimental health and environmental effects. In the presence of sunlight, and influenced by a variety of meteorological conditions, HAPs react with oxygen in the air to produce ozone.
  
62. Ozone is one of six listed criteria pollutants targeted for control under the Clean Air Act by the establishment of a National Ambient Air Quality Standard. Its human health impact is on respiratory function, even among healthy individuals. Accompanying symptoms from exposure may include sore throat, tightness or pain on breathing, coughing and headache. Aside from its human health impact, ozone can prove harmful to crops and vegetation and can cause materials such as rubber to prematurely degrade.

Date: 9/23/09

  
Cheryl L. Newton  
Director  
Air and Radiation Division

CERTIFICATE OF MAILING

I, Tracy Jamison, certify that I sent a Finding of Violation, No. EPA-5-08-IN-18, by Certified Mail, Return Receipt Requested, to:

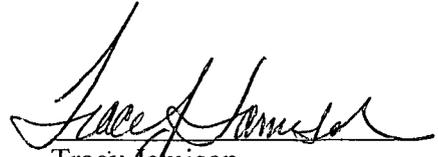
Charles E. Anderson, EHS Team Member  
BASF, The Chemical Company  
1609 Biddle Avenue  
Wyandotte, Michigan 48192

I also certify that I sent copies of the Finding of Violation by first class mail to:

Wilhemina McLemore  
Assistant District Supervisor  
Department of Environmental Quality, Air Quality Division  
Cadillac Place, Suite 2-300  
3058 West Grand Blvd.  
Detroit, MI 48202

Thomas Hess, Unit Supervisor  
Michigan Air Quality Division  
Michigan Department of Environmental Quality  
P.O Box 30260  
Lansing, Michigan 48909

on the 25 day of Sept, 2008.

  
Tracy Jamison  
Office Automation Assistant  
AECAS, (MI/WI)

CERTIFIED MAIL RECEIPT NUMBER: 7001 0320 0006 0293 1275