



Joseph E. Kernan  
Governor

Lori F. Kaplan  
Commissioner

June 22, 2004

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Indianapolis, Indiana 46206-6015  
(317) 232-8603  
(800) 451-6027  
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TO: Interested Parties / Applicant

RE: BP Products North America, Inc / 089-19041-00453

FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER-AM.dot 9/16/03

June 22, 2004

Natalie R. Grimmer  
BP Products North America, Inc.  
P.O. Box 710  
Whiting, IN 46394-0710

Re: Exempt Construction and Operation Status  
089-19041-00453

Dear Ms. Grimmer:

BP Products North America, Inc. submitted a Part 70 operation permit application for a petroleum refinery located at 2815 Indianapolis Blvd., Whiting, IN 46394-2197 on September 30, 1996. An application to modify the source was received on April 29, 2004. The application was made to add the following emission control devices to the refinery:

(a) on the #4 Ultraformer Unit:

One (1) caustic scrubbing system, controlling the regeneration vent, which removes inorganic HAP emissions. The scrubbing system includes:

- (1) one (1) caustic scrubber exhausting to a new stack identified as 224-07,
- (2) an associated carbon adsorption system to treat waste scrubber liquor prior to disposal, and
- (3) caustic feed unloading, storage, and transfer equipment.

(b) on the Fluidized Catalytic Cracking Unit #500 (FCU 500):

One (1) ammonia injection system, placed downstream of the catalyst regenerator and upstream of the Waste Heat Recovery Unit, which enhances particulate removal by an existing electrostatic precipitator. The ammonia injection system includes aqueous ammonia injection and handling equipment. Aqueous ammonia is transferred from the FCU 600 SCR system's storage tanks.

Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the changes are classified as exempt from air pollution permit requirements. The following conditions shall be applicable:

1. Pursuant to 326 IAC 6-1-10.1, PM<sub>10</sub> emissions from FCU 500 shall not exceed 1.22 pounds per thousand pounds of coke burned and 73.2 pounds per hour.

2. Pursuant to Operation Permit 45-08-93-0561, issued on January 12, 1990 and amended on October 28, 1992, April 14, 1993 and October 29, 1993:
  - (a) Particulate matter (PM) emissions from FCU 500 shall not exceed 191.8 pounds per hour.
  - (b) Sulfur dioxide (SO<sub>2</sub>) emissions from FCU 500 shall not exceed 1500 pounds per hour.
3. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in condition #4, opacity shall meet the following:
  - (a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
4. Pursuant to 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations) and to Operation Permit 45-08-93-0561, issued on January 12, 1990 and amended on October 28, 1992, April 14, 1993 and October 29, 1993:
  - (a) The requirements of condition #3 do not apply to FCU 500 during periods of soot blowing. Three (3) nonconsecutive 15-minute periods are allowed per day for soot blowing. During soot blowing, visible emissions shall not exceed 60% opacity.
  - (b) The requirements of condition #3 do not apply to FCU 500 during periods of startup. Startup periods shall not exceed a period of 168 hours per calendar year.
  - (c) The requirements of condition #3 do not apply to FCU 500 during periods of shutdown. Shutdown periods shall not exceed a period of 48 hours per calendar year.
5. Pursuant to 326 IAC 20-50 (Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units) and 40 CFR 63.1563(b) (National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units), the #4 Ultraformer Unit and the FCU 500 shall comply with applicable NESHAP Subpart UUU requirements on and after April 11, 2005, notwithstanding any extension of time that may be granted for the FCU 500 pursuant to 40 CFR 63.1563(c).

This approval will be incorporated into the pending Part 70 permit application, 089-6741-00453.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Allen R. Davidson at (800) 451-6027, press 0 and ask for extension 3-5693, or dial (317) 233-5693.

Sincerely,

Original Signed by Paul Dubenetzky

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

Attachments  
ARD

cc: File - Lake County  
U.S. EPA, Region V  
Lake County Health Department  
IDEM - Northwest Regional Office  
Air Compliance Section Inspector - Ramesh Tejuja  
Compliance Data Section  
Administrative and Development  
Technical Support and Modeling - Michele Boner

# Indiana Department of Environmental Management Office of Air Quality

## Technical Support Document (TSD) for an Exemption

### Source Background and Description

<b>Source Name:</b>	<b>BP Products North America, Inc.</b> (f/k/a Amoco Oil Company - Whiting Refinery)
<b>Source Location:</b>	<b>2815 Indianapolis Blvd, Whiting, IN 46394-2197</b>
<b>County:</b>	<b>Lake</b>
<b>SIC Code:</b>	<b>2911</b>
<b>Application No.:</b>	<b>089-19041-00453</b>
<b>Permit Reviewer:</b>	<b>Allen R. Davidson</b>

On April 29, 2004, the Office of Air Quality (OAQ) received an application from BP Products North America, Inc. relating to the addition of the following emission control devices to the petroleum refinery located at 2815 Indianapolis Blvd., Whiting, IN 46394-2197:

(a) on the #4 Ultraformer Unit:

One (1) caustic scrubbing system, controlling the regeneration vent, which removes inorganic HAP emissions. The scrubbing system includes:

- (1) one (1) caustic scrubber exhausting to a new stack identified as 224-07,
- (2) an associated carbon adsorption system to treat waste scrubber liquor prior to disposal, and
- (3) caustic feed unloading, storage, and transfer equipment

(b) on the Fluidized Catalytic Cracking Unit #500 (FCU 500):

One (1) ammonia injection system, placed downstream of the catalyst regenerator and upstream of the Waste Heat Recovery Unit, which enhances particulate removal by an existing electrostatic precipitator. The ammonia injection system includes aqueous ammonia injection and handling equipment. Aqueous ammonia is transferred from the FCU 600 SCR system's storage tanks.

### History

Amoco Oil Company - Whiting Refinery submitted a Part 70 permit application for a petroleum refinery on September 30, 1996. This application shall be incorporated in the submitted Part 70 application.

The pending Part 70 application has since received the following revisions:

- (a) Exemption 089-8275-00003, which involved replacing storage tank #3531, was issued on April 30, 1997.
- (b) Exemption 089-9003-00003, which approved one (1) natural gas-fired hot oil heater rated at 12 million Btu per hour and identified as AHE-1200, was issued on November 19, 1997.
- (c) Minor Source Modification 089-11960-00003, which involved replacing storage tank #3705, was issued on June 6, 2000.
- (d) Minor Source Modification 089-11984-00003, which acknowledged removal of the Lubes Unit for an emission reduction credit, was issued on July 20, 2000.

- (e) Minor Source Modification 089-14239-00003, which involved a steam sharing plan with Whiting Clean Energy, was issued on May 11, 2001.
- (f) Significant Source Modification 089-13846-00003, which involved an additional tail gas unit at its Sulfur Recovery Unit, was issued on June 27, 2001.
- (g) Exemption 089-14450-00003, which involved changes to the operation of the #12 Pipe Still and an additional tower for the VRU 300 Merox Treating Section, was issued on July 18, 2001.
- (h) Significant Source Modification 089-14210-00453, which involved the addition of two (2) soil remediation units at the south tank field, was issued on September 13, 2001. This modification is also an Emission Offset Permit pursuant to 326 IAC 2-3.
- (i) Significant Source Modification 089-14630-00003, which involved changes at the Catalytic Feed Hydrotreating Unit (CFHU) to increase the rated capacity to 100,000 barrels per day, was issued on November 30, 2001. This modification also made the requirements of Exemption 089-14450-00003 federally enforceable.
- (j) Administrative Amendment 089-15525-00003, which amended Significant Source Modification 089-13846-00003 to include a modular degassing unit to eliminate sulfur pit emissions and to change permit language to more closely follow the New Source Performance Standards Subpart J, was issued on April 15, 2002.
- (k) Significant Permit Modification 089-15202-00003, which eliminates fuel oil usage at all heaters and boilers on or before June 1, 2003, subjects fuel gas usage to the New Source Performance Standards (NSPS) Subpart J, and subjects the two Fluidized Catalytic Cracking Units FCU 500 and FCU 600 to carbon monoxide limits, was issued on April 24, 2002. It modified Significant Source Modification 089-14630-00003.
- (l) Significant Source Modification 089-15500-00003, which adds selective catalytic reduction (SCR) emission control to Fluidized Catalytic Cracking Unit #600 (FCU 600), was issued on October 18, 2002. It further modified Significant Source Modification 089-14630-00003.
- (m) Minor Source Modification 089-16586-00003, which allowed installation of nitrogen oxide (NOX) emission controls onto the five (5) boilers at the #3 Stanolind Power Station, was issued on January 30, 2003. It further modified Significant Source Modification 089-14630-00003.
- (n) Minor Permit Modification 089-16840-00003, which incorporates the requirements of Construction Permit Modification 089-9931-00003 into Significant Source Modification 089-14630-00003, was issued on May 14, 2003. (Construction Permit Modification 089-9931-00003, issued on February 19, 1999, allowed an increase in fuel firing capacity for the Distillate Desulfurization Unit (DDU) Process Heater WB-302.)
- (o) Exemption 089-16960-00453, which approves the addition of a wet electrostatic precipitator (WESP) and a carbon bed absorber for the Fluidized Bed Incinerator, was issued on May 27, 2003.
- (p) Minor Permit Modification 089-17230-00453, which increases the capacity of the Distillate Desulfurization Unit (DDU), was issued on September 10, 2003.
- (q) Significant Source Modification 089-15052-00453, which converts the Catalytic Refining Unit (CRU) from a distillate hydrotreater to a naphtha hydrotreater, was issued on November 17, 2003.

- (r) Significant Permit Modification 089-18588-00453 is pending. It further modifies Significant Source Modification 089-14630-00003 by changing permit language incorporating the requirements of EPA Consent Decree 2:96 CV 095 RL.

This application is the nineteenth revision to the Part 70 permit application.

### Enforcement Issues

OAQ is aware of a consent decree between BP Exploration & Oil Company, Amoco Oil Company, and Atlantic Richfield Company, and the U.S. EPA and nine states including Indiana. However, the proposed changes are not related to the consent decree.

### Stack Summary

The following stack will be added to the plant:

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
224-07	4UF Regeneration Scrubber	120	1.0	4,385	110

### Recommendation

The staff recommends to the Commissioner that the application be approved as an exemption. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 29, 2004.

### Emission Calculations

There are no emissions calculations associated with this application. Emissions are expected to decrease as a result of this application. However, the amount of the decrease has not been quantified by OAQ at this time.

### Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	4,900
PM-10	4,900
SO <sub>2</sub>	15,000
VOC	5,500
CO	361,800
NO <sub>x</sub>	10,200

HAP's	Potential To Emit (tons/year)
Single	>10
TOTAL	>25

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of criteria pollutants is equal to or greater than 100 tons per year. The potential to emit a single hazardous air pollutant (HAP) is equal to or greater than ten (10) tons per year and the potential to emit a combination of HAP is greater than or equal to twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

This existing source is a major source for Prevention of Significant Deterioration, 326 IAC 2-2. It is in one of the 28 source categories and attainment pollutants have the potential to emit at a rate of 100 tons per year or more.

This existing source is a major source for Emission Offset, 326 IAC 2-3. Nonattainment pollutants have the potential to emit at a rate of 100 tons per year or more.

The potential to emit (as defined in 326 IAC 2-7-1(29)) will not increase as a result of this application. Therefore, the application does not require review under 326 IAC 2-7-10.5(d)(10) and can be classified as exempt under 326 IAC 2-1.1-3.

This application is not a major modification for Emission Offset, 326 IAC 2-3, or Prevention of Significant Deterioration (PSD), 326 IAC 2-2 because the increase in potential to emit every attainment pollutant is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, 326 IAC 2-3, the PSD and Emission Offset requirements do not apply.

### County Attainment Status

The source is located in Lake County:

Pollutant	Status
PM-10	attainment
SO <sub>2</sub>	nonattainment (primary)
NO <sub>2</sub>	attainment
1-hour Ozone	nonattainment (severe)
8-hour Ozone	nonattainment (moderate)
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone.

- (a) On January 26, 1996, in 40 CFR 52.777(i), U.S. EPA granted a waiver of the requirements of Section 182(f) of the CAA for Lake and Porter Counties, including the lower NO<sub>x</sub> threshold for nonattainment new source review. Therefore, VOC emissions alone are considered when evaluating the rule applicability relating to the 1-hour ozone standards. Lake County has been designated as nonattainment in Indiana for the 1-hour ozone standard. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability for the source section.
- (b) VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for nonattainment new source review.

Lake County has also been classified as nonattainment for sulfur dioxide (SO<sub>2</sub>). Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Lake County has been classified as attainment or unclassifiable for all other pollutants. Therefore, emissions of all other pollutants were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

### **Federal Rule Applicability**

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this revision.

On and after April 11, 2005, the #4 Ultraformer Unit and the FCU 500 will be subject to 326 IAC 20-50 (Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units) and 40 CFR 63.1563(b) (National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units). The #4 Ultraformer Unit and the FCU 500 shall comply with applicable NESHAP Subpart UUU requirements on and after April 11, 2005, notwithstanding any extension of time that may be granted for the FCU 500 pursuant to 40 CFR 63.1563(c).

### **State Rule Applicability - Entire Source**

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source was existing as of July 27, 1997, this revision is not classified as a reconstruction under 40 CFR 63.41, and the revision does not by itself have potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

Since this source is required to have an operating permit under 326 IAC 2-7, this source is subject to 326 IAC 2-6 (Emission Reporting). The source also has potential to emit greater than the thresholds in 326 IAC 2-6-3(a)(1). Therefore, an emission statement covering the previous calendar year must be submitted by July 1 annually. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

- (a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

### **State Rule Applicability - FCU 500**

326 IAC 6-1-10.1 (Lake County PM<sub>10</sub> Emission Requirements)

Pursuant to 326 IAC 6-1-10.1, PM<sub>10</sub> emissions from FCU 500 shall not exceed 1.22 pounds per thousand pounds of coke burned and 73.2 pounds per hour.

This revision will reduce PM<sub>10</sub> emissions from this facility. However, OAQ has not quantified the emission reduction at this time.

#### 326 IAC 7-4-1.1 (Lake County Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-4-1.1(c), sulfur dioxide emissions from FCU 500 shall not exceed 50 pounds per ton of coke burned.

This revision will have no effect on sulfur dioxide emissions from this facility.

#### 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations)

For this facility, the requirements of this rule take precedence over 326 IAC 5-1-2:

- (a) The requirements of 326 IAC 5-1-2(2) do not apply during periods of soot blowing. Three (3) nonconsecutive 15-minute periods are allowed per day for soot blowing. During soot blowing, visible emissions shall not exceed 60% opacity.
- (b) The requirements of 326 IAC 5-1-2(2) do not apply during periods of startup. Startup periods shall not exceed a period of 168 hours per calendar year.
- (c) The requirements of 26 IAC 5-1-2(2) do not apply during periods of shutdown. Shutdown periods shall not exceed a period of 48 hours per calendar year.

#### **State Rule Applicability - #4 Ultraformer Unit process heaters**

#### 326 IAC 6-1-10.1 (Lake County PM<sub>10</sub> Emission Requirements)

Pursuant to 326 IAC 6-1-10.1:

- (a) PM<sub>10</sub> emissions from Heaters F-1, F-8A and F-8B shall not exceed 0.004 pounds per million Btu heat input and a total of 1.459 pounds per hour.
- (b) PM<sub>10</sub> emissions from Heater F-2 shall not exceed 0.004 pounds per million Btu heat input and 1.059 pounds per hour.
- (c) PM<sub>10</sub> emissions from Heater F-3 shall not exceed 0.004 pounds per million Btu heat input and 0.896 pounds per hour.
- (d) PM<sub>10</sub> emissions from Heaters F-4, F-5 and F-6 shall not exceed 0.004 pounds per million Btu heat input and a total of 1.060 pounds per hour.
- (e) PM<sub>10</sub> emissions from Heater F-7 shall not exceed 0.004 pounds per million Btu heat input and 0.159 pounds per hour.

This revision will have negligible effect on PM<sub>10</sub> emissions from this facility, since the caustic scrubbing system does not control any fuel combustion emissions.

### 326 IAC 7-4-1.1 (Lake County Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-4-1.1:

- (a) Sulfur dioxide emissions from Heater F-1 shall not exceed 0.034 pounds per million Btu heat input, and sulfur dioxide emissions from Heaters F-8A and F-8B shall not exceed 0.033 pounds per million Btu heat input.
- (b) Sulfur dioxide emissions from Heater F-2 shall not exceed 0.033 pounds per million Btu heat input.
- (c) Sulfur dioxide emissions from Heater F-3 shall not exceed 0.033 pounds per million Btu heat input.
- (d) Sulfur dioxide emissions from Heaters F-4, F-5 and F-6 shall not exceed 0.033 pounds per million Btu heat input.
- (e) Sulfur dioxide emissions from Heater F-7 shall not exceed 0.033 pounds per million Btu heat input.

This revision will have no effect on sulfur dioxide emissions from this facility.

### **Conclusion**

The construction and operation of these facilities shall be subject to the conditions of the attached Exemption No. 089-19041-00453.