

**UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF INDIANA**

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NATURAL RESOURCES DEFENSE COUNCIL, INC.,)	Case No. 2:08-cv-00204
)	
Plaintiff,)	
)	Judge Philip Simon
v.)	
)	
BP PRODUCTS NORTH AMERICA, INC.,)	FIRST AMENDED
)	COMPLAINT
Defendant.)	
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I. INTRODUCTION

1. This action is a Clean Air Act (“CAA”) citizen suit against BP Products North America, Inc. (“BP”) for construction of a \$4 billion expansion of its refinery in Whiting, Indiana (the “Refinery”) to enable it to process additional Canadian Extra Heavy Crude (“CXHO”) without a preconstruction permit as required by Parts C and D of subchapter I of the CAA, 42 U.S.C. §§ 7475 and 7503. Those sections provide that a major modification of a source causing a significant increase in air pollution requires a major source permit containing stringent pollution control measures. However, BP applied for and was issued a minor source permit (the “Permit”) by the Indiana Department of Environmental Management (“IDEM”) in May 2008 for the expansion project (“CXHO Project”) based upon demonstrably incorrect representations concerning the CXHO Project’s air emissions. As a result, the CXHO Project as currently permitted will result in emission of a substantially greater volume of air pollutants than the CAA allows.

2. In addition, upon information and belief, the proposal for the CXHO Project permitted by IDEM was in fact one component of a larger expansion project (the “Combined CXHO Project”) that commenced in 2005 for which BP was required a major source permit but

failed to obtain any permit at all. In November 2007, the United States Environmental Protection Agency (“EPA”) Region 5 issued a notice of violation (“NOV”) finding that BP’s 2005 Turnaround Project (“TAR Project”), involving expansion of a fluidized cracking unit (“FCU”), was unlawfully commenced without a major source permit. On October 1, 2008, EPA Region 5 amended the NOV to state that the TAR Project was actually the initial phase of the Combined CXHO Project. EPA’s amended NOV thus determined that the CXHO Project – for which IDEM issued a minor source permit – was in fact merely a component of the Combined CXHO Project that required a major source permit covering both the CXHO Project and the TAR Project.

3. CAA § 304(a)(3), 42 U.S.C. § 7604(a)(3), allows any person to bring suit against one who “proposes to construct or constructs any new or modified major emitting facility” without a major source permit. This action seeks a declaration that the CXHO Project and/or the Combined CXHO Project requires a major source permit pursuant to Parts C and D of subchapter I of the CAA, imposition of an appropriate penalty, and a preliminary and permanent injunction prohibiting further construction of the CXHO Project and/or the Combined CXHO Project until and unless BP applies for and obtains such a permit from IDEM.

II. JURISDICTION AND VENUE

4. This Court has subject matter jurisdiction over the claims set forth in this complaint pursuant to 42 U.S.C. § 7604(a)(3) and 28 U.S.C. §§ 1331, 1355, 2201, and 2202. The relief requested by the plaintiff is authorized in 28 U.S.C. §§ 2201 and 2202 and 42 U.S.C. §§ 7413 and 7604.

5. Venue is proper in this court pursuant to 28 U.S.C. § 1391(b) because a substantial part of the events or omissions giving rise to the claims herein occurred in the Northern District of Indiana, and because defendant resides there.

6. No prior notice of this action is required under 42 U.S.C. § 7604(b).

III. PARTIES

7. Plaintiff Natural Resources Defense Council, Inc. (“NRDC”), a not-for-profit corporation organized and existing under the laws of the State of New York, is a national environmental organization with more than 588,000 members. More than 7,600 of these members live in the State of Indiana, and more than 380 of those members live in Lake County, Indiana, the county in which the Refinery is located. NRDC is dedicated to the preservation, protection, and defense of the environment, its wildlife and natural resources, and actively supports effective enforcement of the CAA on behalf of its members.

8. Within the meaning of section 302(e) of the Act, 42 U.S.C. § 7602(e), NRDC is a “person” who may commence a civil action under section 304(a)(3) of the Act, 42 U.S.C. § 7604(a)(3). NRDC sues on behalf of itself and its individual members who live in the vicinity of and downwind of the Refinery. NRDC and its members will be adversely affected by the Refinery’s excess emissions of sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, and particulate matter – in violation of the Act – that have deleterious impacts on the air, water, land, flora, and fauna in the areas where they live, work, and recreate.

9. Defendant BP is a Maryland corporation that owns and operates the Refinery, and which was issued the minor source air emissions permit to construct the CXHO Project that is the subject of this action.

IV. STATUTORY BACKGROUND

10. The CAA is designed to protect and enhance the quality of the nation's air so as to promote the public health and welfare and the productive capacity of its population. 42 U.S.C. § 7401(b)(1).

11. Pursuant to section 109 of the Act, 42 U.S.C. § 7409, EPA has established National Ambient Air Quality Standards ("NAAQS") to protect human health and the environment for seven "criteria pollutants," including sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, and ozone. 40 C.F.R. pt. 50.

12. Under section 107(d) of the Act, 42 U.S.C. § 7407(d), each state must designate those areas within its boundaries where the air quality is better or worse than the NAAQS for each criteria pollutant, or where the air quality cannot be classified because of insufficient data. An area that meets the NAAQS for a particular criteria pollutant is an "attainment" area for that pollutant. An area that does not meet the NAAQS for a particular criteria pollutant is a "nonattainment" area for that pollutant. An area that cannot be classified for a particular criteria pollutant is "unclassifiable" for that pollutant.

13. Under section 110(a) of the Act, 42 U.S.C. § 7410(a), states are responsible for implementing many of the regulatory requirements of the Act, including provisions of the Prevention of Significant Deterioration ("PSD") and Nonattainment New Source Review ("NNSR") programs (described in the paragraphs below), through State Implementation Plans ("SIPs"). SIP provisions must satisfy the requirements of the Act before they are approved by EPA. See 42 U.S.C. § 7410(k); see also 40 C.F.R. § 51.166 (PSD); 40 C.F.R. § 51.165 (NNSR).

The Prevention of Significant Deterioration Requirements

14. Part C of subchapter I of the Act, 42 U.S.C. §§ 7470-92 (the “PSD program”), sets forth requirements for the prevention of significant deterioration of air quality in areas designated as attainment areas. These requirements are designed to protect public health and welfare, to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources, and to assure that any decision to permit increased air pollution is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process. 42 U.S.C. § 7470.

15. Section 165(a) of the Act, 42 U.S.C. § 7475(a), prohibits the construction and operation of a “major emitting facility” in an attainment area unless a permit has been issued that complies with the requirements of section 165, including the requirement that the facility install the best available control technology (“BACT”) for each regulated pollutant that is emitted from the facility. See also 40 C.F.R. §§ 52.21 & 51.166.

16. Pursuant to the Act, the Indiana SIP also prohibits the construction and operation of a “major emitting facility” in an attainment area unless a permit has been issued that complies with PSD requirements, including the requirement that the facility install BACT for each regulated pollutant that is emitted from the facility. See 326 IAC 2-2 (Indiana PSD regulations); 68 Fed. Reg. 1998-01 (Jan. 15, 2003) (conditionally approving Indiana PSD regulations as part of its SIP).

17. Section 169(1) of the Act, 42 U.S.C. § 7479(1), defines a petroleum refinery that emits or has the potential to emit one hundred tons per year or more of any air pollutant as a “major emitting facility.”

18. Section 169(2)(C) of the Act, 42 U.S.C. § 7479(2)(C), defines “construction” to include “modification,” and section 111(a)(4) of the Act, 42 U.S.C. § 7411(a)(4), defines “modification” as “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such a source or which results in the emission of any air pollutant not previously emitted.”

19. Regulations promulgated pursuant to the Act, and parallel regulations included in the Indiana SIP, define a “major modification” triggering applicability of PSD permitting requirements as inter alia, an increase in the source’s potential to emit (“PTE”) of 100 tons per year (“tpy”) of carbon monoxide, 40 tpy of sulfur dioxide, 40 tpy of ozone precursors (volatile organic compounds and nitrogen oxides), 15 tpy of coarse particulate matter less than or equal to 10 micrometers in diameter (“PM10”), 10 tpy of hydrogen sulfide (“H₂S”), and “any emission rate” increase of any “regulated NSR pollutant” not expressly listed in the governing regulations in an area not determined to be in non-attainment for that pollutant (collectively, “significance thresholds”). 40 C.F.R. § 52.21(b)(23); 326 IAC 2-2-1(xx) & (yy).

20. “Regulated NSR pollutant” is defined as, inter alia, “any pollutant that otherwise is subject to regulation under the Act.” 40 C.F.R. § 52.21(b)(50); 326 IAC 2-2-1(uu).

21. A major modification resulting in an increase in a source’s PTE for any pollutant greater than the applicable significance threshold will trigger PSD requirements for a major modification, i.e., a “major source permit,” unless either (i) the PTE for that pollutant is limited to below the significance threshold by federally or otherwise practicably enforceable pollution control requirements; or (ii) the increased emissions of that pollutant are offset by contemporaneous decreases in emissions of that pollutant, such that there is no “significant net increase” in emissions – i.e., the difference between projected actual emissions or PTE (“Future

Emissions”) and baseline emissions is below the applicable significance threshold defined in 40 C.F.R. § 52.21(b)(23) and 326 IAC 2-2-1(xx) & (yy) – in a calculation process known as “netting.” See 42 U.S.C. § 7475(a), 40 C.F.R. §§ 52.21, 51.166; 326 IAC 2-2-2.

22. A decrease in emissions is creditable as an offset to increased emissions for purposes of PSD netting only if (i) it is federally enforceable or otherwise enforceable as a practical matter at and after the time that actual construction on the particular change begins; and (ii) it has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change. 40 C.F.R. § 52.21(b)(3)(vi)(b)-(c); 326 IAC 2-2-1(jj)(6)(B)-(C).

Nonattainment New Source Review Requirements

23. Part D of subchapter I of the Act, 42 U.S.C. §§ 7501-15 (the “NNSR program”), sets forth requirements for nonattainment areas that are designed to achieve attainment of the NAAQS. See 42 U.S.C. § 7502.

24. Like the PSD program, the NNSR program requires major emitting facilities to obtain permits before undertaking modifications as defined in section 111(a) of the Act, 42 U.S.C. § 7411(a). See 42 U.S.C. § 7503; see also 42 U.S.C. § 7501(4). The NNSR program further requires such a facility to limit emissions of nonattainment pollutants to the lowest achievable emissions rate (“LAER”), and to obtain emission offsets for nonattainment pollutants. 42 U.S.C. § 7503; 40 C.F.R. §§ 52.24 & 51.165.

25. Pursuant to the Act, the Indiana SIP also prohibits the construction and operation of a “major emitting facility” in a nonattainment area unless a permit has been issued that complies with NNSR requirements, including the requirement that major emitting facilities obtain permits before undertaking modifications, apply LAER to emissions of nonattainment

pollutants, and obtain emission offsets for nonattainment pollutants. See 40 C.F.R. § 52.780; 326 IAC 2-3.

26. Regulations promulgated pursuant to the Act, and parallel regulations included in the Indiana SIP, define a “major modification” triggering applicability of PSD permitting requirements as, inter alia, an increase in the source’s PTE of 100 tons per year (“tpy”) of carbon monoxide, 40 tpy of sulfur dioxide, 40 tpy of ozone precursors (volatile organic compounds and nitrogen oxides), or 15 tpy of PM10. 40 C.F.R. § 51.165(a)(1)(x); 326 IAC 2-3-1(qq) & (rr).

27. A major modification resulting in an increase in a source’s PTE for any pollutant greater than the applicable significance threshold will trigger NNSR requirements for a major modification, i.e., a “major source permit,” unless either (i) the PTE for that pollutant is limited to below the significance threshold by federally or otherwise practicably enforceable physical or operational limitations; or (ii) the increased emissions of that pollutant are offset by contemporaneous decreases in emissions of that pollutant, such that there is no “significant net increase” in emissions – i.e., the difference between Future Emissions and baseline emissions is below the applicable significance threshold defined in 40 C.F.R. § 51.165(a)(1)(x) and 326 IAC 2-3-1(qq) & (rr) – in a calculation process known as “netting.” See 42 U.S.C. § 7503(c); 40 C.F.R. §§ 52.21 & 51.165; 326 IAC 2-2-3.

28. A decrease in emissions is creditable as an offset to increased emissions for purposes of NNSR netting only if (i) it is federally enforceable or otherwise enforceable as a practical matter at and after the time that actual construction on the particular change begins; and (ii) it has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change. 40 C.F.R. § 51.165(a)(1)(vi)(E)(2) & (4); 326 IAC 2-3-1(dd)(6)(B)-(C).

Minor source permits

29. A source that demonstrates via PSD or NNSR netting analysis that its net emissions increase from a major modification will be below the applicable significance threshold for all regulated pollutants may obtain a permit from the state permitting authority (in this case IDEM) that does not meet the requirements of the PSD and NNSR programs, including, inter alia, BACT and LAER pollution control requirements (a “minor source permit”). See 326 IAC 2-7-10.5.

V. GENERAL ALLEGATIONS

Injury from unlawful criteria pollutant emissions

30. As a result of the CAA violations alleged herein, the Refinery will emit massive excess quantities of sulfur dioxide, nitrogen oxides, volatile organic compounds, and particulate matter as a result of the CXHO Project and/or the Combined CXHO Project. All of these pollutants, alone and in combination, will cause severe public health and environmental problems in the vicinity of and downwind of the Refinery.

31. Emissions of sulfur dioxide (“SO₂”) lead to the formation of sulfate aerosols. Illness and mortality from lung disorders, such as asthma and bronchitis, are associated with exposure to sulfate aerosols.

32. Emissions of nitrogen oxides (“NO_x”) contribute to the production of ground-level ozone. Severe health problems in humans, including breathing constrictions and lung damage in healthy persons and dangerous aggravations of severe respiratory diseases such as asthma, emphysema, and chronic bronchitis, are associated with exposure to ozone smog. NO_x emissions are also transformed into nitrogen dioxide (“NO₂”). Severe health problems in humans, including constriction of breathing passages, weakening of the immune system, and

increased susceptibility to pulmonary and other infections, are associated with exposure to NO_2 . NO_x emissions also interact with sunlight and other pollutants to form photochemical smog, which in turn contributes to haze and reduces visibility.

33. Emissions of SO_2 and NO_x lead to the creation of fine nitrate and sulfate particles. Inhalation of these acid particles is associated with respiratory distress, cardiovascular disease, and premature mortality.

34. Emissions of SO_2 and NO_x interact in the atmosphere with water and oxygen to form sulfuric and nitric acids, commonly known as acid rain. Acid rain and other acid deposition can impair the water quality of freshwater bodies, rendering them uninhabitable for aquatic life, both by directly acidifying the water body and by increasing the bioavailability of mercury, lead, and other toxic metals. Acid deposition also contributes to the damage of trees and accelerates the decay of buildings and other outdoor structures.

35. Emission of volatile organic compounds (“VOCs”) are often toxic, and also react with NO_x to produce ground level ozone, the health impacts of which are described in preceding paragraphs.

36. Particulate matter (“PM”) is the term for solid or liquid particles found in the air. PM with a diameter of 10 micrometers or less is referred to as “PM10,” and PM with a diameter of 2.5 micrometers or less is referred to as “PM2.5.” Breathing PM10 or PM2.5 at levels above existing ambient air standards may increase the chances of premature death, cancer, respiratory disease, and lung damage. EPA has found that PM2.5 poses even greater health risks than PM10. The elderly, children, and people with chronic lung disease, influenza, or asthma, tend to be especially sensitive to the effects of PM2.5 and PM10. PM may also exacerbate the effects of acid deposition.

37. Emission of carbon monoxide (“CO”) can cause harmful health effects by reducing oxygen delivery to the body’s organs (like the heart and brain) and tissues. EPA has found that the health threat from lower levels of CO is most serious for those who suffer from heart disease, like angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person’s ability to exercise; repeated exposures may contribute to other cardiovascular effects.

38. As a direct result of BP’s violations of the CAA, individual members of NRDC who live in the vicinity of and farther downwind of the Refinery will be exposed to excess emissions of SO₂, NO_x, PM, CO, VOCs, PM_{2.5}, and PM₁₀ and, as a result, are particularly subject to the adverse health and environmental impacts described in paragraphs 28-35 above. Health, environmental, recreational, aesthetic, and other interests of these individuals are thus impaired by BP’s illegal actions without an order of this Court directing BP to comply with the CAA. Such an order would redress the harm to plaintiff’s members resulting from BP’s violations of the CAA.

39. Members of NRDC who live near the Refinery and in areas where the Refinery’s emissions have their highest impacts on air quality, will suffer heightened exposure and risk of, or actual, injury and economic harm due to illegal emissions from the Refinery. NRDC members who suffer, or whose family members suffer, from lung disease, including asthma, will experience heightened risk of, or actual, health and economic harm from exposure to the illegal emissions. NRDC members who utilize and enjoy forest, fish, wildlife and water resources in the vicinity of the Refinery will experience heightened losses to recreational values due to the effect of the Refinery’s illegal pollution on sensitive ecological systems in those areas.

Attainment status of Lake County, Indiana

40. Lake County, Indiana, the county in which the Refinery is located, is currently in nonattainment for PM_{2.5} and ozone. Accordingly, NNSR permit requirements apply to any major modification that results in emissions exceeding the NNSR significance threshold for these pollutants or their precursors.

41. Lake County, Indiana is in attainment for other regulated NAAQS pollutants, including, inter alia, CO and SO_x. Accordingly, PSD permitting requirements apply to any major modification that results in emissions exceeding the PSD significance thresholds for these pollutants.

Permitting and Construction of the CXHO and TAR Projects

42. Upon information and belief, BP commenced construction of the Combined CXHO Project beginning in early 2005, upon commencement of construction of the TAR Project, an expansion of its FCU 500 unit. The Combined CXHO Project, of which the TAR Project is a component, is intended to accommodate increased use of CXHO feedstock.

43. BP failed to obtain either a major or minor source permit for the TAR Project before it commenced construction of the TAR Project in 2005.

44. In or about 2006, BP submitted to IDEM an application for a PSD major source permit for the CXHO Project, based upon netting calculations showing an increase in CO emissions over the PSD significance threshold.

45. In October 2007, BP withdrew its earlier application and submitted to IDEM a revised application for the CXHO Project (the "Application") seeking a minor source permit, based on various revisions made to the original application.

46. On May 1, 2008, IDEM issued a minor source Permit to BP for construction of the CXHO Project pursuant to 326 IAC 2-7-10.5. The Permit was challenged by several environmental organizations.

47. On or about November 29, 2007, EPA issued to BP an NOV finding that the 2005 TAR Project expanding the FCU 500 unit at the Refinery was a major modification that significantly increased emissions of pollutants regulated under the PSD and NNSR programs, and that BP had commenced construction of the TAR Project without a permit as required by those programs.

48. On or about October 1, 2008, EPA Region 5 issued an Amendment to the November 29, 2007 NOV. The amendment stated that the TAR Project was in fact a component of BP's Combined CXHO Project to expand the refinery to accommodate additional CXHO, and thus that the TAR Project and the CXHO Project were not separate projects but rather part of the same Combined CXHO Project and should have all been included in a single major source permitting process prior to BP commencing construction.

49. Upon information and belief, BP's construction of the CXHO Project and the Combined CXHO Project remains ongoing.

FIRST CLAIM FOR RELIEF
(Failure to Obtain Major Source PSD and NNSR Permit for the CXHO Project)

50. The CAA requires that BP, before commencing construction, apply for and receive a major source permit for the CXHO Project that properly accounts for all of the CXHO Project's air emissions.

51. Neither the application submitted by BP to IDEM, nor the minor source Permit issued by IDEM for the CXHO Project, properly account for all of the CXHO Project's air emissions. Were all sources of emissions associated with the CXHO Project identified and

factored into PSD and NNSR netting calculations using correct and legally required assumptions and methods, the CXHO Project would be found to cause emissions exceeding the significance threshold for one or more regulated pollutants, thus triggering PSD and NNSR major source permitting requirements. The four separate calculation omissions identified in this Claim for Relief would, collectively and perhaps individually, be sufficient to trigger more stringent CAA permitting requirements if corrected in accordance with law.

52. Notwithstanding the fact that its emissions, properly accounted for, would trigger PSD and NNSR major source permitting requirements, BP intends to construct, and is constructing, the CXHO Project without a major source permit.

1. Flaring emissions

53. The CXHO Project design includes construction of three new flares, and expressly contemplates use of existing flares in connection with the CXHO Project.

54. The purpose of refinery flares is to release and combust gases generated in the refining process that cannot be contained within the facility. Causes of refinery flaring include, inter alia, facility planned and unplanned startups and shutdowns, process malfunctions, and inadequate compressor capacity.

55. Refinery flares have consistently proven to be an enormous source of air pollution emissions. At refineries in the San Francisco Bay Area, where great attention has been paid to the problem of flaring emissions, SO_x emissions at refineries studied frequently exceeded 10,000 pounds, and were as high as 70,000 pounds, in a single day. Similarly, emissions of VOCs from flaring frequently exceeded thousands of pounds per day, and were recorded as high as 22,000 pounds per day. Annually, flaring events meant SO_x emissions as high as 3,000 tons and VOC

emissions over 1,800 tons. Refinery flare emissions also cause enormous emissions of particulate matter (both PM10 and PM2.5), CO, and other pollutants.

56. A substantial percentage of refinery flaring emissions result from startup, shutdown, or malfunction (“SSM”) events, many of which are unplanned “upset” events. In a recent study of 37 facilities conducted by the Washington DC-based Environmental Integrity Project, SSM upset emissions of at least one pollutant actually exceeded the annual emissions that the facility reported to the state for that pollutant, in once case by a factor of three.¹ Other examples of large flaring upset emissions include releases of hazardous air pollutants (“HAPs”) reported in 2006 by the Premcor Refining Group Inc.’s “Valero” oil refinery in Port Arthur, Texas; Motiva Enterprises’ Port Arthur Refinery; and TOTAL Petrochemicals’ Port Arthur Refinery. Specifically, the Premcor refinery released nearly 4 tons of HAPs during one single “air emissions event”; the Motiva refinery released nearly 35 tons of HAPs in a single upset event; and the TOTAL refinery released over 47 tons of HAPs in a single “air emissions event.”

a. The Application and Permit Do Not Account for Emissions from Flares

57. Notwithstanding the overwhelming data concerning large-scale emissions from flares at refineries, the Permit netting analysis assumes *no* emissions associated with use of the three new planned CXHO Project flares. The only flare emissions from the planned new flares included in the Permit netting calculations were those from pilot gas and purge gas, which are the emissions that occur when the flares are *off*. Thus, BP and IDEM assumed for purposes of the netting calculation that the flares would never be used.

58. The netting calculations in the Application and Permit also included no increased emissions from the existing flares at the refinery, even though the Permit in multiple places

¹ Kelly Harrigan, “Report: Gaming the System,” Environmental Integrity Project, Aug. 18, 2004, available at <http://www.environmentalintegrity.org/pub240.cfm>.

expressly specifies that the existing flares are to be used in conjunction with the CXHO Project, thereby increasing the use of those flares and the volume of gas to be vented through them.

59. The methods for calculating a “significant emissions increase” involve a unit-by-unit summation of the difference between each unit’s Future Emissions and its baseline emissions. See, e.g., 40 C.F.R. § 51.166(a)(7)(iv)(d), 326 IAC 2-2-2(d)(4). An “emissions unit” is defined as “any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant.” 40 C.F.R. § 51.166(b)(7), 326 IAC 2-2-1(u); 40 C.F.R. § 51.165(a)(1)(vii), 326 IAC 2-3-1(s). Flares are emission units, as they are parts of the source that emit or have the potential to emit regulated NSR pollutants. Emissions from the use of flares therefore must be included in the netting calculations.

60. The Application documents did not include sufficient data to calculate with precision the PTE, baseline, or Future Emissions from either the three new CXHO Project flares or from increased use of existing flares associated with the CXHO Project. However, the known levels of pollutant emissions associated with flaring recorded at other refineries for which data are available – which are comparable to the Refinery using conservative comparison criteria, and generally have far fewer flares than the Refinery’s eight existing and three planned new CXHO Project flares – would by themselves exceed the PSD and NNSR significance thresholds for multiple regulated pollutants, including, inter alia, NO_x, SO_x, PM_{2.5}, PM₁₀, CO, and VOCs, so as to trigger BACT or LAER requirements and other PSD or NNSR requirements for those pollutants. Thus, upon information and belief, the increased emissions that will be associated with use of the three new CXHO Project flares and additional use of the eight existing flares would have triggered those requirements had those emissions been factored into the PTE and netting calculations.

61. IDEM acknowledged in its response to public comments concerning the draft Permit (the “Response”) that some use of the flares at the Refinery will likely occur as a result of the CXHO Project, from SSM upset events and other causes.

62. IDEM further acknowledged in its response to public comments concerning the draft Permit (the “Response”) that it failed to include emissions from use of the flares in the Permit netting calculations. According to the Response, upset SSM flaring emissions were excluded from both the emissions baseline and calculated emissions increases.

b. The Permit Contains No Enforceable Limits on Flaring

63. IDEM states generally in the Response that flaring will be reduced at the Refinery as a result of the CXHO Project because (i) the post-Project Refinery will operate more efficiently and with fewer malfunctions or maintenance problems than currently occur at the Refinery, (ii) some redundant capacity has been added, and (iii) flare gas recovery will be used at two of the three new flares. However, the Permit contains no information as to the specific nature of these purported flare reduction measures, no quantification estimate of the decrease in frequency of flaring events as a result of these purported measures, and no quantification of the resulting decrease in flaring emissions. These purported flare reduction measures are therefore not enforceable, and may not lawfully be considered as either reductions in PTE or offsetting emission decreases for purposes of PSD and NNSR netting calculations.

64. The Permit contains a blanket statement that Permit limits generally “shall ensure that the net emissions increases . . . for the [CXHO Project] remain below the significant levelst [sic].” Permit condition D.35.1(g). However, the actual emission limits contained in the Permit address only pilot gas and purge gas emissions, which occur when the flares are off. Accordingly, the Permit as drafted does not limit flare emissions from use of flares below

applicable PSD and NNSR significance thresholds, and Permit condition D.35.1(g) thus constitutes an unenforceable blanket emissions limitation.

c. The Application and Permit Unlawfully Excluded Flaring Emissions from SSM and Upset Events

65. According to the Response, the Permit does not factor into its calculations emissions from use of the refinery flares because “[o]perations during periods of startup, shutdown or malfunction are not considered ‘normal operation,’” and “[a]s a consequence, emissions during such periods have not historically been required to be included in netting calculations.”

66. Exclusion of flaring emissions on this basis is unlawful. Applicable law expressly requires that startup, shutdown, and malfunction emissions be factored into netting calculations. See 40 C.F.R. § 52.21(b)(41)(ii)(b) (“projected actual emissions” for PSD purposes “[s]hall include . . . emissions associated with startups, shutdowns, and malfunctions”); 40 C.F.R. § 51.165(1)(a)(xxviii)(B)(2) (same for NNSR purposes); 326 IAC 2-2-1(rr)(2)(A)(ii) (PSD); 326 IAC 2-3-1(mm)(2)(A)(ii) (NNSR).

67. Additionally, “normal operation” of the flare – as opposed to “normal operation” of the Refinery as a whole – is defined as including operation in connection with SSM and upset events. The specific proper purpose of a flare is to vent refinery gases that cannot be captured and recycled through normal use of compressors and flare gas recovery. CAA regulations prohibit routine combustion of substantial H₂S through flares during normal operation of a refinery, allowing such combustion only during upset events. 40 C.F.R. § 60.104(a)(1). Accordingly, exclusion of flare emissions on the ground that flares are not used during “normal operation” of the Refinery is improper, as this reasoning would necessarily exclude emissions from “normal operation” of the flares.

2. Other excluded emissions

68. The PTE and netting calculation in the Application and Permit failed to factor in numerous additional emission sources, including the following:

a. Coke Drum Depressurization Emissions. Available information indicates that emissions associated with coke drum depressurization venting would increase total PM emissions by at least 10 tpy and VOC emissions by 8 tpy, and very likely by a much greater amount.

b. Coke Drum Decoking Emissions. Available information indicates that PM10 and VOC emissions associated with decoking would be roughly comparable to the emissions associated with coke drum depressurization.

c. Fugitive sulfur emissions. Fugitive sources, such as leaks from valves, connectors, flanges, pumps, compressors, and tanks are typically major sources of reduced sulfur compounds including H₂S at refineries. The CXHO Project will substantially increase the amount of reduced sulfur compounds formed in all existing processing units because the CXHO Project is designed to allow the Refinery to process more high sulfur CXHO. Further, reduced sulfur compounds including H₂S will be emitted from fugitive components in the new units.

d. Venting from pressure relief devices. The Permit appears to allow venting of the pressure relief devices (“PRDs”) to the atmosphere due to the CXHO Project, but does not account for these emissions in the netting analysis. PRDs can emit over 100 tons of VOC pollutants at once – in fact, they are designed to emit many tons even in ten minutes in order to avoid vessel over-pressurization.

69. Inclusion of these omitted sources of emissions in PSD and NNSR netting calculations for the Permit, in conjunction with the added emissions from other identified excluded emission sources and correction of incorrect and/or unlawful calculation assumptions identified in this Claim for Relief, would, collectively and perhaps individually, be sufficient to trigger PSD and NNSR significance thresholds for ozone precursors (volatile organic compounds and nitrogen oxides), PM10, and/or H₂S.

70. The final Permit added to the draft Permit a requirement that emissions from some of the sources at facility omitted from the netting calculation are to be monitored and measured to identify any exceedances of the PSD or NNSR significance thresholds after the operating permit is issued. However, the CAA does not allow after-the-fact monitoring as a substitute for appropriate up-front PTE and netting calculations. The CAA requires a determination of the significance of emission increases in connection with a permit to construct. 40 C.F.R. §§ 52.21(a)(2) & 52.24; 326 IAC 2-2-2 & 2-3-2.

71. Since the added conditions require monitoring only, and do not specify measures by which emissions will be limited to prevent any exceedance of PSD/NNSR significance, these conditions do not constitute enforceable limits on the CXHO Project's emissions.

72. The Response additionally specifies reasons why the identified emissions sources are purportedly not likely to increase significantly as a result of the CXHO Project, including, inter alia, modifications to the sulfur recovery unit complex and routing of vessel depressurization emissions to the flare gas recovery system. However, these measures are neither required by the Permit nor quantified as to the anticipated decrease in emissions, and hence do not constitute enforceable limits holding the facility's PTE below the PSD and NNSR significance thresholds.

3. Use of emission factors to calculate baseline emissions

73. The Application and Permit use emission factors to calculate baseline emissions for purposes of netting. See, e.g., Permit Application Sections 3.2.1.1 (VOCs from new heaters), 3.2.1.4 (Particulate Matter from new heaters), 3.2.1.6 (lead from new heaters), 3.2.1.7 (mercury from new heaters), 3.2.1.8 (beryllium from new heaters), 3.2.2 (AP-42 factors used for VOC, NOX, SO₂, PM/PM₁₀/PM_{2.5}, CO, and lead from sulfur recovery unit), 3.2.3.2 (Particulate Matter from cooling towers), 3.2.4.1 (fugitive emissions from material handling), and 3.3.1.1 (baseline actual emissions for existing units calculated from, among other things, AP-42 emission factors) and generally Appendix C.

74. This reliance on emission factors in calculating baseline emissions, such as those contained in EPA's AP-42, is improper and unlawful. Increases and decreases used to determine the "net emissions increase" for any regulated PSD and NNSR pollutant must be calculated using "baseline *actual* emissions." 40 C.F.R. § 52.21(a)(iv)(d) (PSD); 40 C.F.R. § 51.165(a)(vi)(A)(2) (NNSR); 326 IAC 2-2-1(jj)(1)(B) (PSD); 326 IAC 2-3-1(dd)(1)(B) (NNSR) (emphasis added). For an existing refinery, baseline actual emissions means "the average rate, in tons per year, at which *the emissions unit actually emitted the pollutant* during any consecutive twenty-four (24) month period" during a preceding ten-year period. 40 C.F.R. § 52.21(b)(21)(ii); 40 C.F.R. § 51.165(a)(1)(xxxv)(B); 326 IAC 2-2-1(e)(2); 326 IAC 2-3-1(d)(1). Baseline actual emissions thus must be based on actual testing data from the unit or a similar unit, i.e., a unit's actual operating hours, production rates, and types of material processed, stored, or combusted during the selected period. In other words, actual emissions must be based on measurement or other concrete, source-specific evidence, and not on industry-wide average emission factors.

75. Use of actual baseline emissions rather than emission factors in PSD and NNSR netting calculations for the Permit, in conjunction with the added emissions from other identified excluded emission sources and correction of incorrect and/or unlawful calculation assumptions identified in this Claim for Relief and perhaps independently, would trigger PSD and NNSR significance thresholds.

4. Failure to account for increased contaminant levels in CXHO feedstock crude

76. The Permit PTE and netting calculations underestimate Future Emissions of SO₂ that will result from higher levels of sulfur in the CXHO feedstock crude. Among other things, the Application and Permit use an emission factor for SO₂ that underestimates the level of sulfur in CXHO. Sulfur in crude is converted into H₂S and other reduced sulfur compounds, like mercaptans, during processing. Thus, H₂S and reduced sulfur compounds will be emitted in higher amounts when the refinery processes tar sands crude, from flares, from fugitive sources like tanks, valves, and flanges, and from the sulfur recovery plant. The Permit does not adequately account for these additional sources of pollution.

77. Use of corrected assumptions and information that takes into account the level of sulfur in CXHO in PSD and NNSR netting calculations for the Permit, in conjunction with the added emissions from other identified excluded emission sources and correction of incorrect and/or unlawful calculation assumptions identified in this Claim for Relief and possibly independently, would trigger the PSD significance threshold for H₂S.

5. Use of Years in Which BP Was In Violation of its Emission Limits as Baseline Years

78. In 2001, BP entered into a consent decree with EPA in order to remedy CAA violations occurring in years prior to the date of the decree.

79. In the permit application and Permit, BP and IDEM unlawfully use emissions from one or more years in which the violations addressed in the decree were occurring as a baseline in calculations intended to determine the applicability of PSD/NNSR requirements. On information and belief, BP and IDEM failed to adjust the baseline to reflect the fact that BP was operating in violation of the CAA during such years.

80. Adjustment of baseline emissions to reflect the fact that BP was operating in violation of the CAA during the affected baseline years in PSD and NNSR netting calculations for the Permit, in conjunction with the added emissions from other identified excluded emission sources and correction of incorrect and/or unlawful calculation assumptions identified in this Claim for Relief and perhaps independently, would trigger PSD and NNSR significance thresholds.

SECOND CLAIM FOR RELIEF
(Failure to Obtain Major Source PSD and NNSR Permit for Combined CXHO Project)

81. Plaintiff repeats and realleges the allegations set forth in paragraphs 1-80 above as though fully set forth herein.

82. The TAR Project was undertaken for the purpose, inter alia, of allowing the Refinery to process additional CXHO.

83. The TAR Project and the CXHO Project are thus both components of BP's larger Combined CXHO Project to expand the Refinery to process additional CXHO.

84. The TAR Project, standing alone, constituted a major modification of the Refinery that caused a significant increase in one or more pollutants regulated under the PSD and/or NNSR Programs.

85. The CXHO Project, in combination with the TAR Project as part of the Combined CXHO Project, constitutes a major modification of the Refinery that caused a significant increase in one or more pollutants regulated under the PSD and/or NNSR Programs.

86. BP commenced the TAR Project in or about 2005, without obtaining either a major source or a minor source permit.

87. BP's commencement of the TAR Project in 2005 constituted commencement of the Combined CXHO Project without a major source permit, in violation of the requirements of the PSD and NNSR Programs and the SIP.

THIRD CLAIM FOR RELIEF
(Failure to Obtain Major Source NNSR Permit for PM2.5 Emissions)

88. Plaintiff repeats and realleges the allegations set forth in paragraphs 1-87 above as though fully set forth herein.

89. As the CXHO Project and/or the Combined CXHO Project is located in an air quality control region designated nonattainment for ozone and fine particulate matter ("PM2.5"), 70 Fed. Reg. 944 (Jan. 5, 2005), the CXHO Project and/or the Combined CXHO Project must comply with NNSR permitting rules for PM2.5 to the extent they apply.

90. Notwithstanding this requirement, the Application and Permit instead treated PM2.5 as if it were PM10, then used the NNSR regulations for PM10 to address PM2.5.

91. This use of PM10 as a surrogate for PM2.5 violates federal and state law governing NNSR. EPA since 1997 has distinguished PM2.5 from PM10, most importantly by setting different NAAQS for each. Both the federal and Indiana NSR program treat PM2.5 and PM10 separately in terms of attainment designations in relation to these separate standards. The Refinery is located in an area designated as attainment for PM10 and nonattainment for PM2.5.

92. Additionally, using PM10 as a surrogate for PM2.5 means that, in the netting analysis for the CXHO Project, some decreases in PM10 are likely to have been claimed as offsets for increases in PM2.5. Such substitution of decreases in less harmful pollution for more harmful increases violates NNSR netting requirements. In order to be creditable for netting purposes in a nonattainment area, a reduction in emissions at an existing unit must have “approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.” 40 C.F.R. § 51.166(b)(3)(vi)(c); 326 IAC 2-3-1(dd)(3)(B)(v)(DD). Thus, a creditable reduction in emissions must be approximately as harmful, or less harmful, to public health and welfare than a proposed increase.

93. EPA has found that the health effects associated with PM2.5 differ significantly from those linked to PM10, and that PM2.5 poses the largest health risks. A ton of PM10 therefore is not qualitatively the same as a ton of PM2.5 in terms of its impact on public health. Using PM10 as a surrogate for PM2.5 in the NNSR netting calculations means these calculations fail to demonstrate that increases in very harmful PM2.5 will be sufficiently mitigated by creditable decreases with respect to health.

94. The NNSR regulations do not identify a numeric significance threshold for PM2.5 emissions. However, those regulations apply to any “significant” increase in emissions of any pollutant for which the location at which the source is located is in non-attainment.

95. The CXHO Project and/or the Combined CXHO Project will emit a significant amount of PM2.5. Although neither the Application nor the Permit separately account for PM2.5, they identify significant sources of “condensable” particulate matter, which consists primarily of PM2.5. The emissions identified in the First Claim for Relief that were unaccounted

for in the CXHO Project PTE and netting calculations additionally include significant PM2.5 emissions.

96. BP is therefore required to conduct a separate PTE and netting calculation for PM2.5, and to obtain a major source permit requiring, inter alia, LAER controls on the CXHO Project and/or Combined CXHO Project sources of PM2.5.

PRAYER FOR RELIEF

WHEREFORE, based upon all the allegations contained in paragraphs 1 through 96 above, plaintiff requests that this Court:

1. Declare that defendant BP has violated the Clean Air Act by commencing construction of the CXHO Project and/or the Combined CXHO Project without a major source permit as required under parts C and D of subchapter I of the Act.
2. Issue an injunction prohibiting BP from construction and operation of the Project without a major source permit as required under parts C and D of subchapter I of the Act.
3. Assess a civil penalty against BP of up to \$32,500 per day for each violation of the Act and applicable regulations;
4. Award plaintiff its reasonable costs and attorneys' fees; and
5. Grant such other relief as the Court deems just and proper.

Dated: December 1, 2008

Respectfully submitted,

s/ Thomas Cmar
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CERTIFICATE OF SERVICE

I hereby certify that on December 1, 2008, I electronically filed **PLAINTIFF'S FIRST AMENDED COMPLAINT** with the Clerk of the Court using the CM/ECF system, which sent notification of such filing to the following:

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