INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

September 25, 2013

VIA ELECTRONIC MAIL

Mr. Nick Spencer, Whiting Business Unit Leader
BP Products North America
2815 Indianapolis Boulevard
P.O. Box 710
Whiting, Indiana 46394-0710

Dear Mr. Spencer:

Re: NPDES Permit No. IN0000108
BP Products North America
Whiting, Indiana Lake County

Your application for a National Pollutant Discharge Elimination System (NPDES) permit for authorization to discharge into the waters of the State of Indiana has been processed in accordance with Section 402 and 405 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, et seq.), and IC 13-15, IDEM's permitting authority. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires periodic reporting of several effluent parameters. These forms are available on the internet at the following web site:

http://www.in.gov/idem/5104.htm

Additionally, you will soon be receiving a supply of the computer generated preprinted federal NPDES DMR forms. Both the state and federal forms need to be completed and submitted on a routine basis. If you do not receive the preprinted DMR forms in a timely manner, please call this office at 317-232-8670.

Another condition which needs to be clearly understood concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may subject the permittee to criminal or civil penalties. (See Part II A.2.) It is therefore urged that your office and treatment operator understand this part of the permit.

A response to the public comments received during the public comment period and from the public hearing pertaining to the draft NPDES permit is contained in the Post Public Notice Addendum. The Post Public Notice Addendum is located at the end of the Fact Sheet.

It should also be noted that any appeal must be filed under procedures outlined in IC 13-15-6, IC 4-21.5, and the enclosed Public Notice. The appeal must be initiated by filing a petition for administrative review with the Office of Environmental Adjudication (OEA) within eighteen (18) days of the mailing of this letter by filing at the following address:

Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue, Room 501
Indianapolis, IN 46204

Please send a copy of any written appeal to me at the IDEM, Office of Water Quality - Mail Code 65-42, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions concerning the permit, please contact Mr. Steve Roush at 317/233-5747 or sroush@idem.in.gov . Questions concerning appeal procedures should be directed to the Office of Environmental Adjudication, at 317/232-8591.

Sincerely,

Paul Higginbotham, Chief
Permits Branch
Office of Water Quality

Enclosures
cc: U.S. EPA, Region V
Lake County Health Department

STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), and IDEM's authority under IC13-15,

BP PRODUCTS NORTH AMERICA, INC.
WHITING REFINERY

is authorized to discharge from a petroleum refinery located at 2815 Indianapolis Blvd., Whiting Indiana to receiving waters named Lake Michigan and the Lake George Branch of the Indiana Harbor Ship Canal in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III and IV hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: November 1, 2013

Expiration Date: October 31, 2018

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Signed on September 25, 2013 for the Indiana Department of Environmental Management.

Paul Higginbotham, Chief
Permits Branch
Office of Water Quality

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 005 (The discharge from the diffuser located in Lake Michigan). The discharge is limited to treated process wastewater from normal refinery operations including maintenance, turnaround activities, excavation, dewatering, construction activities, tank cleaning, and temporary flows from upsets or downtime and from Ineos stormwater and Praxair process wastewater, recovered ground water, and other related offsite facilities, such as pipelines and terminals wastewater as well as most of the storm water from the site and re-treatment of off spec WWTP effluent. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALL 005 [1][3][8]
Table 005-1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
BOD_5	4,161	8,164	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
TSS	3,646	5,694	lbs/day	Report	Report	mg/l	2 x Weekly	24 Hr. Comp.
COD	30,323	58,427	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Oil and Grease	1,368	2,600	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Total Phosphorus	Report	Report	lbs/day	1.0	Report	mg/l	1 x Weekly	24 Hr. Comp.
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Ammonia as N	1,030	2,060	lbs/day	Report	Report	mg/l	5 x Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 x Weekly	24-Hr Comp.
Total Chromium [2]	23.9	68.53	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Hex. Chromium [4]	2.01	4.48	lbs/day	Report	Report	mg/l	1 x Weekly	24-Hr. Comp.
Vanadium [2][9]	50	100	lbs/day	0.28	0.56	mg/l	1 x Monthly	24-Hr. Comp.
Total Mercury [5][7][9]								
Final Limits	0.00022	0.00053	lbs/day	1.3	3.2	ng/l	6 x Yearly	Grab
Interim Variance Limits		Annual Average = 8.75			Report	ng/l	6 x Yearly	Grab
Whole Effluent Toxicity [6]								
Chronic	-	-	-	Report	-	TUc	2 x Yearly	

Table 005-1

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration Monthly Average	Quality or Concentration Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Arsenic [9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Copper [9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Chloride	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24 Hr. Comp.
Lead [9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Total Dissolved Solids (TDS)	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Manganese	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Selenium [9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Strontium [9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Sulfate	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Nitrate-Nitrite	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Temperature	------	------	-------	-------	Report	^{0}F	1 X Monthly	Grab
Benzo a pyrene	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24 Hr. Comp.
Total Residual Chlorine	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab

Table 005-2

Parameter	Quality or Concentration Daily Minimum	Quality or Concentration Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
pH	6.0	9.0	s.u.	3 x Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 005 that are greater than the dosage rate identified in the permit application, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The permittee shall measure and report the identified metals as total recoverable metals. One year after the Sulfur Recovery Unit (SRU) Beavon Stretford Solution blowdown (vanadium-based technology) has been replaced with the non-vanadium based Shell Claus Off-gas Treatment (SCOT), the permittee may request, in writing, a review of the effluent limits and monitoring requirement for Total Vanadium at Outfall 005.

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] Hexavalent Chromium shall be measured and reported as dissolved metal. The Hexavalent Chromium sample type shall be a 24 hour composite sample. The maximum holding time for a Hexavalent Chromium sample is 28 days (40 CFR 136.3 Table IB). If the test results from the analysis performed for total chromium reveal that the concentration is less then the limitations for "Hexavalent Chromium", the the test for hexavalent chromium may be eliminated for that day and reported as the same concentration as total chromium for that day.

[5] Mercury monitoring shall be conducted bi-monthly monitoring in the months of February, April, June, August, October, and December of each year for the term of the permit.

The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[6] The permittee shall conduct Whole Effluent Toxicity tests in accordance with Part I.G. of this permit.

[7] For the term of this permit, the permittee is subject to the variance discharge limit developed in accordance with 327 IAC 5-3.5-8. The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBEL under 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with mercury discharge limitations of this permit for Outfall 005. **The permittee shall report both a daily maximum value and an annual average for Mercury.** The annual average value shall be calculated pursuant to 327 IAC 5-3.5-8(a). Compliance with the interim variance limit for Mercury will be achieved when the average of the effluent daily values measured over the most recent (rolling) twelve-month period is less than the interim variance limit. The calculating and reporting of the annual average value for mercury is only required for the months when samples are taken for mercury.

BP shall at all times continue to operate and maintain the wastewater treatment system(s) in good working condition to minimize the discharge of Mercury. See Part IV of the permit for the Mercury Pollution Prevention Management Plan Requirements.

[8] The weekly sampling period is from Monday through Sunday.

[9] The permittee shall measure and report the identified metals as total recoverable metals.

2. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 002. The discharge is limited to non-contact cooling water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALL 002 [1][3][2]
Table 002-1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	5.0	mg/l	1 x Yearly	Grab
Total Residual Chlorine [5][6][7]	20.0	60.0	lbs/day	0.01	0.02	mg/l	1 x Weekly	Grab
Oil & Grease	-	-	-	Report	5.0	mg/l	1 x Monthly	Grab
Temperature [4]								
Intake	-	-	-	Report	Report	F°/Hour	5 x Weekly	Hourly
Discharge	-	-	-	Report	Report	F°/Hour	5 x Weekly	Hourly
Net (daily ave.)	-	-	-	1.7×10^9	2.0×10^9	BTU/Hour	5 x Weekly	Daily

Table 002-2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	3 x Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 002 that are greater than the dosage rate identified in the permit application, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The weekly sampling period is from Monday through Sunday.

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] The heatload shall be calculated by subtracting the average 24 hour temperature value of the intake water from the average 24 hour temperature value of the gross discharge converting to BTU/hr by multiplying the temperature difference by the average 24 hour discharge flow and the appropriate conversion factor. Temperature shall be monitored on a continuous basis except for periods of downtime, maintenance, repair or upset.

[5] The monthly average water quality based effluent limit (WQBEL) for total residual chlorine is less than the limit of quantitation (LOQ) as defined below. Compliance with the monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. Daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.

[6] The daily maximum WQBEL for total residual chlorine is equal to the LOD but less than the LOQ specified in the permit. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 60.0 lbs/day.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[7] See Part I.H. of the permit for Pollutant Minimization Program Requirements.

3. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfalls 003 and 004. The discharge is limited to stormwater associated with industrial activity from the J&L and Lake George areas of the refinery. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Lake George Branch of the Indiana Harbor Ship Canal. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALLS 003 and 004 [1][3][4]
Table 003/004-1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	110	mg/l	1 x Weekly[2]	Grab
Oil & Grease	-	-	-	Report	15	mg/l	1 x Weekly[2]	Grab

Table 003/004-2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 x Weekly[2]	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Standards.

[2] The permittee shall sample TOC, Oil & Grease, and pH during the first discharge of each week. If there is no discharge during any particular week, then the permittee shall report No Discharge for that week on the monthly DMR.

[3] The Storm Water Pollution Prevention Plan (SWP3) requirements can be found in Part I.D. and I.E. of this permit.

[4] The weekly sampling period is from Monday through Sunday.

B. NARRATIVE WATER QUALITY STANDARDS

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

1. including the mixing zone, to contain substances, materials, floating debris, oil, scum, or other pollutants:

   a. that will settle to form putrescent or otherwise objectionable deposits;

   b. that are in amounts sufficient to be unsightly or deleterious;

   c. that produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

   d. which are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;

   e. which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

2. outside the mixing zone, to contain substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

1. Representative Sampling

   Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge.

2. Discharge Monitoring Reports

   a. For parameters with monthly average water quality based effluent limitations (WQBELs) below the LOQ, daily effluent values that are less than the limit of quantitation (LOQ) may be assigned a value of zero (0).

   b. For all other parameters for which the monthly average WQBEL is equal to or greater than the LOQ, calculations that require

averaging of measurements of daily values (both concentration and mass) shall use an arithmetic mean. When a daily discharge value is below the LOQ, a value of zero (0) shall be used for that value in the calculation to determine the monthly average unless otherwise specified or approved by the Commissioner.

c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.

d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.

e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.

f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous month which shall be postmarked no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective. All reports shall be mailed to IDEM, Office of Water Quality – Mail Code 65-42, Compliance Data Section, 100 North Senate Ave., Indianapolis, Indiana 46204-2251. In lieu of mailing paper reports the permittee may submit its reports to IDEM electronically by using the NetDMR application, upon registration and approval receipt. Electronically submitted reports (using NetDMR) have the same deadline as mailed reports. The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit.

3. Definitions

a. Monthly Average

(1) Mass Basis - The "monthly average" discharge means the total mass discharge during a calendar month divided by

the number of days in the month that the production or commercial facility was discharging. Where less than daily samples is required by this permit, the monthly average discharge shall be determined by the summation of the measured daily mass discharges divided by the number of days during the calendar month when the measurements were made.

(2) Concentration Basis - The "monthly average" concentration means the arithmetic average of all daily determinations of concentration made during a calendar month. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Daily Discharge"

(1) Mass Basis – The "daily discharge" means the total mass discharge by weight during any calendar day.

(2) Concentration Basis – The "daily discharge" means the average concentration over the calendar day or any twenty-four (24) hour period that reasonably represents the calendar day for the purposes of sampling.

c. "Daily Maximum"

(1) Mass Basis – The "daily maximum" means the maximum daily discharge mass value for any calendar day.

(2) Concentration Basis – The "daily maximum" means the maximum daily discharge value for any calendar day.

(3) Temperature Basis – The "daily maximum" means the highest temperature value measured for any calendar day.

d.

A 24-hour composite sample consists of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis. A flow-proportioned composite sample may be obtained by:

(1) recording the discharge flow rate at the time each individual sample is taken,

(2) adding together the discharge flow rates recorded from each individuals sampling time to formulate the "total flow" value,

(3) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,

(4) then multiply the volume of the total composite sample by each individual sample's percentage to determine the volume of that individual sample which will be included in the total composite sample.

e. Concentration -The weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

f. The "Regional Administrator" is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.

h. "Limit of Detection or LOD" means a measurement of the concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix. The LOD is equivalent to the method detection level or MDL.

i. "Limit of Quantitation or LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit quantification or quantification level.

j. "Method Detection Level or MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

4. Test Procedure

The analytical and sampling methods used shall conform to the current version of 40 CFR 136. Multiple editions of Standard Methods for the Examination of Water and Wastewater are currently approved for most methods, however, 40 CFR Part 136 should be checked to ascertain if a particular method is approved for a particular analyte. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency.

a. Standard Methods for the Examination of Water and Wastewater 18th, 19th, or 20th Editions, 1992, 1995, or 1998, American Public Health Association, Washington, D.C. 20005.

b. A.S.T.M. Standards, Parts 23, Water; Atmosphere Analysis 1972 American Society for Testing and Materials, Philadelphia, PA 19103.

c. Methods for Chemical Analysis of Water and Wastes June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The person(s) who performed the sampling or measurements;

c. The dates the analyses were performed;

d The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of all required analyses and measurements.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant listed in Part I.A at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. STORM WATER SPECIAL CONDITIONS, ANNUAL REVIEW, CORRECTIVE ACTIONS AND INSPECTIONS

Within twelve (12) months of the effective date of this permit, BP Products North America shall implement the special conditions in this section of the permit for the J&L and Lake George areas as it relates to storm water associated with industrial activity from outfalls 003 and 004. Notwithstanding any other provisions of this permit, the provisions of this part are not required to address storm water discharges that are routed to treatment and discharged through Outfall 005.

1. Special Conditions

a. Maintenance

Implement a preventive maintenance program including:

(1) Implement good housekeeping practices so the J&L and Lake George areas will be operated in a clean and orderly manner and that pollutants will not have the potential to be exposed to storm water via vehicle tracking or other means.

(2) Maintenance of storm water management measures must be documented and either contained in, or have the on-site recordkeeping location referenced in, the SWP3.

(3) Inspect and test equipment and systems that are in areas that generate storm water discharges and have a reasonable potential for storm water exposure to pollutants to ensure appropriate maintenance of such equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

(4) At a minimum, quarterly inspections of the storm water management measures and storm water conveyances.

(5) An employee training program to inform personnel at all levels of responsibility that that have the potential to engage in industrial activities that impact storm water quality of the components and goals of the SWP3. Training must occur annually and should address topics such as spill response, good housekeeping, and materials management practices.

b. Spill Prevention and Response Procedures

A written spill response plan, including:

(A) Location, description and quantity of all response materials and equipment.

(B) Response procedures for facility personnel to respond to a release.

(C) Contact information for reporting spills, both for facility personnel and external emergency response entities.

c. Erosion and Sediment Controls

Implement measures to reduce erosion from areas, due to topography, activities, or other factors, have a high potential for significant soil erosion.

d. Management of Runoff

Divert, infiltrate, reuse, contain or otherwise reduce storm water runoff, to minimize pollutants in the discharge.

e. Non-Storm Water Discharges

Determine if any non-storm water discharges not authorized by an NPDES permit exist. Any non-storm water discharges discovered must either be eliminated or modified and included in this permit.

The following non-storm water discharges are authorized and should be documented when they occur in accordance with Part I.E.2.c of this permit:

- Fire Training or system flushing;
- Potable water sources including water line flushing;
- Uncontaminated ground water;
- Routine exterior building wash down that does not use detergents or other compounds;
- Pavement wash waters where spills or leaks of toxic or hazardous material have not occurred and where detergents are not used;
- Air conditioning condensates; and
- Equipment hydro-testing using fire water.

2. Annual Review

At least once every calender year, you must review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limitations in Part I.A.3 of this permit. You must document the results of your review in a report that shall be retained within the SWPPP. BP must also submit the report including any updates to the SWP3 to the Industrial NPDES Permit Section on an annual basis by April 1st of each year.

3. Corrective Actions – Conditions Requiring Review

a. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated:

(1) an unauthorized release or discharge (e.g., spill, leak, or discharge of non-storm water not authorized by this NPDES permit) occurs at this facility;

(2) a violation of a numeric effluent limit;

(3) a determination that your control measures are not stringent enough for the discharge to meet applicable water quality standards;

(4) a determination in your routine facility inspection, an inspection by EPA or IDEM, comprehensive site evaluation, or the Annual Review required in Part D.2 that modifications to the control measures are necessary to meet the effluent limits in this permit or that your control measures are not being properly operated and maintained; or

(5) Upon written notice by the Commissioner that the control measures prove to be ineffective in controlling pollutants in storm water discharges exposed to industrial activity.

b. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit:

(1) construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharge.

4. Corrective Action Deadlines

You must document your discovery of any of the conditions listed in Part I.D.3 within thirty (30) days of making such discovery. Subsequently, within one-hundred and twenty (120) days of such discovery, you must document any corrective action(s) to be taken to eliminate or further investigate the deficiency or if no corrective action is needed, the basis for that determination. Specific documentation required within 30 and 120 days is detailed below. If you determine that changes to your control measures are necessary following your review, any modifications to your control measures must be made before the next storm event if possible, or as soon as practicable following that storm event. These time intervals are not grace periods, but schedules considered reasonable for the documenting of your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.

5. Corrective Action Report

Within 30 days of a discovery of any condition listed in Part I.D.3, you must document the following information:

a. Brief description of the condition triggering corrective action;

b. Date condition identified; and

c. How deficiency identified.

Within 120 days of discovery of any condition listed in Part I.D.3, you must document the following information:

a. Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.D.3.a where you determine that corrective action is not necessary, the basis for this determination)

b. Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;

c. Date corrective action initiated; and

d. Date corrective action completed or expected to be completed.

6. Comprehensive Site Compliance Evaluation – Qualified personnel shall conduct a comprehensive compliance evaluation of the J&L and Lake George areas, at least once per year, to confirm the accuracy of the description of potential pollution sources contained in the plan, determine the effectiveness of the plan, and assess compliance with the permit. Such evaluations shall provide:

(1) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measure, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

As part of the routine inspections, address all potential sources of pollutants. Also inspect all material handling equipment (e.g., vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., tank farms) for signs of material loss due to storm water runoff.

(2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with Part I.E.2.b of this permit and pollution prevention measures and controls identified in the plan in accordance with Part I.D.1. of this permit shall be revised as appropriate within the timeframes contained in Part I.D.4 of this permit.

(3) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the

evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with the above paragraph must be documented and either contained in, or have on-site record keeping location referenced in, the SWP3 at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with this permit. The report shall be signed in accordance with the signatory requirements of Part II.C.6 of this permit.

(4) Where compliance evaluation schedules overlap the inspections required under Part I.D.6, the compliance evaluation may be conducted in place of one such inspection.

E. STORM WATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 12 months from the effective date of this permit, the permittee is required to revise and update the current Storm Water Pollution Prevention Plan (SWP3) for storm water outfalls 003 and 004 for the permitted facility. The plan shall at a minimum include the following:

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. Storm water associated with industrial activity (defined in 40 CFR 122.26(b)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;

b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to storm water; and

c. Assure compliance with the terms and conditions of this permit.

d. Notwithstanding any other provisions of this permit, the SWP3 is not required to address storm water that is routed to the treatment system that discharges through Outfall 005.

2. Contents

The plan shall include, at a minimum, the following items:

a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan (SWP3) and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each storm water pollution prevention team member. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for storm water to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:

(1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.

(2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which contains a legend and compass coordinates, indicating, at a minimum, the following:

(A) All on-site storm water drainage and discharge conveyances, which may include pipes, ditches, swales, and erosion channels, related to a storm water discharge.

(B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.

(C) All on-site and known adjacent property water bodies, including wetlands and springs.

(D) An outline of the drainage area for each outfall.

(E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.

(F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.

(G) All existing major structural control measures to reduce pollutants in storm water run-off.

(H) All existing and historical underground or aboveground storage tank locations, as applicable.

(I) All permanently designated plowed or dumped snow storage locations.

(J) All loading and unloading areas for solid and liquid bulk materials.

(K) All existing and historical outdoor storage areas for raw materials, intermediary products, final products, and waste materials. Include materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities.

(L) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized materials, for example, in drums and totes.

(M) Outdoor assigned waste storage or disposal areas.

(N) Pesticide or herbicide application areas.

(O) Vehicular access roads.

The mapping of historical locations is only required if the historical locations have a reasonable potential for stormwater exposure to historical pollutants.

(3) An area site map that indicates:

(A) The topographic relief or similar elevations to determine surface drainage patterns;

(B) The facility boundaries;

(C) All receiving waters; and

(D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate stormwater discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J) through (T) of this Part, and any other areas thought to generate storm water discharges exposed to industrial activity. The narrative descriptions for each identified area must include the following:

(A) Type and typical quantity of materials present in the area.

(B) Methods of storage, including presence of any secondary containment measures.

(C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of storm water to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.

(D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their reportable quantity, including the following:

i. The date and type of material released or spilled.

ii. The estimated volume released or spilled.

iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to storm water. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

(E) Where the chemicals or materials have the potential to be exposed to storm water discharges, the descriptions for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

i. Toxicity data of chemicals or materials used within the area, referencing appropriate material safety data sheet information locations.

ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.

iii. Potential ways in which storm water discharges may be exposed to listed chemicals and materials.

iv. The likelihood of the listed chemicals and materials to come into contact with water.

(5) A narrative description of existing and planned management practices and measures to improve the quality of storm water run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(H) through (O) and any other areas thought to generate storm water discharges exposed to industrial activity. The description must include the following:

(A) Any existing or planned structural and

nonstructural control practices and measures.

(B) Any treatment the storm water receives prior to leaving the facility property or entering a water of the state.

(C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.

(6) Describe areas that due to topography, activities, or other factors have a high potential for significant soil erosion.

(7) Information or other documentation required under subsection (d) of this plan.

(8) The results of storm water monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWP3, the on-site location for storage of the information must be reference in the SWP3.

c. Measures and Practices – For the J&L and Lake George areas of the facility that generate storm water discharges and have the potential for exposure to pollutants, that exposure must be minimized. To ensure this reduction, the following practices and measures must documented to meet the special conditions in Part I.D and the effluent limitations in Part I.A.3.

(1) A written preventative maintenance program, including the following:

(A) Implementation of good housekeeping practices to ensure the J&L and Lake George areas.

(B) Maintenance of storm water management measures must be documented and either contained in, or have the on-site recordkeeping location referenced in, the SWP3.

(C) Inspection and testing of equipment and systems that are in areas that generate storm water discharges.

(D) Quarterly inspections of the storm water management measures and storm water conveyances. Inspections must be documented and either contained in, or have the on-site record keeping location referenced in the SWP3.

(E) The employee training program. All employee training sessions, including relevant storm water topics discussed and a roster of attendees, must be documented and either contained in or have an on-site record keeping location referenced in the SWP3.

d. Non-Storm Water Discharges – You must document that you have evaluated for the presence of non-storm water discharges not authorized by a NPDES permit. Any non-storm water discharges have either been eliminated or incorporated into this permit. Documentation of non-storm water discharges shall include

(1) A written non-storm water assessment, including the following:

(A) A certification letter stating that storm water discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-storm water contributions.

(B) The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during the test.

e. General Requirements – The SWP3 must meet the following general requirements:

(1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding storm water control/treatment and monitoring, pollutant fate and transport, and drainage planning.

(2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request.

IDEM may provide access to portions of your SWP3 to the public.

(3) The plan must be revised and updated as required. Revised and updated versions of the plan must be implemented within one year of the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.

(4) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWP3, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWP3 to meet those section requirements.

(5) The permittee may combine the requirements of the SWP3 with another written plan if:

(A) The plan is retained at the facility and available for review;

(B) All the requirements of the SWP3 are contained within the plan; and

(C) A separate, labeled section is utilized in the plan for the SWP3 requirements.

(D) BP shall submit an electronic copy of the revised SWP3 to the industrial NPDES permit section once completed.

F. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

b. controls any pollutant not limited in the permit.

2. to incorporate any of the reopening clause provisions cited at 327 IAC 5-2-16.

3. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act, if the standards, regulations and requirements so issued or approved contains different conditions than those in this permit.

4. If a treatment technology for the removal of mercury from wastewater is identified and is determined by IDEM to be available and economically viable, then BP must install and fully operate that treatment technology as soon as possible. Within 6 months after IDEM's determination or the final disposition of any appeal of such determination, whichever is later, BP shall submit a schedule, subject to IDEM approval, for the installation and operation of the identified treatment technology that is as expeditious as possible. Any such determination shall be considered final agency action, which BP may appeal. Upon completion of 12 months of operation, IDEM should modify the permit in accordance with 327 IAC 5-3.5-8 to revise the effective effluent limits for mercury at Outfall 005.

5. One year after the Sulfur recovery Unit (SRU) Beavon Stretford Solution blowdown (vanadium-based technology) has been replaced with non-vanadium based Shell Claus Off-gas Treatment (SCOT), the permittee may request, in writing, a review of the effluent limits and monitoring requirements for Total Vanadium at Outfall 005.

6. to include revised Streamlined Mercury Variance (SMV) and/or Pollutant minimization Program Plan (PMPP) requirements in the event that revisions to the SMV Requirements and Application Process under 327 IAC 5-3.5 occur.

7. to include a case-specific Limit of Detection (LOD) and/or Limit of Quantitation (LOQ). The permittee must demonstrate that such action is warranted in accordance with the procedures specified under Appendix B, 40 CFR Part 136, using the most sensitive analytical methods approved by EPA under 40 CFR Part 136, or approved by the Commissioner.

8. this permit may be modified or revoked and reissued after public notice and opportunity for hearing to revise or remove the requirements of the pollutant minimization program, if supported by information generated as a result of the program for Total Residual Chlorine.

9. to specify the use of a different analytical method if a more sensitive analytical method has been specified in or approved under 40 CFR 136 or approved by the Commissioner to monitor for the presence and amount in the effluent of the pollutant for which the WQBEL is established. The

permit shall specify, in accordance with 327 IAC 5-2-11.6(h)(2)(B), the LOD and LOQ that can be achieved by use of the specified analytical method.

G. BIOMONITORING PROGRAM REQUIREMENTS

The 1977 Clean Water Act explicitly states, in Section 101(3) that it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited. In support of this policy the U.S. EPA in 1995 amended 40 CFR 136.3 (Tables IA and II) by adding testing method for measuring acute and short-term chronic toxicity of whole effluents and receiving waters. To adequately assess the character of the effluent, and the effects of the effluent on aquatic life, the permittee shall conduct Whole Effluent Toxicity Testing. Part 1 of this section describes the testing procedures, Part 2 describes the Toxicity Reduction Evaluation (TRE) which is only required if the effluent demonstrated toxicity, as described in section 1.f.

1. Whole Effluent Toxicity Tests

The permittee shall continue with their current schedule of the series of bioassay tests described below to monitor the toxicity of the discharge from Outfall 005. If toxicity is demonstrated as defined under section f. below, the permittee is required to conduct a toxicity reduction evaluation (TRE).

a. Bioassay Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used shall be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms; Fourth Edition Section 13, Cladoceran (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0; and Section 11, Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test Method, (1000.0) EPA 821-R-02-013, October 2002, or most recent update.

(2) Any circumstances not covered by the above methods, or that required deviation from the specified methods shall first be approved by the IDEM's Permit Branch.

(3) The determination of effluent toxicity shall be made in accordance with the Data Analysis general procedures for chronic toxicity endpoints as outlined in Section 9, and in Sections 11 and 13 of the respective Test Method (1000.0 and 1002.0) of Short-term Methods of Estimating the

Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms (EPA-821-R-02-013), Fourth Edition, October 2002, or most recent update.

b. Types of Bioassay Tests

(1) The permittee shall conduct 7-day Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test and a 7-day Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test on samples of final effluent. All tests will be conducted on 24-hour composite samples of final effluent. All test solutions shall be renewed daily. On days three and five fresh 24-hour composite samples of the effluent collected on alternate days shall be used to renew the test solutions.

(2) If, in any control, more than 10% of the test organisms die in 96 hours, or more than 20% of the test organisms die in 7 days, that test shall be repeated. In addition, if in the *Ceriodaphnia* test control the number of newborns produced per surviving female is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow test if the mean dry weight of 7-day old surviving fish in the control group is less than 0.25 mg, that test shall also be repeated. Such testing will determine whether the effluent affects the survival, reproduction, and/or growth of the test organisms. Results of all tests regardless of completion must be reported to IDEM.

c. Effluent Sample Collection and Chemical Analysis

(1) Samples taken for the purposes of Whole Effluent Toxicity Testing will be taken at a point that is representative of the discharge, but prior to discharge. The maximum holding time for whole effluent is 36 hours for a 24 hour composite sample from time of last aliquot.. Bioassay tests must be started within 36 hours after termination of the 24 hour composite sample collection. Bioassay of effluent sampling may be coordinated with other permit sampling requirements as appropriate to avoid duplication.

(2) Chemical analysis must accompany each effluent sample taken for bioassay test, especially the sample taken for the repeat or confirmation test as outlined in section f.3. below. The analysis detailed under Part I.A. should be conducted

for the effluent sample. Chemical analysis must comply with approved EPA test methods.

d. Testing Frequency and Duration

The chronic toxicity test specified in section b. above shall be conducted at least once every six months for the duration of the permit. After four tests have been completed, the permittee may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent with IDEM's concurrence. In the absence of toxicity with either species in the monthly testing for four (4) months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past.

If toxicity is demonstrated as defined under section f., the permittee is required to conduct a toxicity reduction evaluation (TRE) as specified in Section 2.

e. Reporting

(1) Results shall be reported according to EPA 821-R-02-013, October 2002, Section 10 (Report Preparation). Two copies of the completed report for each test shall be submitted to the Compliance Evaluation Section, Office of Water Quality of the IDEM no later than sixty days after completion of the test.

(2) For quality control, the report shall include the results of appropriate standard reference toxic pollutant tests for chronic endpoints and historical reference toxic pollutant data with mean values and appropriate ranges for the respective test species Pimephales promelas and *Ceriodaphnia dubia*. Biomonitoring reports must also include copies of Chain-of-Custody Records and Laboratory raw data sheets.

(3) Statistical procedures used to analyze and interpret toxicity data including critical values of significance used to evaluate each point of toxicity should be described and included as part of the biomonitoring report.

f. Demonstration of Toxicity

(1) Acute toxicity will be demonstrated if the effluent is observed to have exceeded 11.0 TU_a (acute toxic units) based on 100% effluent for the test organism in 48 and 96 hours for *Ceriodaphnia dubia* or *Pimephales promelas*, respectively.

(2) Chronic toxicity will be demonstrated if the effluent is observed to have exceeded 37.0 TU_c (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas.*

(3) If toxicity is found in any of the tests as specified above, a confirmation toxicity test using the specified methodology and same test species shall be conducted within two weeks of the completion of the failed test to confirm results. During the sampling for any confirmation test the permittee shall also collect and preserve sufficient effluent samples for sue in any Toxicity Identification Evaluation (TIE) and/or Toxicity Reduction Evaluation (TRE), if necessary. If any two (2) consecutive tests, including any and all confirmation tests, indicate the presence of toxicity, the permittee must begin the implementation of a Toxicity Reduction Evaluation (TRE) as described below. The whole effluent toxicity tests required above may be suspended (upon approval from IDEM) while the TRE/TIE are being conducted.

g. Definitions

(1) TU_c is defined as 100/NOEC or $100/IC_{25}$, where the NOEC or IC_{25} are expressed as a percent effluent in the test medium.

(2) TU_a is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

(3) "Inhibition concentration 25" or "IC_{25}" means the toxicant (effluent) concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant (effluent) that would cause a

twenty-five percent (25%) reduction in mean young per female or in growth for the test population.

(4) "No observed effect concentration" or "NOEC" is the highest concentration of toxicant (effluent) to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms, that is, the highest concentration of toxicant (effluent) in which the values for the observed responses are not statistically significantly different from the controls.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE (including any post-TRE biomonitoring requirements) is only required if toxicity is demonstrated as defined in Part 1, section f. above.

a. Development of TRE Plan

Within 90 days of determination of toxicity, the permittee shall submit plans for an effluent toxicity reduction evaluation (TRE) to the Compliance Data Section, Office of Water Quality of the IDEM. The TRE plan shall include appropriate measures to characterize the causative toxicants and the variability associated with these compounds. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications list below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characteristics Procedures, Second Edition (EPA/600/6-91/003, February 1991.

Phase II Toxicity Identification Procedures (EPA 600/R-92/080), September 1993.

Phase III Toxicity Confirmation Procedures (EPA 600/R-92/081), September 1993.

(2) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I. EPA/600/6-91/005F, May 1992.

(3) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), (EPA/600/2-88/070), April 1989.

(4) Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatments Plants (EPA/833-B-99-022) August 1999.

b. Conduct the Plan

Within 30 days after the submission of the TRE plan to IDEM, the permittee must initiate an effluent TRE consistent with the TRE plan. Progress reports shall be submitted every 90 days to the Compliance Data Section, Office of Water Quality of the IDEM beginning 90 days after initiation of the TRE study.

c. Reporting

Within 90 days of the TRE study completion, the permittee shall submit to the Compliance Data Section, Office of Water Quality of the IDEM, the final study results and a schedule for reducing the toxicity to acceptable levels through control of the toxicant source or treatment of whole effluent.

d. Compliance Date

The permittee shall complete items a, b, and c from Section 2 above and reduce the toxicity to acceptable levels as soon as possible, but no later than three years after the date of determination of toxicity.

e. Post-TRE Biomonitoring Requirements (Only Required After Completion of a TRE)

After the TRE, the permittee shall conduct monthly toxicity tests with 2 or more species for a period of three months. Should three consecutive monthly tests demonstrate no toxicity, the permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent, (see section 1.d. above for more specifics on this topic), and conduct chronic tests quarterly for the duration of the permit.

If toxicity is demonstrated, as defined in paragraph 1.f. above, after the initial three month period, testing must revert to a TRE as described in Part 2 (TRE) above.

H. POLLUTION MINIMIZATION PROGRAM

Since this permit contains water quality-based effluent limits for Total Residual Chlorine, the permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ.

a. The goal of the pollutant minimization program shall be to maintain the effluent at or below the WQBEL. The pollutant minimization program shall include, but is not limited to, the following:

(1) Submit a control strategy designed to proceed toward the goal within 180 days of the effective date of this permit.

(2) Implementation of appropriate cost-effective control measures, consistent with the control strategy within 180 days of the effective date of this permit.

(3) Monitor as necessary to record the progress toward the goal. Potential sources of the pollutant shall be monitored on a semi-annual basis. Quarterly monitoring of the influent of the wastewater treatment system is also required. The permittee may request a reduction in this monitoring requirement after four quarters of monitoring data.

(4) Submit an annual status to the Commissioner at the address listed in Part I.C.3.g. to the attention of the Office of Water Quality, Compliance Data Section, by January 31 of each year that includes the following information:

(i) All minimization program monitoring results for the previous year.

(ii) A list of potential sources of the pollutant.

(iii) A summary of all actions taken to reduce or eliminate the identified sources of the pollutant.

(5) A pollution minimization program may include the submittal of pollution prevention strategies that use changes in production process technology, materials, processes, operations, or procedures to reduce or eliminate the source of the pollutant.

b. No pollution minimization program is required if the permittee demonstrates that the discharge of a pollutant with a WQBEL below the LOQ is reasonably expected to be in compliance with the WQBEL at the

point of discharge into the receiving water. This demonstration may include, but is not limited to, the following:

(1) Treatment information, including information derived from modeling the destruction of removal of the pollutant in the treatment process.

(2) Mass balance information.

(3) Fish tissue studies or other biological studies.

c. In determining appropriate cost-effective control measures to be implemented in a pollution minimization program, the following factors may be considered:

(1) Significance of sources.

(2) Economic and technical feasibility.

(3) Treatability.

I. DIFFUSER MONITORING REQUIREMENTS

1. Biological Survey

a. During the first, third and fifth year of the permit, BP Products North America shall conduct a survey of the aquatic life found within a 200 feet radius of the diffuser. The results of this survey shall be submitted to IDEM's Office of Water Management, Industrial NPDES Permits Section.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all conditions of this permit in accordance with 327 IAC 5-2-8(1). Any permit noncompliance constitutes a violation of the Clean Water Act, and the Environmental Management Act, and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

3. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must obtain and submit an application for renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if:

a. permission is requested in writing before such deadline;

b. IDEM grants permission to submit the application after the deadline; and

c. the application is received no later than the permit expiration date.

4. Permit Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date;

b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner;

c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility; and

d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

5. Permit Actions

In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or

c. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit, e.g., plant closure, termination of discharge by connection to a POTW, a change in state law that requires the reduction or elimination of the discharge, or information indicating that the permitted discharge poses a substantial threat to human health or welfare.

Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility, including Ineos and Praxair, that:

1. could significantly change the nature of, or increase the quantity of pollutants discharged; or
2. the commissioner may request to evaluate whether such cause exists.

In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

6. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or invasion of other private rights, any infringement of federal, state, or

local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

7. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other provisions or applications of the permit which can be given effect without the invalid provision or application.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

10. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Environmental Rules Board is liable for a civil penalty not to exceed twenty-five thousand dollars ($25,000) per day of any violation.

Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation performed under IC 13-14-2-2 commits a class C infraction.

Pursuant to IC 13-30-10-1.5(k), a person who willfully or recklessly violates any NPDES permit condition or filing requirement, any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-8, IC 13-18-9, IC 13-18-10, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, or who knowingly makes any false material statement,

representation, or certification in any NPDES form, notice, or report commits a Class C misdemeanor.

Pursuant to IC 13-30-10-1.5(l), an offense under IC 13-30-10-1.5(k) is a Class D felony if the offense results in damage to the environment that renders the environment unfit for human or vertebrate animal life. An offense under IC 13-30-10-1.5(k) is a Class C felony if the offense results in the death of another person.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(9), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10-1, provides that any person who knowingly or intentionally (a) destroys, alters, conceals, or falsely certifies a record that is required to be maintained under the terms of a permit issued by the department; and may be used to determine the status of compliance, (b) renders inaccurate or inoperative a recording device or a monitoring device required to be maintained by a permit issued by the department, or (c) falsifies testing or monitoring data required by a permit issued by the department commits a Class B misdemeanor.

12. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

13. Wastewater treatment plant and certified operators

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7.

327 IAC 5-22-10.5(a) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(11), "responsible charge operator" means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(4), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

14. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

The notice and design summary shall be sent to the Office of Water Quality - Mail Code 65-42, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(7), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a point source, regulated facility, or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and

d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

16. New or Increased Discharge of Pollutants into an OSRW

This permit prohibits the permittee from undertaking any action that would result in the following:

a. A new or increased discharge of a bioaccumulative chemical of concern (BCC), other than mercury.

b. A new or increased discharge of mercury or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

(1) Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the permittee to do the following:

(i) Submit an antidegradation demonstration in accordance with 327 IAC 2-1.3-5; and

(ii) Implement or fund a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

(2) An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and

327 IAC 2-1.3-6 and the permittee implements or funds a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(8).

Neither 327 IAC 5-2-8(8), nor this provision, shall be construed to require the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(11):

a. Terms as defined in 327 IAC 5-2-8(11)(A):

(1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. The permittee may allow a bypass to occur that does not cause a violation of the effluent limitations in the permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.B.2.c., e, and f of this permit.

c. Bypasses, as defined in (a) above, are prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, as defined above;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submitted notices as required under Part II.B.2.e; or

(4) The condition under Part II.B.2.b above is met.

d. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

e. The permittee must provide the Commissioner with the following notice:

(1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

(2) The permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within 24 hours of becoming aware of the bypass noncompliance. The permittee must also provide a written report within five (5) days of the time the permittee becomes aware of the bypass event. The written report must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the cause of noncompliance has not been corrected, the

anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the bypass event. If a complete fax or email submittal is provided within 24 hours of the time that the permittee became aware of the unanticipated bypass event, then that report will satisfy both the oral and written reporting requirement. Emails should be sent to wwreports@idem.in.gov.

f. The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.c. The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(12):

a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.

c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:

(1) An upset occurred and the permittee has identified the specific cause(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permittee complied with any remedial measures required under Part II.A.2; and

(4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal. The discharge of pollutants in treated wastewater is allowed in compliance with the applicable effluent limitations in Part I. of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(10)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned alterations or additions to the facility. In this context, permit facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as outlined in 327 IAC 5-1.5.

b. The alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged. This notification applies to pollutants that are subject either to effluent limitations in Part I.A. or to notification requirements in Part II.C.10. of this permit. However, this requirement does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(9)and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Discharge Monitoring Reports", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(10)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge that is in noncompliance are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the non-complying circumstances;

c. Any upset that causes an exceedance of any effluent limitation in the permit;

d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants: Phenolics, Total Chromium and Hexavalent Chromium.

The permittee can make the oral reports by calling (317)232-8670 during regular business hours or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence.

The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively the permittee may submit a "Bypass/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 54215), whichever is appropriate, to IDEM at (317) 232-8637 or wwreports@idem.in.gov. If a complete fax or email submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the fax report will satisfy both the oral and written reporting requirements.

4. Other Noncompliance/Noncompliance Reporting

Pursuant to 327 IAC 5-2-8(10)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3;

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Emergency Repairs or Replacements to the Diffuser System

The permittee shall provide at least 10-day advance written notice to IDEM if it anticipates the need to discharge from Outfall 001 due to the need to perform emergency repairs or replacements to the diffuser system to Outfall 005.

6. Other Information

Pursuant to 327 IAC 5-2-8(10)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

7. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(14):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a responsible corporate officer defined as a president, secretary, treasurer, any vice-president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation or the manager of one or more manufacturing, production or operating facilities employing more than two hundred fifty (250) persons or having the gross annual sales or expenditures exceeding twenty-five million dollars ($25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a Federal, State, or local government body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The authorization is submitted to the Commissioner.

c. Certification. Any person signing a document identified under Part II.C.7., shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in

accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering in the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

8. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

9. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(14) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

10. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur which would result in the discharge of any pollutant identified as toxic, pursuant to Section 307(a) of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."

(1) One hundred micrograms per liter (100µg/l);

(2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitophenol; and one milligram per liter (1mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7)); or

(4) A notification level established by the Commissioner on a case-by-case basis, either at his own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2)..

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 µg/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with Sec. 122.21(g)(7).

(4) A notification level established by the Commissioner on a case-by-case basis, either at his own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).

c. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant which was not reported in the permit application under 40 CFR 122.21(g)(9).

PART III
Additional Requirements

A. Thermal Effluent Requirements

Based on a favorable thermal demonstration study submitted by BP Products North America on June 19, 2012, the alternate thermal effluent limitations of 1.7 x 10^9 BTUs/Hour are being approved for continued use at Outfall 002.

B. Intake Structures

The initial 316(b) study for this facility was approved by the U.S. EPA in June of 1975. BP Whiting Business Unit (WBU) provided IDEM a description of the CWIS dated 29 August 2012 to conduct a best professional judgment (BPJ) evaluation of the CWIS to establish that the CWIS is currently equivalent to the best technology available (BTA).

Based on available information; IDEM has made a Best Technology Available (BTA) determination that the existing cooling water intake structures represent best technology available to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326) at this time.

This determination is based on Best Professional Judgment (BPJ) and will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

IDEM recognizes that for reassessment of its BTA determination during the next permit renewal, fish impingement and entrainment mortality minimization alternatives must be evaluated. The permittee shall comply with the following requirements:

1. At all times properly operate and maintain the cooling water intake structure equipment.

2. Submit to IDEM for review and approval a fish impingement and mortality minimization alternatives evaluation. At a minimum, the evaluation must include an assessment of installation of debris screens, consideration of a separate fish and debris return system and include time frames and cost analysis to implement these measures. This should include a characterization of the species of fish present in the area affected by the CWIS. The permittee shall submit the fish impingement and mortality minimization alternatives evaluation to IDEM within 24 months from the effective date of this permitfor review and approval. The

fish mortality minimization alternatives evaluation shall include the feasibility of installing a fish return to Lake Michigan.

3. If implementation of any operational change or facility modification is required by 316(b) or IDEM, the permittee shall present an implementation plan to IDEM for review and approval within eighteen (18) months of submission of the alternatives evaluation.

4. Inform IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

5. Submit all required reports to the IDEM, Office of Water Quality, Permits Branch, Industrial Section.

C. Intake Water Interruption

In the event that the intake water supply is interrupted and to prevent equipment damage or plant shutdown, firewater or recycle (treated process) water may be substituted for non-contact cooling purposes until the cause of the interruption can be expeditiously corrected. The permittee shall notify the IDEM, Office of Water Quality, Compliance Evaluation Section upon such occurrence and its expected duration.

D. Intake Flow Monitoring

Within 10 months of the effective date of this permit, the permittee shall begin taking 24 hour total flow measurements of the 1911 and 1940 CWISs on a daily basis and the 24-hour total flow of water being taken in at the pump house for the entire BP Products North America, Inc. Whiting Refinery. The permittee shall monitor the 1911 and 1940 CWISs and the water being taken into the pump house for a minimum of 12 months. The flow monitoring data shall be included in the fish impingement and mortality minimization alternatives evaluation.

Part IV
Streamlined Mercury Variance

Introduction
The permittee submitted an application for renewal of a streamlined mercury variance (SMV) on July 25, 2012 in accordance with the provisions of 327 IAC 5-3.5. The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. Based on a review of the SMV application, IDEM has determined the application to be complete as outlined in 327 IAC 5-3.5-4(e). Therefore, the SMV is being incorporated into the NPDES permit in accordance with 327 IAC 5-3.5-6.

A. Term of SMV

The SMV and the interim discharge limitations in Part I.A.1, will remain in effect until the NPDES permit expires under IC 13-14-8-9. Pursuant to IC 13-14-8-9(d), when the NPDES permit is extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

B. Annual Reports

The permittee shall submit an annual report to IDEM that describes the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report must also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP may be submitted as part of the annual report. Submittal of the annual report will be due on April 1st of each year. Annual Reports should be submitted to the Office of Water Quality, Mail Code 65-42, Industrial Permits Section, 100 North Senate Avenue, Indianapolis, Indiana 46204 2251.

C. SMV Renewal

As authorized under 327 IAC 5-3.5-7(a)(1), the permittee may apply for the renewal of an SMV at any time not less than180 days prior to the expiration of the NPDES permit. In accordance with 327 IAC 5-3.5-7(c), an application for renewal of the SMV must contain the following:

- All information required for an initial SMV application under 327 IAC 5-3.5-4, including revisions to the PMPP, if applicable.
- A report on implementation of each provision of the PMPP.
- An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the

NPDES permit for the two (2) year period prior to the SMV renewal application.

- A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the department according to 327 IAC 5-3.5-8(b) based on the most recent two (2) years of representative sampling information from the facility.

Renewal of the SMV is subject to a demonstration showing that PMPP implementation has achieved progress toward the goal of reducing mercury from the discharge.

D. Pollutant Minimization Program Plan (PMPP) and Interim Effluent Limit

The PMPP is a requirement of the SMV application and is defined in 327 IAC 5-3.5-3(4) as the plan for development and implementation of Pollutant Minimization Program (PMP). The PMPP is defined in 327 IAC 5-3.5-3(3) as the program developed by an SMV applicant to identify and minimize the discharge of mercury into the environment. PMPP requirements (including the enforceable parts of the PMPP) are outlined in 327 IAC 5-3.5-9. In accordance with 327 IAC 5-3.5-6, the permittee's PMPP is appended with this Attachment.

The following PMPP developed by BP Products North America, LLC in accordance with 327 IAC 5-3.5-9 of the Streamlined Mercury Variance Rule is hereby incorporated into this permit as follows:

1. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will perform an assessment of the mercury content of the sediment in the main process sewer legs that are part of the current sewer cleaning program.

2. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will complete an assessment of identified process unit wastewater discharges from sources within the refinery that may contain mercury at detection levels utilizing process knowledge, previous analysis or with new analysis if warranted.

3. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will develop a prioritized schedule for the cleaning of the sewers incorporating any significant impacts found from the results of the sewer system characterization study. The sediment and mercury removal progress will be reported in the annual reports.

4. Within 36 months from the effective date of the permit modification to incorporate the SMV requirements (March 1, 2015), BP will complete the detailed inventory list of process chemicals or additives containing mercury, equipment containing mercury and process discharges that contain mercury

5. Within 36 months from the effective date of the permit modification to incorporate the SMV requirements (March 1, 2015), BP will develop a procedure utilizing a ranking method to identify the high-risk equipment and process chemicals for mercury exposure and alternatives that are feasible for their replacement. Then mercury containing chemicals and equipment will be replaced or substituted with chemicals or equipment containing less mercury or no mercury.

E. Evaluation of Wastewater Treatment Technologies for Mercury Removal

By March 1, 2015, BP will complete a study and submit a report on technologies using ultra filtration and filtration with and without chemical additives (precipitants) for removing mercury from wastewater discharged from the Whiting Refinery. The study will evaluate the reliability, effectiveness, technical feasibility and estimated costs of each of the technologies evaluated, and also evaluate the estimated construction and operation timing requirements for each of the technologies evaluated. To continue the technology development work that was started under the Purdue-Argonne study, BP shall conduct further study and pilot testing that will include the following activities:

1. An evaluation at the Whiting Refinery of ultra filtration technology (using GE ZeeWeed® Technology 0.04 μm pore size and made up of PVDF or an equivalent) for removing mercury from the Whiting Refinery's wastewater, utilizing protocols and methods similar to those employed by Purdue/Argonne. BP will conduct a one year long pilot-scale evaluation beginning in August 2013 to accomplish the following:
    - Determine optimum flux rate, percent recovery, and backwash frequency.
    - Quantify the effect of precipitant addition before ultra filtration on mercury removal
    - Determine the reliability and effectiveness of ultra filtration for removing mercury from the wastewater.

    BP will sample influent and permeate three times per week for mercury (total and dissolved). Dissolved mercury sampling of the permeate will be conducted for the first 10 weeks only.

2. An evaluation at the Whiting Refinery of filtration technology (using the existing final filters, with and without chemical additives [precipitants]) for removing mercury from the Whiting Refinery's wastewater. BP already has conducted 3 seasonal periods of sampling, and will conduct a fourth period of sampling for the final filters without

chemical additives (precipitants) by Summer 2014. For the fourth sampling period, BP will conduct six sampling events for mercury (total and dissolved) to accomplish the following:

- Quantify mercury removal.
- Conduct filter media sampling to assess and quantify mercury accumulation within the filters.
- Determine the reliability and effectiveness of filtration without chemical additives (precipitants) for removing mercury from the wastewater.

BP will conduct sampling for the final filters with chemical additives (precipitants) in 2014. BP will conduct six sampling events for mercury (total and dissolved) for each of two precipitants to accomplish the following:

- Quantify the effect of precipitant addition before the final filters on mercury removal.
- Conduct filter media sampling to assess and quantify mercury accumulation within the filters.
- Determine the reliability and effectiveness of filtration with chemical additives (precipitants) for removing mercury from wastewater.

3. An evaluation of the options for handling/treating of the ultra filtration reject and final filter backwash streams associated with the treatment options evaluated in accordance with E.1 and E.2. BP initially will conduct bench scale assessments of the following handling/treatment methods for the ultra filtration reject:
   - Dissolved air flotation
   - Activated sludge
   - Ultra filtration
   - Evaporation

   BP will conduct bench scale assessments of the above options for the final filter backwash, unless it is determined from the ultra filtration reject testing that an option is not technically feasible. BP also will consider the Argonne ferric co-precipitation results, scaling issues, and current full-scale operations in evaluating options for treating/handling the ultra filtration reject and final filter backwash.

4. BP will conduct composite sampling for comparison with grab samples to assess the variability of mercury in the wastewater. BP will collect at least three composite samples for mercury (total and dissolved) to compare with grab samples collected in the same period of time.

5. The evaluations, which will be performed under varying weather and process conditions, will be used to assess the reliability, effectiveness, technical feasibility, and environmental impacts of each of the treatment technologies for reducing mercury in the discharge. BP will determine the mercury removal capability of each technology configuration evaluated (the mercury concentration and loading that was achieved in the effluent under the various operating conditions). BP will identify the optimal

configuration for mercury removal capability for each technology, including the handling/treatment method for ultra filtration reject or final filter backwash.

6. For each of the treatment technologies evaluated, BP will estimate the timing requirements that would be needed for full-scale implementation and operation, including estimated timing for engineering, procurement, construction and commissioning. BP will evaluate the comparative complexity of implementation as identified by differences in implementation timeframes among the technologies evaluated.

7. For each of the treatment technologies evaluated, BP will develop estimates of the costs for full-scale installation and operation of the technology at the Whiting Refinery. The estimates will include estimates of the costs for installing the technology, annual costs for operating and maintaining the technology; and annual costs associated with handling ultra filtration reject or final filter backwash streams. BP will use the cost information in conjunction with the information developed in performing the evaluations described in E.1 – E.5 to evaluate the cost-effectiveness of the treatment technologies evaluated.

8. The report, which BP will submit to IDEM following completion of the study but in no event later than March 1, 2015, shall include an executive summary; a detailed summary of the information that BP generated in performing the evaluations and schedule development described above; all of the monitoring data that BP obtained in the course of the study and pilot testing; and conclusions for each technology evaluated as to (1) whether the technology is capable of reducing mercury from wastewater at the Whiting Refinery and if so, the mercury concentration levels that could be consistently achieved in discharges from the Whiting Refinery following full scale construction and implementation of the technology; (2) the costs of each technology evaluated; and (3) any significant environmental or other reasons why one or more technologies might be preferable to others.

F. Evaluation of Mercury Removal Efficiency of the Brine Treatment Unit

BP will conduct an evaluation of the mercury removal performance of the Brine Treatment Unit. BP will conduct monthly sampling for one year after the Brine Treatment Unit becomes fully operational. BP will sample the influent and effluent at the Brine Treatment Unit for mercury (total and dissolved) to accomplish the following:

- Determine the reliability and effectiveness of the Brine Treatment Unit for removing total and dissolved mercury from the wastewater.

  BP will submit the results of this evaluation within six months after the sampling program is completed.

G. Evaluation of Filter Sizes on Mercury Removal

BP will filter clarifier and final filter effluent through different-sized filter paper to determine the resulting TSS and total mercury levels. The results of this testing will be considered along with other factors, such as TSS removal and operability, that BP uses to evaluate selection of filter media.

H. Evaluation of Benzo(a)pyrene, Vanadium, and Arsenic Removal Efficiency of the Brine Treatment Unit

BP will conduct an evaluation of the removal performance of the Brine Treatment Unit. BP will conduct monthly sampling for one year after the Brine Treatment Unit becomes fully operational. BP will sample the influent and effluent at the Brine Treatment Unit for Benzo(a)pyrene, Arsenic and Vanadium to accomplish the following:

- Determine the reliability and effectiveness of the Brine Treatment Unit for removing the above pollutants from the wastewater. BP will submit the results of this evaluation within six months after the sampling program is completed.

National Pollutant Discharge Elimination System

FACT SHEET for

BP Products North America Inc.

September 25, 2013

Indiana Department of Environmental Management

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Permittee:	BP Products North America Inc. Whiting Refinery 2815 Indianapolis, Blvd. Whiting, Indiana
Existing Permit Information:	Permit Number: IN0000108 Expiration Date: 7/31/2012
Source Contact:	Ms. Rose Herrera 219/473-3393
Source Location:	BP Products North America Inc. Whiting Refinery 2815 Indianapolis, Blvd. Whiting, Indiana 46394 Lake County
Receiving Waters:	Lake Michigan and the Lake George Branch of the Indiana Harbor Ship Canal
Proposed Action:	Renew of the NPDES Permit that expired on July 31, 2012 Date Application Received: February 6, 2012
Source Category	NPDES Major – Industrial
Permit Writer:	Mr. Steve Roush 317/233-5747 or sroush@idem.in.gov

Table of Contents

1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from BP Products North America, Whiting Business Unit on February 6, 2012 to renew their NPDES permit No. IN0000108. This permit regulates the discharge of process wastewater, storm water and non-contact cooling water from Outfalls 002 and 005 at the Whiting, Indiana facility to Lake Michigan and the discharge of storm water through Outfalls 003 and 004 into the Lake George Branch of the Indiana Harbor Ship Canal.

A five (5) year permit is proposed in accordance with 327 IAC 5-2-6(a).

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.6, as well is Indiana Administrative Code (IAC) 327 Section 5, development of a Fact Sheet is required for NPDES permits. This document fulfills the requirements established in those regulations.

This Fact Sheet was prepared to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, and wasteload allocations to meet Indiana Water Quality Standards. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

2.0 FACILITY DESCRIPTION

2.1 General

BP Products North America Inc. owns and operates a petroleum refinery located on approximately 1,400 acres within the boundaries of Whiting, East Chicago, and Hammond, Indiana, near the southern tip of Lake Michigan. The refinery employs approximately 1,850 people and produces a variety of petroleum products, including gasoline of all grades, diesel fuel, heating fuel, jet fuel, asphalt, and petroleum coke. The refinery also produces petroleum intermediates.

BP Whiting discharges three types of wastewater: treated effluent; once-through non-contact cooling water; and storm water. First, the refinery discharges, as a long-term average, 15.7 million gallons per day (MGD) of treated effluent through Outfall 005 into Lake Michigan. The maximum monthly average is 19.9 MGD. The treated effluent originates from water used in or received by the plant, recovered groundwater, and most of the storm water from the site, all of which is treated in the refinery's wastewater treatment plant (WWTP) and discharged via a high rate multiport diffuser. Second, the refinery discharges, as a long-term average, 73.7 MGD of once-through non-contact cooling water through Outfall 002, also into Lake Michigan. Third, the refinery intermittently discharges the balance of its storm water through Outfalls 003 and 004 into the Lake George Branch of the Indiana Harbor Ship Canal.

During the term of the renewed permit, BP will continue the Whiting Refinery Modernization Project (WRMP), known (in part) in the existing permit as the Canadian Extra Heavy Crude Oil

(CXHO) project. Construction is currently underway and is anticipated for completion around the end of 2013.

OTHER PERMIT RENEWAL ITEMS

1. On August 23, 2007, BP Whiting committed to operating the Whiting refinery in compliance with the TSS and ammonia limitations contained in its 1990 NPDES permit, notwithstanding the revised limitations contained in the current permit, which were properly calculated under the effluent limitations guidelines set forth in 40 CFR 419.22(a), 419.23(a), and 419.24(a), and approved by IDEM in accordance with applicable antidegradation requirements. BP since has invested millions of dollars toward continued research and engineering to further reduce the levels of pollutants discharged from the facility, and remains committed to keeping TSS and ammonia loadings at or below the 1990 authorized levels. As a result, BP requests that IDEM revise the current TSS and ammonia loading limitations to reflect the values established in the 1990 permit.

2. BP Whiting requests the continuation of the Clean Water Act Section 316(a) variance as documented in Part III.A of the existing permit. Phase I of the Thermal Plume Study was completed on March 4, 2011. The Phase II Thermal Variance Study Plan was approved by IDEM July 8, 2011. IDEM received the application from BP on July 24, 2012 for renewal of the existing alternate thermal effluent limits.

3. BP Whiting requests that the zebra mussel control program in place be continued. This program has been revised to incorporate year-round chlorination to control Zebra as well as Quagga mussels as described in the supplemental information at the end of this application.

4. BP Whiting requests the continuation of the alternate mixing zone for the Outfall 005 high rate multiport diffuser, including the application of a 37.1:1 mixing ratio for water quality based effluent limit (WQBEL) development. Per part I.H.1 of the existing permit, BP submitted the diffuser operation and maintenance plan to IDEM (current revision = 8/22/2011).

5. BP requests continuation of the 316(b) study approval given in Part III.B and Part I.F.4 of the existing permit.

6. BP requests that IDEM update descriptions to account for existing sources of offsite wastewater. Examples are Praxair, Ineos, and Griffith LPG Cavern storage dewatering. In addition, all on-site remediation groundwater is sent to the wastewater treatment facility. Further, consistent with 40 CFR 437.1 (b)(2)(b), offsite facilities (both BP and non-BP owned) such as pipelines and terminals may produce other wastewater from activities including tank inspections, hydro testing of equipment, dewatering operations, equipment clean out from maintenance and turnaround activities, dewatering of equipment, and other wastewater, which may be sent to the BP wastewater treatment plant for oil recovery and wastewater treatment.

7. BP does not manufacture pesticides on site. However, pesticides are occasionally applied to refinery areas by a qualified contractor in accordance with FIFRA regulations. Outfall 005 effluent sampling resulted in no detections of pesticide constituents required in USEPA Form 2C.

8. BP requests the continued application of a Streamlined Mercury Variance (SMV) in the renewed permit in accordance with the SMV application submitted to IDEM on 11/20/2010. The

resulting draft permit modification to incorporate a SMV went to public notice on Nov 14, 2011. An update of the SMV effluent mercury database is provided in Table ES-1 of this application. These data are presented in lieu of mercury results reported in Form 2C Section V.C for Outfall 005.

9. BP is currently engaged in a 5-year compliance schedule for vanadium effluent limitations at Outfall 005 per Part I.E.2 of the existing permit. For the renewed permit, BP requests that IDEM incorporate the most recent available updated vanadium data to revise Tier II water quality criteria.

10. BP requests the biological survey frequency given in Part I.H.2 of the existing permit be reduced from annually to the first, third, and fifth year of the renewed permit. The frequency may be increased if findings suggest significant changes in monitored biological/chemical characteristics. Annual biological surveys were conducted under the terms of the existing permit in July 2009 (pre-diffuser), August 2010 (post-diffuser), and July 2011. The data have shown that there have been no significant changes (relative to historic lake conditions) to the biotic community from year to year. The reduced monitoring frequency will be sufficient to identify trends in biological community structure and composition in future years.

11. BP requests that Outfall 005 sampling type for sulfide be revised to "grab" instead of the current "composite" requirement, such that preservation of the sample can be done in accordance with 40 CFR 136 Table E.

12. BP requests clarification on the definition of the monitoring frequency of "weekly" in Part I.A for the renewed permit. BP requests this interpretation be a working week of 7 days for Outfalls 005/002. For Outfalls 003/004 BP defines Monday through Sunday as the work week and Monday as the first day of the week.

13. BP requests that, in the renewed permit, IDEM change the language in the Outfall 003 and Outfall 004 descriptions from "non-process stormwater" to "stormwater associated with industrial activity"; from the J&L, Lake George, and tank dike, areas of the refinery to maintain consistency with 40 CFR 122.26(b)(14);definition.

14. BP requests that: the description of authorized wastewater -sources to Outfall 005- be revised to acknowledge that the WWTP receives and-treats-wastewater from normal refinery operations including maintenance, turnaround activities, excavation, dewatering, construction activities, tank cleaning, and temporary flows from upsets or downtime. Such temporary flows would include, as necessary, the retreatment ofoff-spec WWTP effluent that has been temporarily stored in alternate storage locations via the firewater recycle system rather than discharged to Lake Michigan. The temporarily stored off-spec WWTP effluent would then be rerouted back through the WWTP for additional treatment and final discharge. In addition, it should be noted that the process sewers are part of the wastewater collection system. BP also treats a substantial amount of stormwater associated with industrial activity through this system.

BP Products North America, LLC is classified under Standard Industrial Classification (SIC) Code 2911 Petroleum Refinery. The facility manufactures a variety of petroleum products, including gasoline of all grades, diesel fuel, heating fuel, jet fuel, asphalt, and petroleum coke. The refinery also produces petroleum intermediates.

A map showing the location of Outfalls 002 and 005 has been included as Figure 1.

Figure 1: Wastewater Treatment Facility Location

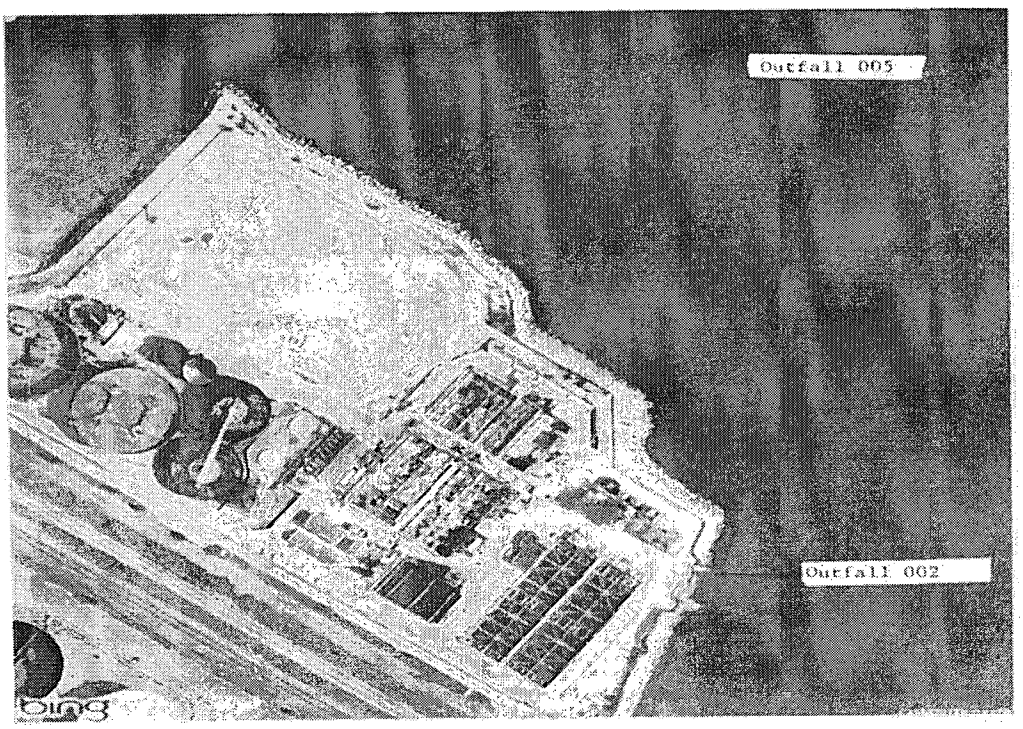
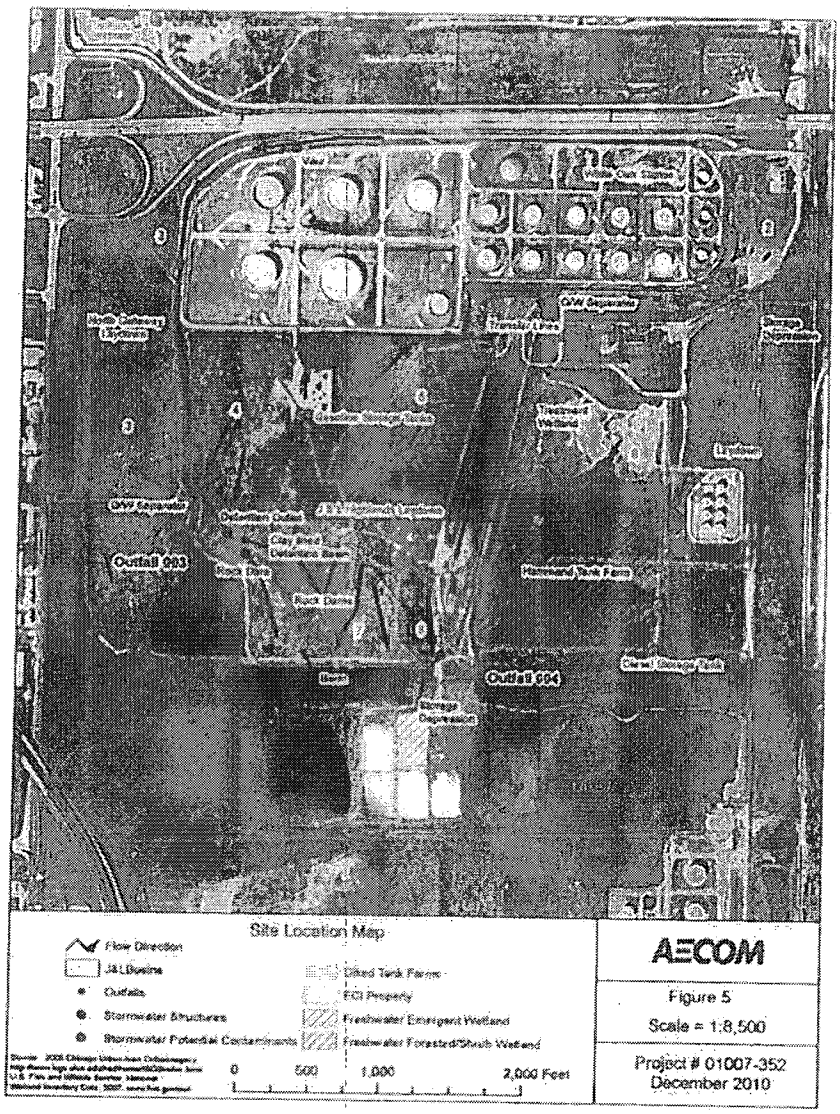


Figure 2: Storm Water Associated with Industrial Activity (Outfalls 003 and 004)

CHMENT 9A J & L Storm Water Map



Current Discharge to Outfalls 003 and 004 - J&L and Lake George Area

This section describes the area currently contributing to Outfalls 003 and 004, referred to as the J&L and Lake George Area.

The J&L and Lake George Area is located almost entirely in the city of Hammond, with a small portion in the northwest corner located in East Chicago, Indiana. The property is bordered on the north by 129th Street, the Indiana Harbor Ship Canal (south), Calumet Avenue (west), and B&O Railroad right of way (east). Contributing drainage areas include the Lake George Tank Field (59.0 acres), the rest of Lake George outside the tank field (66.6 acres), the J&L Tank Field (90.9 acres), and the rest of J&L outside the tank field (230.8 acres). Whiting Business Unit document E2001 is the Whiting Industrial Storm Water Pollution Prevention Plan (SWPPP) applicable to the J&L Area. The SWPPP identifies potential sources of pollution, describes practices and measures for reducing pollution potential, and assures compliance with the permit.

Land Cover

Approximately 15% of the J&L and Lake George Area consist of impervious refinery structures such as piping and tanks, trailers, and roadways. Natural vegetation occurs in a large section of the J&L and Lake George Area and intermittent landscaped vegetation exists around streets and some buildings. As a result, most of the drainage area routed to Outfalls 003 and 004 is vegetated.

Stormwater Drainage and Outfall Descriptions

Stormwater in the J&L Tank Field can be retained in tank dikes for infiltration and evaporation, or removed via vacuum trucks or manual pumping to the refinery process sewer system if an oil sheen is present. If the stormwater has no visible oil sheen, it can be routed to Outfalls 003 or 004 either manually by vacuum trucks or by a pumping system. Stormwater outside of the tank dikes is either collected in low lying areas for infiltration, or overflows to the west ditch and into the Turning Basin through Outfall 003, or overflows to the East Ditch to the Indiana Harbor Ship Canal through Outfall 004. Outfalls 003 and 004 are fed by vegetated drainage ditches controlled by sluice gates. Additionally, a limited amount of stormwater enters directly into the Indiana Harbor Ship Canal from the south end of the highlands (high ground south of J&L tank fields) during heavy runoff events as overland sheet flow. On the west side of J&L Tank Field, a small amount of runoff enters the Calumet Avenue Drain which drains to the Indiana Harbor Ship Canal.

Stormwater Control Features

Outfalls 003 and 004 currently discharge stormwater runoff from the southwest quadrant of the refinery. The area identified as West Ditch Drainage Area discharges stormwater through Outfall 003 to the Indiana Harbor Ship Canal to the south. The area identified as East Ditch Drainage Basin discharges stormwater through Outfall 004 to the Indiana Harbor Ship Canal. The West Ditch (to Outfall 003) and the East Ditch (to Outfall 004) are oriented from north to south on either side of the J&L Site.

Stormwater from Lake George Tank Field discharges via an underground pipe beneath Cline Avenue to the East Ditch and Outfall 003. Outfalls 003 and 004 are controlled by manually operated sluice gates. These outfalls are inspected daily for any water quality concerns. The sluice gates are opened once per week (usually Monday morning) only after inspection and verification that the discharge is within compliance limits.

Industrial Activities

The northern section of J&L and Lake George Area is a crude oil tank field, whereas the southern section is a multiuse area that is fairly undeveloped and used for material laydown and storage. Lake George Tank Field also contains paved areas for trailers and parking and includes routing of stormwater from the Calumet Avenue warehouse area.

The West Ditch Drainage Basin (Outfall 003) is covered by medium vegetation. This area also contains over 6,400 linear feet of roadway (paved). The J&L Tank Field consists of product storage areas bound on the north by a public roadway, on the east by railroad property, on the south by the Lake George Branch of the Indiana Harbor Ship Canal, and on the west by a public roadway. All tank dikes are typically void of vegetation cover. Vehicle access through and around the areas is via a series of asphalt paved and gravel roads situated on top of the dike walls. The west half of the J&L Tank Field contains 6 large tanks used primarily for the bulk storage of crude oil. Each tank has secondary containment in the form of tank dike. A channel, which originates north of the J&L Tank Field, and runs about 6,180 feet, is approximately 6 feet wide at the bottom and averages approximately 5 feet in depth. There are two flow control gates for regulating stormwater flows. The control measures for this basin include sediment rock check dams, detention basins, diversion channels, control gates, and sediment control structures throughout the area.

The East Ditch Drainage Basin (Outfall 004) is covered by medium vegetation with approximately 1.5 acres covered with heavy vegetation. There are approximately 8,600 linear feet of roads in this drainage basin segment. This area also includes the abandoned Liquid Petroleum Gas (LPG) loading racks and the associated remnant or abandoned rail car access, and lay down areas. A series of drainage channels approximately 3,950 feet in length collect runoff and route it to the East Ditch. Soil erosion controls consist of a detention pond, sediment traps, and slope roughening and diversion dikes.

Stormwater Run-on

Stormwater run-on to the J&L Tank Field occurs from Calumet Avenue and from the B&O Railroad. Calumet Avenue runs the entire western length and its associated drainage ditch connects the Indiana Harbor Ship Canal with Lake George to the north. The J&L Tank Field receives water from Calumet Avenue pavement, 126th Street ditch, Cline Avenue ditches, and properties north of 129th Street including the Lost Marsh Golf Course. This stormwater flows through the Calumet Avenue ditch on the west side of the property and drains directly to the Indiana Harbor Ship Canal. This run-on will not mix with stormwater from industrial activity because there is no hydraulic connection. At the northeast corner of the property, some stormwater enters the J&L property from the B&O Railroad. However, this run-on is minimal and stays without leaving the property.

Non-Stormwater Discharges

Non-stormwater discharges within the J&L and Lake George Area to Outfalls 003 and 004 may include the following:

- Fire Training or system flushing;
- Potable water sources including water line flushing;
- Uncontaminated ground water;
- Routine exterior building wash down that does not use detergents or other compounds;
- Pavement wash waters where spills or leaks of toxic or hazardous material have not occurred and where detergents are not used;
- Air conditioning condensates; and
- Equipment hydro-testing using fire water.

Specific fire training activities include health, safety, security, and environment (HSSE) training and fire brigade training at the J&L training area, and fire hydrant flushing. HSSE training occurs from June to October, four days per week, with a flow rate of approximately 125 gallons per minute (GPM). Fire brigade training sessions occur once in May, June, and July and use approximately 60,000 gallons per session. This water is retained by natural depressions, infiltrates to ground water, or a small amount drains to a sump pump east of Tank 3915 where it goes to the refinery process sewer.

Additionally, this area is under a forced agreement remediation project with Indiana Department of Environmental Management (IDEM) where multiple well point systems are in operation for ground water remediation. As contaminants are pumped out of the ground there is possibility for some stormwater contamination from condensation or equipment rain wash-off.

Management of Stormwater Under Agreed Order

In 1995, Amoco Oil Company Whiting Refinery voluntarily entered into an agreed order, Cause Number H-11187, with the IDEM. This order was for the mutual purpose of mitigating any threat to human health and the environment, to perform a Resource Conservation and Recovery Act (RCRA) Facility Investigation, and perform a Corrective Measures study to identify and evaluate alternatives for the corrective action necessary to prevent or mitigate any migration of releases of hazardous waste. This order includes a work plan for the J&L site. This work plan identified 27 pits that were generally cleaned up in 1977 and interim measures were put in place to prevent and abate off-site migration of contaminants. It is currently proposed to remove the requirements of this Agreed order for the J&L site and maintain stormwater compliance under the NPDES permit Industrial SWPPP for this area.

2.2 Outfall Locations

OUTFALL 002	Latitude:	41° 40' 36"
	Longitude:	87° 28' 16"
OUTFALL 003	Latitude:	41° 38' 59"
	Longitude:	87° 30' 17"
OUTFALL 004	Latitude:	41° 38' 48"
	Longitude:	87° 29' 51"
OUTFALL 005	Latitude:	41° 41' 03"
	Longitude:	87° 28' 05"

2.3 Wastewater Treatment

Outfall 005

The WWTP that discharges through Outfall 005 receives and treats wastewater from normal refinery operations including maintenance, turnaround activities, excavation, dewatering, construction activities, tank cleaning, and temporary flows from upsets or downtime. Such temporary flows include, as necessary, the retreatment of off-spec WWTP effluent that has been temporarily stored in alternate storage locations via the firewater recycle system rather than discharged to Lake Michigan. The temporarily stored off-spec WWTP effluent would then be rerouted back through the WWTP for additional treatment and final discharge. In addition, it should be noted that the process sewers are part of the wastewater collection system.

Over the past five years, BP Whiting has discharged a long term average of 15.7 million gallons per day (MGD) and a maximum monthly average of 19.9 MGD of treated process wastewater from water used in the refinery, recovered ground water and most of the storm water from the site through their wastewater treatment plant through the diffuser located in Lake Michigan to Outfall 005. The wastewater treatment plant is an advanced biological treatment system which occupies twenty acres and includes a oil/water separators, dissolved air flotation, an activated sludge plant, clarifier and final filtering processes. BP also accepts and treats wastewater at the wastewater treatment plant from Ineos PIB Unit (formerly BP Chemical Plant). All on-site remediation ground water is sent to the wastewater treatment plant. Off site BP Facilities such as pipelines and terminals may produce wastewater from tank inspections, from hydro testing of equipment, from dewatering operations of equipment for maintenance, or other wastewater produced from normal operations. The BP Products Refinery facility will treat this wastewater and recover any hydrocarbons as needed. A significant portion of industrial activity storm water is directed through the treatment system. BP has incorporated equilzation basins to capture storm water associated with industrial activity and then directs this water through the treatment plant prior to discharge through Outfall 005.

Whiting Clean Energy

Whiting Clean Energy supplies BP with steam and electricity. The closed cycle cooling towers operated by Whiting Clean Energy have a blowdown that has now been permitted to discharge to the City of Whiting and not to BP.

Ineos

As of 2012 the Ineos plant permanently shutdown, and only stormwater drains directly to the BP WWTP. Praxair, Ineos, and Griffith LPG Cavern storage dewatering, all are sending similar wastewaters to BP to be treated and since these are similar to the wastewaters BP treats they are not subject to the CWT regulations. In addition, all on site remediation groundwater is sent to the wastewater treatment facility. Further, consistent with 40 CFR 437.1 (b)(2)(b), offsite facilities (both BP and non-BP owned) such as pipelines and terminals may produce other wastewater from activities including tank inspections, hydro testing of equipment, dewatering operations, equipment clean out from maintenance and turnaround activities, dewatering of equipment, and other wastewater, which may be sent to the BP wastewater treatment plant for oil recovery and wastewater treatment.

A review of data submitted for the Praxair condensate water indicated BTEX compounds which are compatible with the wastes BP treats. 40 CFR 437.1(b)(2)(b) states that "demonstrates that the off-site wastes are of similar nature and the treatment of such wastes are compatible with the treatment of non-CWT wastes generated and treated" .

Outfall 002

Over the past five years, BP Whiting has discharged a long term average of 73.7 MGD and a maximum monthly average of 86.2 MGD of non-contact cooling water to Outfall 002. The flow values for Outfall 002 were submitted by BP in the February, 2012 NPDES Permit Renewal Application Update.

Outfalls 003 and 004

BP Whiting discharges storm water associated with industrial activity from an area on the South side of the BP Whiting property through Outfalls 003 and 004 using a manually controlled valve. When the level of water in the ditch is high, the water is released to the canal. The storm water is managed through the use of a Spill Prevention, Control and Countermeasure Plan, a storm water pollution prevention plan, a Facility Response Plan, and Agreed Order No. H-11187 which defined eight interim measures to be implemented at the J & L site in which Outfalls 003 and 004 are located.

Figure 3: Refinery Flow Diagram

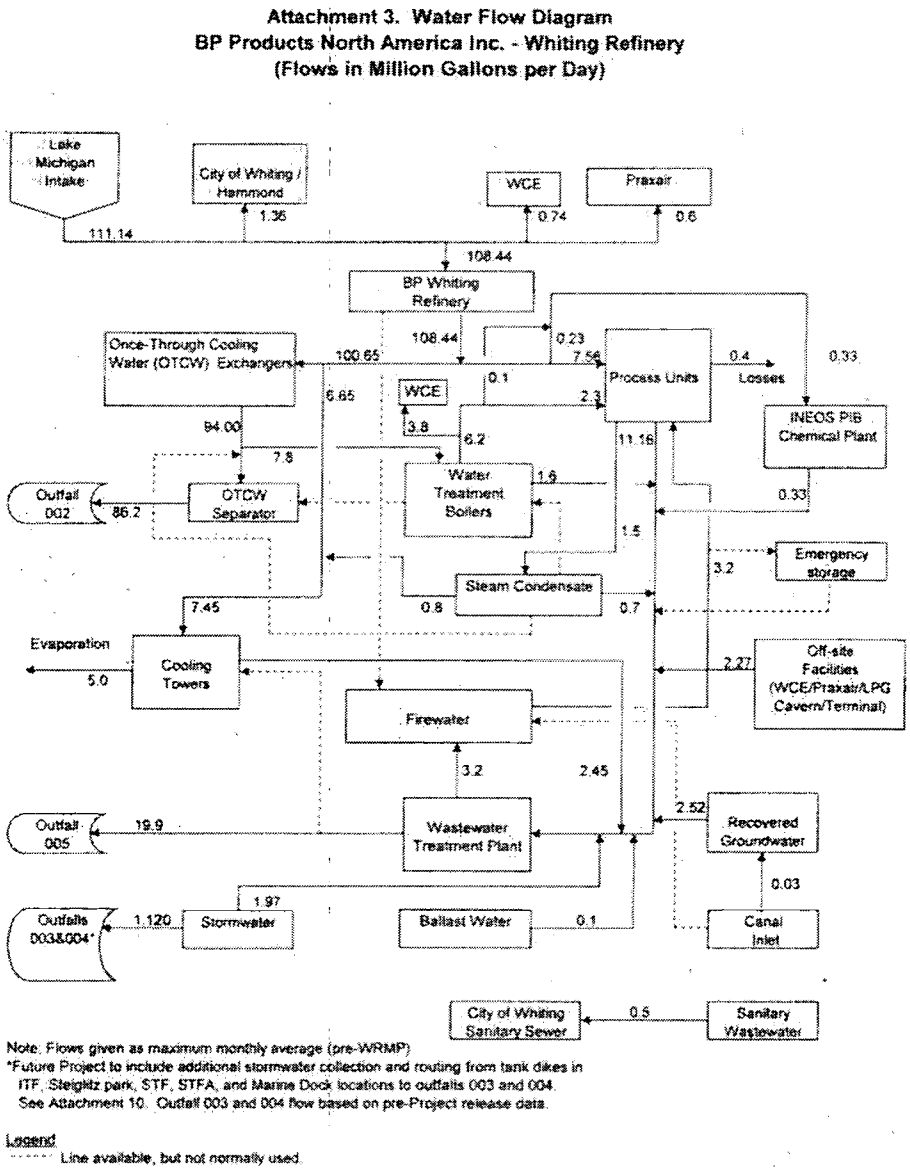
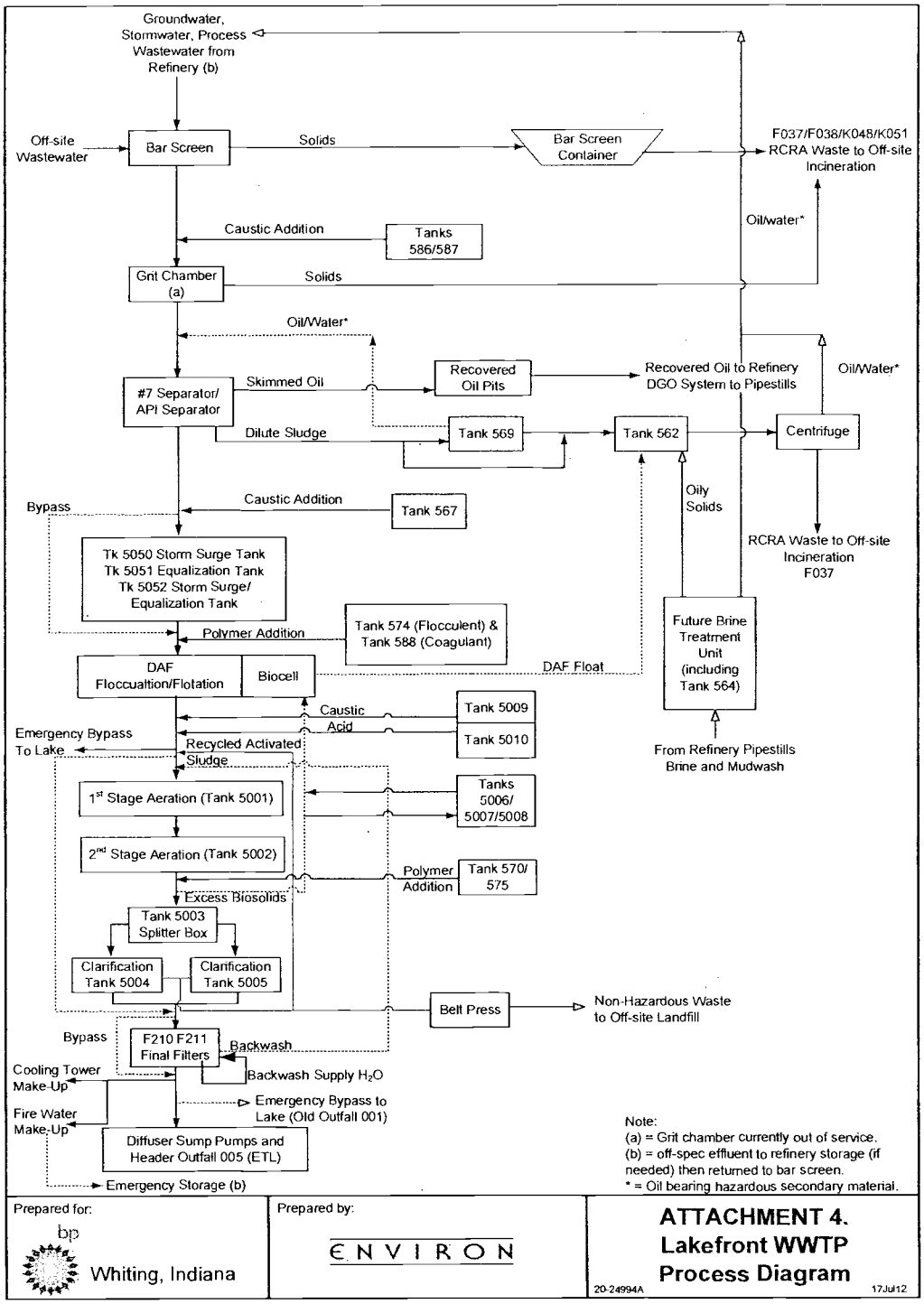


Figure 4: Lakefront WWTP Process Diagram



The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22-5. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7. Based upon the information provided, IDEM has retained the permittee a Class D industrial wastewater treatment plant classification.

2.4 Changes in Operation

Refinery Process Units

New - #2 Coker: The existing coker (No. 11 B Pipe Still) will be shut down and replaced with a new coker (#2 Coker).

New - Enclosed Coke Handling System: The existing open coke yard will be shut down and replaced with a new enclosed coke handling system.

New - GOHT: A new Gas Oil Hydrotreating Unit (GOHT) will be installed to hydrotreat gas oil.

New - Cooling Towers: Two new cooling towers (Cooling Towers 7 & 8) will be installed to meet the cooling requirements for the WRMP.

New- Flares: Two new flare stacks will be installed in support of the WRMP.

Upgrade- No. 12 Pipestill: The existing No. 12 Pipestill (12PS) will be revamped to allow increased processing of heavy crude.

Upgrade - Sulfur Recovery Complex: Due to the higher sulfur content of the heavy crudes, additional lower sulfur fuels units will be installed.

Upgrade - Distillate Hydrotreating Unit: A new reactor and a new heater will be installed at the Distillate Hydrotreating Unit .

Upgrade - No. 11C Pipestill: Ultra-low NOx burners will be installed on the 11C PS Heater H-200 to reduce NOx emissions from this heater.

Upgrade - Aromatics Recovery Unit: Some minor modifications will be made at the ARU to process lighter feed.

Upgrade - No. 4 Ultraformer: Due to an increase in the naphtha feed rate to the existing 4UF, the front end reactor will be upgraded..

Upgrade - Existing Cooling Towers: High efficiency liquid drift eliminators will be installed on the existing Cooling Towers 2, 3, and 4 to reduce particulate emissions.

Upgrade - Distillate Desulfurization Unit: Some minor modifications will be made to the Distillate Desulfurization Unit (DDU).

Upgrade - Vapor Recovery Unit: Several modifications will be made to the VRU 300 to process a larger amount of lighter naphtha feed with the WRMP.

Upgrade- Fuel Gas System: As part of the WRMP, enhancements will be made to the refinery's fuel gas system to achieve a future potential total reduced sulfur (TRS) content.

Upgrade - Blending Oil Unit: Modifications will be made to the Blending Oil Unit heater.

Upgrade - Fluid Catalytic Cracking Unit 600: Several modifications will be made on the FCU 600 unit to accommodate an increase in throughput.

Upgrade - Propylene Concentration Unit: Modifications and additions will be made to the PCU to produce more RGP (refinery grade propylene) and minimize the production of PGP (polymer grade propylene).

Shutdowns - BP will permanently shut down and remove from service a number of units as a result of the installation of new units and the modification of certain existing units comprising WRMP. The following existing units will be permanently shut down as part of WRMP:

- No. 118 Coker Heaters H-101, 102, 103, and 104
- Existing Coke Handling System
- Beavon-Stretford Tail Gas Unit
- SBS Tail Gas Unit
- SBS Cooling Tower
- SRU Incinerator
- No. 12 PS Heaters H-2, H-1AS/1AN, H-1CN, H-18, H-1CX
- No. 4C Treating Plant
- No. 3 Ultraformer reformer section and heaters H-1, H-2 and F-7
- The 350 section of VRU 300
- No. 1 SPS Boilers

WWTP Units

New - Brine Treatment System: A new brine treatment system will be installed for treatment of the wastewater brine from the refinery's pipe still operations. The system is designed to separate the oily emulsified solids from the brine using new GLR micro-bubble technology. Chemistry is used to coagulate and flocculate the oil droplets to trap much of the solids into the oil phase. The GLR Gas Floatation Tanks (GFT) are designed to separate the oil (and consequently any solids entrained in the oil) and the water. The oil and solids that are created and separated by the brine treatment unit will be sent to the refinery solids handling system. The system will consist of four fixed-roof tanks to be located at the WWTP and two off-spec tanks which will be located in the refinery and equipped with external floating roofs.

New – Storm water/Equalization Tank: A new wastewater storage tank (TK-5052) with a capacity of 11,676,000 gallons and equipped with an external floating roof has been installed to provide additional storage volume for storm water surges and to provide additional equalization capacity. Extra surge capacity allows the WWTP to better respond to high storm water flows such as those experienced during heavy rain events.
The extra equalization capacity allows a better response to process upsets that may

temporarily increase the TSS or total nitrogen in the influent flow to the WWTP. The new tank TK-5052 is equipped with foam chambers, a guided wave radar level transmitter, an oil skimmer, an automatic sample collection system, and a jet mixing system to prevent solids accumulation. Start up was completed December 2009 with a corresponding notice sent to IDEM for additional WWTP equipment installation.

New - Final Filters: The existing final filters at the WWTP have been replaced with new final filters with a capacity of 32.1 MGD. The new Final Filters are of the gravity mono/multimedia type, with two clusters of four filter cells each, totaling eight filter cells. Influent flow is gravity fed from the clarifiers and splits equally between the two filter clusters. Flow to each of the cells within a cluster is distributed evenly by means of adjustable inlet weirs. Flow from the bottom of each cell is directed to a dedicated effluent chamber with adjustable weirs. The water flows over the adjustable weirs to a common transfer pit. Filtered water from the common transfer pit is tied into the existing 42" effluent piping, and will flow to the interceptor box, and out to the lake via Outfall 005. During backwash operation, seven of the eight total cells continue to operate normally, with one cell being placed in backwash mode.

New/Upgrade - Dissolved Air Flotation (DAF): Under the proposed USEPA Consent Decree, BP will be required to complete construction and installation of a new DAF or DNF to replace the existing DAF unit by Dec 31, 2015

2.5 Facility Storm Water

The storm water from the refinery is routed through the wastewater treatment plant and discharged through Outfall 005. A new wastewater storage tank (TK-5052) with a capacity of 11,676,000 gallons and equipped with an external floating roof has been installed to provide additional storage volume for storm water surges and to provide additional equalization capacity.

BP Whiting discharges storm water associated with industrial activity from an area on the South side of the BP Whiting property through Outfalls 003 and 004. The storm water is managed through the use of a Spill Prevention, Control and Countermeasure Plan, a storm water pollution prevention plan, a Facility Response Plan, and Agreed Order No. H-11187 which defined eight interim measures to be implemented at the J & L site in which Outfalls 003 and 004 are located.

3.0 PERMIT HISTORY

3.1 Compliance history

The following violations have occurred over the past two years:

Outfall 004

pH limit of 9.0 was exceeded in January, 2010

Outfall 005

CBOD lbs/day daily maximum lbs/day limit was exceeded in April, 2011
Oil & Grease daily maximum lbs/day limit was exceeded in April, 2011
Total Suspended Solids daily maximum lbs/day limit was exceeded in April, 2011
Phosphorus daily maximum mg/l limit was exceeded in November, 2011

Biomonitoring reports for the following months were conducted by BP and all of the tests passed: December, 2007; April, 2008; October, 2008; April, 2009; November, 2009; April, 2010; October, 2010; April, 2011; October, 2011 and April, 2012. https://icis.epa.gov/icis/jsp/common/LoginBody.jsp

4.0 RECEIVING WATER

1. Receiving Waters:

Lake Michigan – Lake Michigan is the receiving water for outfalls 001, 002 and 005.

Lake George Branch of the Indiana Harbor Ship Canal – The Lake George Branch of the Indiana Harbor Ship Canal is the receiving water for Outfalls 003 and 004. The low flow condition of this stream is not relevant since the only discharge to this stream is generated by storm water.

2. Use Classification (327 IAC 2-1.5-19):

Lake Michigan – Lake Michigan is designated as an outstanding state resource water (OSRW) and shall be maintained and protected in its present high quality without degradation in accordance with 327 IAC 2-1.5-4(c). Lake Michigan is also designated for full-body contact recreation and capable of supporting a well-balanced warm water aquatic community. The Indiana portion of the open waters of Lake Michigan is designated as salmonid waters and shall be capable of supporting a salmonid fishery. Lake Michigan is protected by Indiana rules governing water quality standards for the Great Lakes Basin and as such, it is subject to the water quality standards specific to Great Lakes system dischargers as found in 327 IAC 2-1.5, 327 IAC 5-1.5, and 327 IAC 5-2 (see Great Lakes System Discharger Requirements, Section F of the Fact Sheet for more information).

Lake George Branch of the Indiana Harbor Ship Canal – The Lake George Branch of the Indiana Harbor Ship Canal is located within the Great Lakes Basin and is protected by Indiana rules governing water quality standards for the Great Lakes Basin and as such, it is subject to the water quality standards specific to Great Lakes system dischargers as found in 327 IAC 2-1.5, 327 IAC 5-1.5, and 327 IAC 5-2 (see Great Lakes System Discharger Requirements, Section F of the Fact Sheet for more information). The Lake George Branch of the Indiana Harbor Ship Canal is classified as a high quality water that is also a tributary to an OSRW.

3. Alternate Mixing Zone

Under 327 IAC 5-2-11.4(b)(2), except for a zone of initial dilution for acute aquatic criteria, wasteload allocations for discharges to the open waters of Lake Michigan shall be based on meeting water quality criteria in the undiluted discharge unless a mixing zone demonstration is conducted and approved by IDEM under 327 IAC 5-2-11.4(b)(4). If an alternate mixing zone is approved for a discharge to the open waters of Lake Michigan, wasteload allocations shall be based on meeting water quality criteria outside of the applicable alternate mixing zone. Under 327 IAC 5-2-11.4(b)(4)(C), an alternate mixing zone shall not be granted for a discharge into the open waters of Lake Michigan that exceeds the area where discharge-induced mixing occurs.

Prior to the issuance of the existing NPDES permit in 2007, BP Products submitted an alternate mixing zone demonstration in accordance with 327 IAC 5-2-11.4(b)(4) for a discharge through a submerged diffuser. The demonstration included a site specific study in which the ambient currents at the proposed diffuser location were measured over a 45 day period. Based on the information obtained as part of the site-specific study, BP Products modeled the discharge through the submerged diffuser for sixteen different current directions and the associated average current velocities. They used the U.S. EPA supported mixing zone model CORMIX to determine the dilution that occurs at the edge of the discharge-induced mixing zone.

After reviewing the mixing zone demonstration submitted by BP Products and conducting additional mixing zone modeling using CORMIX, a design case for the diffuser was chosen to calculate the dilution factor under critical conditions. At the effluent flow of 21.4 MGD, the diffuser will achieve a dilution factor of 37.1:1 at the edge of the discharge-induced mixing zone. The dilution factor is a weighted average that was calculated using the dilution obtained from the CORMIX model for each of the sixteen current directions and the frequency of occurrence of each current direction. The discharge-induced mixing zone extends a distance of 182 feet from the diffuser and its location will change as the current direction changes. The dilution factor was used in accordance with 327 IAC 5-2-11.4(c) to calculate wasteload allocations for all of the pollutants of concern except for Mercury. A mixing zone for Mercury has not been approved for the BP Products discharge to the open waters of Lake Michigan. The NPDES permit tracking system includes the latitude and longitude associated with each outfall number. Since the location of the discharge changed from the shore (Outfall 001) to the diffuser, the outfall number has to be changed to reflect the change in location. The discharge from the diffuser is designated as Outfall 005.

This alternate mixing zone was evaluated by the Biological Studies Section of the Office of Water Quality of IDEM in accordance with 327 IAC 5-2-11.4(b)(4) to ensure that the mixing zone does not:

1. Interfere with or block passage of fish or aquatic life,
2. Jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of such species' habitats,
3. Extend to drinking water intakes,
4. Impair or otherwise interfere with the designated uses of the receiving water,
5. Promote undesirable aquatic life or result in a dominance of nuisance species,
6. Allow substances to settle to form objectionable deposits,
7. Allow floating debris, oil, scum, and other matter in concentrations that form nuisances,
8. Allow objectionable color, odor, taste or turbidity, or
9. Cause adverse effects to human health, aquatic life or wildlife.

Pursuant to 327 IAC 5-2-11.4(b)(6), the Commissioner has evaluated all available information, including information submitted by the public, relevant to the consideration of harm to human health, aquatic life, or wildlife, and has determined, based on IDEM's evaluation that is part of the agency record for this permit, that the alternate mixing zone will not cause any of the above-noted adverse impacts. Therefore, with the issuance of the existing NPDES permit, the Commissioner approved and granted the application of the alternate mixing zone in accordance with 327 IAC 5-2-11.4(b)(4). Further in accordance with IC 13-18-4-7, the Commissioner has determined that the applicant has demonstrated that the alternate mixing zone will not cause harm to human health or aquatic life.

BP has requested that the frequency of the biological survey of the aquatic life around the diffuser, given in Part I.H.2 of the existing permit, be reduced from annually to the first, third, and fifth year of the renewed permit. The frequency may be increased if findings suggest significant changes in monitored biological/chemical characteristics. Annual biological surveys were conducted under the terms of the existing permit in July 2009 (pre-diffuser), August 2010 (post-diffuser), and July 2011. The data have shown that there have been no significant changes (relative to historic lake conditions) to the biotic community from year to year. The reduced monitoring frequency will be sufficient to identify trends in biological community structure and composition in future years.

IDEM agrees that the conditions surrounding the diffuser have not changed significantly over the term of the existing permit and will grant the request to conduct the biological survey during the first, third and fifth year of the renewed permit.

4.1 Receiving Stream Water Quality

Section 303(d) of the Clean Water Act requires states to identify waters, through their Section 305(b) water quality assessments, that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of impaired waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. A TMDL is the total amount of a pollutant that can be assimilated by the receiving water while still achieving water quality standards.

Indiana's 2010 303(d) List of Impaired Waters is developed in accordance with Indiana's Water Quality Assessment and 303(d) Listing Methodology for Waterbody Impairments and Total Maximum Daily Load Development for the 2010 Cycle. U.S. EPA under Section 303(d) of the Clean Water Act approved the Lake Michigan Shoreline TMDL report on September 1, 2004 for four impairments. TMDL reports identify and evaluate water quality problems in impaired water bodies and propose solutions to bring those waters into attainment with water quality standards.

The Lake Michigan Shoreline is on the 2010 303(d) list for E. coli., Mercury and PCBs. Mercury and PCBs are on the list due to fish consumption advisories for those substances.

http://www.in.gov/idem/nps/2348.htm
[link to water quality-limited database – 303d list]

http://www.in.gov/idem/nps/2652.htm
[link to TMDL web site]

5.0 PERMIT LIMITATIONS

Two categories of effluent limitations exist for NPDES permits: Technology-Based Effluent Limits (TBELs) and; Water Quality-Based Effluent Limits (WQBELs).

TBELs are developed by applying the National Effluent Limitation Guidelines (ELGs) established by USEPA for specific industrial categories TBELs are the primary mechanism of control and enforcement of water pollution under the Clean Water Act (CWA). Technology

based treatment requirements under section 301(b) of the CWA represent the minimum level of control/treatment using available technology that must be imposed in a section 402 permit [40 CFR 125.3(a)].

In the absence of ELGs, effluent limits can also be based upon Best Professional Judgment (BPJ). Accordingly, every individual member of a discharge class or category is required to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. This means that TBELs based upon a BPJ determination are applied at end-of-pipe and mixing zones are not allowed [40 CFR 125.3(a)]. Similarly, since the statutory deadlines best practicable technology (BPT), best available technology economically achievable (BAT) and best conventional control technology (BCT) have all passed; compliance schedules for these TBELs are also not allowed.

WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The WQBELs for this facility are based on water quality criteria in 327 IAC 2-1.5-8 or under the procedures described in 327 IAC 2-1.5-11 through 327 IAC 2-1.5-16 and implementation procedures in 327 IAC 5. Limitations and/or monitoring are required for parameters identified by applications of the reasonable potential to exceed WQBEL in accordance with 327 IAC 5-2-11.5.

According to 40 CFR 122.44 and 327 IAC 5, NPDES permit limits are based on either TBELs, where applicable, BPJ, or WQBELs, whichever is most stringent. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application. In addition, when performing a permit renewal, existing permit limits must be considered. These may be TBELs, WQBELs, or limits based on BPJ. When renewing a permit, the anti-backsliding provisions identified in 327 IAC 5-2-10(11) are taken into consideration.

- Narrative Water Quality Based Limits

  The narrative water quality contained under 327 IAC 2-1.5-8(b)(1) (A)-(E) have been included in this permit to ensure that the narrative water quality criteria are met.

- Numeric Water Quality Based Limits

  The numeric water quality criteria and values contained in this permit have been calculated using the tables of water quality criteria under 327 IAC 2-1.5-6(c) & (d).

5.1 Existing Permit Limits

Outfall 005 (formerly Outfall 001) with an Alternate Mixing Zone

DISCHARGE LIMITATIONS
TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
$TBOD_5$	4,161	8,164	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
TSS	4,925	7,723	lbs/day	Report	Report	mg/l	2 x Weekly	24 Hr. Comp.
COD	30,323	58,427	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Oil and Grease	1,368	2,600	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Ammonia as N	1,584	3,572	lbs/day	Report	Report	mg/l	5 x Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Total Chromium	23.9	68.53	lbs/day	Report	Report	mg/l	1 x Weekly	24-Hr. Comp.
Hex. Chromium	2.01	4.48	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Total Vanadium								
Interim	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24-Hr. Comp.
Final	50	100	lbs/day	0.28	0.56	mg/l	1 x Monthly	24-Hr. Comp.
Total Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	2 x Yearly	Grab
Final	0.00023	0.00057	lbs/day	1.3	3.2	ng/l	6 x Yearly	Grab
Total Phosphorus	Report	Report	lbs/day	Report	1.0	mg/l	1 x Weekly	24 Hr. Comp.
Whole Effluent Toxicity								
Chronic	-	-	-	Report	-	TUc	2 x Yearly	
pH	-	-	-	-	[1]	s.u.	3 x Weekly	Grab

Total Mercury Variance Effluent Limits Outfall 005

	Quality or Concentration			Monitoring	
Parameter	Annual Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Total Mercury	23.1	Report	ng/l	6 x Yearly	Grab

Outfall 002

TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration Monthly Average	Quality or Concentration Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC (Intake)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Discharge)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Net)	-	-	-	Report	5.0	mg/l	1 x Yearly	Grab
Total Residual Chlorine	20.0	60.0	lbs/day	0.01	0.02	mg/l	1 x Weekly	Grab
Oil and Grease	-	-	-	Report	5.0	mg/l	1 x Monthly	Grab
Temperature								
Intake	-	-	-	Report	Report	BTU/Hour	5 x Weekly	Hourly
Discharge	-	-	-	Report	Report	BTU/Hour	5 x Weekly	Hourly
Net (daily average)	-	-	-	1.7×10^9	2×10^9	BTU/Hour	5 x Weekly	Hourly
pH	-	-	-	-	[1]	s.u.	3 x Weekly	Grab

Outfalls 003 and 004

TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

Parameter	Quantity or Loading Monthly Average	Quantity or Loading Daily Maximum	Units	Quality or Concentration Monthly Average	Quality or Concentration Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	110	mg/l	1 x Weekly	Grab
Oil and Grease	-	-	-	Report	15	mg/l	1 x Weekly	Grab
pH	-	-	-	-	[1]	s.u.	1 x Weekly	Grab

5.2 Technology-Based Effluent Limits

The facility is designated as a major NPDES permitted facility with a SIC code of 2911-Petroleum Refining. The facility is subject to the Water Quality Based Effluent Limitations contained in 327 IAC 2 and 327 IAC 5, and it is subject to the Federal Effluent Guideline in 40 CFR 419. Therefore review and approval of the final permit by the US EPA Region 5 will be required.

According to 40 CFR 122.44 and 327 IAC 5, NPDES permit limits are based on either technology-based limitations, where applicable, best professional judgment (BPJ), or Indiana Water Quality-Based Effluent Limitations (WQBEL's), whichever is most stringent. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application, the previous permit, and additional research conducted pursuant to the development of this permit.

- EPA Effluent Guidelines -- Existing Source Standards (BAT/BPT)

The U.S. EPA has established technology-based effluent guidelines for petroleum refining facilities. Since this facility is classified as an "existing point source", all discharges are subject to effluent guidelines identified in 40 CFR 419. The applicable effluent guidelines are as follows on the next three pages:

Outfall 005

Effluent Limitations based on the Federal Effluent Guidelines (40 CFR Part 419) for the CXHO Configuration

EPA Process Name	Process Rate 1000 Bbl/day	Weighting Factor	Process Rate/ Feedstock Rate	Unit Process Configuration Factor
Crude Processes				
Atmospheric Crude Distil.	420.0		1	
Crude Desalting	420.0		1	
Vacuum Crude Distillation	240.3		0.572	
Sum	1080.3	1	2.572	2.572
Cracking and Coking Processes				
Fluid Catalytic Cracking	172.0		0.410	
Delayed Coking	102.0		0.243	
Hydroprocessing	441.3		1.051	
Sum	715.3	6	1.703	10.219
Asphalt Processes				
Asphalt Production	33.9			
Sum	33.9	12	0.081	0.969
Reforming and Alkylation Processes				
Sulfuric Acid Alkylation	29.0			
Catalytic Reforming	70.0			
Sum	99.0			
feedstock rate (1,000 Bbl/day)		420.0	**Total**	13.76

Weighting Factor based on the table in 40 CFR 419.42(b)(3)

Size Factor:

Based on the table in 40 CFR 419.22(b)(1), 419.24(b)(1) = 1,000 BBL of Feedstock per stream day (150.0 or greater), Size Factor = 1.41

Based on the table in 40 CFR 419.22(b)(2), 419.24 (b)(2) = Process Configuration Factor 9.5 or Greater, Process Factor = 1.89
Effluent Limits based on 40 CFR 419.23(c)(1)(i)

Based on 40 CFR 419.23(c)(1)(i) using the CXHO Configuration

Pollutant	Processes Included	Daily Maximum (lbs./1,000 Bbl of Feedstock)	Monthly Average (lbs./1,000 Bbl of Feedstock)	Feedstock Rate (1,000 Bbl of Feedstock)	Effluent Limits Daily Maximum (lbs/day)	Effluent Limits Monthly Average (lbs/day)
Phenolic Compounds	Crude	0.013	0.003	1.080.3	14.04	3.24
	Cracking & Coking	0.147	0.036	715.3	105.15	25.75
	Asphalt	0.079	0.019	33.9	2.68	0.64
	Reforming & Alkylation	0.132	0.032	99	13.07	3.17
	Total				134.94	32.8
Total Chromium	Crude	0.011	0.004	1.080.3	11.88	4.32
	Cracking & Coking	0.119	0.041	715.3	85.12	29.33
	Asphalt	0.064	0.022	33.9	2.17	0.75
	Reforming & Alkylation	0.107	0.037	99	10.59	3.66
	Total				109.77	38.06
Hexavalent Chromium	Crude	0.0007	0.0003	1.080.3	0.76	0.32
	Cracking & Coking	0.0076	0.0034	715.3	5.44	2.43
	Asphalt	0.0041	0.0019	33.9	0.14	0.06
	Reforming & Alkylation	0.0069	0.0031	99	0.68	0.31
	Total				7.01	3.13

Calculation of BPT, BAT and BCT Limitations using the CXHO Configuration

(a) Based on 40 CFR 419.22(a) and 419.24(a); (b) Based on 40 CFR 419.23(c)(1)(i)

Pollutant	Type of Effluent Limitation (a)	Daily Maximum Lbs/1,000 Bbl of Feedstock	Monthly Average Lbs/1,000 Bbl of Feedstock	Size Factor	Process Factor	Feedstock Rate 1,000 Bbl of Feedstock	Effluent Limitations BPT, BAT & BCT Daily Maximum Lbs/day	Effluent Limitations BPT, BAT & BCT Monthly Average Lbs/day	Other BAT Limits (b) Daily Maximum Lbs/day	Other BAT Limits (b) Monthly Average Lbs/day	Controlling Effluent Limitations Daily Maximum Lbs/day	Controlling Effluent Limitations Monthly Average Lbs/day
BOD5	BPT, BCT	**9.9**	5.5	**1.41**	1.89	420.0	11,080.65	6,155.92			11,081	6,156
TSS	BPT, BCT	**6.9**	4.4	**1.41**	1.89	420.0	7,722.88	4,924.74			7,723	4,925
COD	BPT, BAT	**74**	38.4	**1.41**	1.89	420.0	82,825.09	42,979.51			82,825	42,980
Oil and Grease	BPT, BCT	**3**	1.6	**1.41**	1.89	420.0	3,357.77	1,790.81			3,358	1,791
Phenolic Compounds	BPT	**0.074**	0.036	**1.41**	1.89	420.0	82.83	40.29	134.94	32.8	82.8	32.8
Ammonia as N	BPT, BAT	**6.6**	3	**1.41**	1.89	420.0	7,387.1	3,357.77			7,387	3,358
Sulfide	BPT, BAT	**0.065**	0.029	**1.41**	1.89	420.0	72.75	32.46			72.8	32.5
Total Chromium	BPT	**0.15**	0.088	**1.41**	1.89	420.0	167.89	98.49	109.77	38.06	109.8	38.1
Hex. Chromium	BPT	**0.012**	0.0056	**1.41**	1.89	420.0	13.43	6.27	7.01	3.13	7.01	3.13

5.3 Water Quality-Based Effluent Limits

The water quality-based effluent limitations for this facility are based on water quality criteria in 327 IAC 2-1.5-8 or under the procedures described in 327 IAC 2-1.5-11 through 327 IAC 2-1.5-16 and implementation procedures in 327 IAC 5.

- Oil and Grease
Oil and Grease limitations are based upon 327 IAC 5-5-2(h)(2) and are 15.0 mg/l Daily Maximum and 10.0 mg/l Monthly Average. Also, these limits are considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1-6(a)(1)(C) that prohibits oil or other substances in amounts sufficient to produce color, visible sheen, odor, or other conditions in such a degree to create a nuisance.

-Flow
The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)2.

-pH
Limitations for pH in the proposed permit are taken from 327 IAC 2-1.5-8(c)(2).

WQBEL Rationale

The effluent was characterized by BP through sampling and analysis of their effluent and those data were provided to IDEM in the permit renewal application submitted on February 1, 2012 and through monthly discharge reports. On July 28, 2006, IDEM completed a wasteload allocation (7-28-2006 WLA) and evaluation of the reported effluent data to determine if the effluent contains pollutants at a level that has a reasonable potential to cause or contribute to an exceedance of the water quality criteria (RPE). The 7-28-2006 WLA was updated to include revised criteria for Vanadium based on new information provided by BP and to revise the design flow of the discharge to 19.9 MGD.

5.4 Whole Effluent Toxicity

The Indiana Water Quality Standards require that a discharge shall not cause acute toxicity, as measured by Whole Effluent Toxicity Tests (WETT), at any point in the water body and that a discharge shall not cause chronic toxicity, as measured by whole effluent toxicity tests, outside of the applicable mixing zone. Per Indiana Rule 327 IAC 5-2-11 .5(c)(2), the commissioner may include, in the NPDES permit, WETT requirements to generate the data needed to adequately characterized the toxicity of the effluent to aquatic life. Therefore, the permittee is required to conduct WETT to determine the toxicity of the water treatment additives and process wastestreams that may be used at this site.

There has been no failure of WET tests to indicate that there is a reasonable potential to exceed the calculated Acute and Chronic trigger values of 11 acute toxic units and 37 chronic toxic values. BP is being required to monitor their effluent for toxicity due to the source and nature of the discharge. Any discharge from a petroleum refinery has potential to cause toxicity and this monitoring program will ensure that the effluent from the BP Whiting Refinery will not become toxic to the point that it harms the environment. IDEMs whole effluent toxicity language always includes the trigger values in appropriate toxic units. Because of the diffuser

(which modifies the dilution ratio) both the acute and chonic values are affected. For chronic toxicity testing the acute toxicity levels are typically extrapolated from the chronic values.

This does not negate the necessity to submit Water Treatment Additive (WTA) approval worksheets for the additives proposed at this site.

5.5 Antibacksliding

None of the limits included in this permit conflict with anti-backsliding regulations found in 327 IAC 5-2-10(11), therefore, backsliding is applicable.

5.6 Antidegradation

In accordance with 327 IAC 2-1.3, the permittee is prohibited from undertaking any action that would result in the following:

a. A new or increased discharge of a bioaccumulative chemical of concern (BCC), other than mercury, shall be allowed that causes a significant lowering of water quality.

b. A new or increased discharge of mercury or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

    (1) Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the permittee to do the following:

        (i) Submit an antidegradation demonstration in accordance with 327 IAC 2-1.3-5; and

        (ii) Implement or fund a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

    (2) An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6 and the permittee implements or funds a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

A review of information provided by BP Products was conducted to determine compliance with Indiana's Antidegradation Standards. Based on this review, the IDEM determined that the proposed discharges comply with the antidegradation standards found in 327 IAC 2-1.3 and an antidegradation demonstration is not required.

5.7 Stormwater

According to 40 CFR 122.26(b)(14)(ii), facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373 are considered to be engaging in 'industrial activity' for purposes of 40 CFR 122.26(b). Therefore the permittee is required to have all storm water discharges associated with industrial activity permitted. Treatment for storm water discharges associated with industrial activities is required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. The storm water discharges from the J&L and Lake George areas of the facility are controlled by numeric technology-based effluent limitations for Total Organic Carbon based on 419.23(f) and Oil and Grease based on IDEM Water Quality Standards (see Section 6.1).

Storm water associated with industrial activity must be assessed to determine compliance with all water quality standards. Effluent limitations, as defined in the CWA, are restrictions on quantities, rates, and concentrations of constituents which are discharged. Discharges in compliance with the numeric storm water effluent limits for outfalls 003 and 004 will meet the applicable water quality standards and will not cause a significant lowering of water quality. Therefore, the storm water discharge is in compliance with Antidegradation Standards and Implementation Procedures found in 327 IAC 2-1.3 and an Antidegradation Demonstration is not required.

Additionally, IDEM has determined that with the appropriate implementation of the required special conditions found in Part I.D. of the permit are necessary to meet the effluent limits for outfalls 003 and 004. This is consitent with 40 CFR 122.44(k)(4) regarding the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

The special conditions require the permittee to: (1) use good housekeeping practices to keep exposed areas clean, (2) regularly inspect, test, maintain and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges, (3) minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur, (4) stabilize exposed area and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants, (5) divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in your discharges, (6) train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team, and (8) ensure that waste, garbage and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged. These are essentially the same conditions that were in the 2007 permit.

To meet the numeric effluent limitations in Part I.A.3, the permit requires the permittee to implement the special conditions in Part I.D. If at any time the permittee, or IDEM, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions.

"Terms and Condition" to Provide Information in a SWPPP
Distinct from the effluent limitation provisions in the permit, the permit requires the discharger to prepare a Stormwater Pollution Prevention Plan (SWPPP) for its facility. The SWPPP is intended to document the selection, design, installation, and implementation (including inspection, maintenance, monitoring, and corrective action) of control measures being used to comply with the special conditions set forth in Part I.D. of the permit. In general, the SWPPP must be kept up-to-date, and modified whenever necessary to reflect any changes in control measures that were found to be necessary to meet the effluent limitations in this permit.

The requirement to prepare a SWPPP is not an effluent limitation, rather it documents what practices the discharger is implementing to meet the special conditions in Part I.D and the effluent limitations in Part I.A. of the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. Instead, the requirement to develop a SWPPP is a permit "term or condition" authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, "[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate." The SWPPP requirements set forth in this permit are terms or conditions under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it updated is no different than other information collection conditions, as authorized by section 402(a)(2), in other permits.

It should be noted that EPA has developed a guidance document, "Developing your Storm Water Pollution Prevention Plan – A guide for Industrial Operators (EPA 833-B09-002), February 2009, to assist facilities in developing a SWPPP. The guidance contains worksheets, checklists, and model forms that should assist a facility in developing a SWPPP.

BP captures and treats most of its contaminated stormwater from the refinery area in its WWTP then discharges it through outfall 005. To increase the amount of stormwater that is captured and sent to the WWTP, BP built a new stormwater equalization tank (alternative storage) with a capacity around 11.6 million gallons.

The additional stormwater generated from the new CXHO process units is estimated at 1.5 mgd based on a 3.61in. (24-hr, 5-year) storm event on a net increase of 19 acres. However, for design engineering, a storm event of 5.22 in (24- hour 25- year) of rain is used.

According to BP there are no circumstances where it be necessary for BP to discharge flows from the equalization tank without sending those flows to the WWTP. BP has never discharged flows from the equalization tank without sending those flows through the WWTP.

All three equalization tanks can be used for storing water if needed. BP should never have to bypass these tanks. There is over 30 million gallons of capacity. BP typically discharges approximately 15-19 million gallons per day of treated water, and they have only one tank in service as equalization.

In effect since BP contains the stormwater associated with industrial activity through the use of the existing and new equalization basins, it allows BP to send this stormwater through its existing treatment system prior to discharging through Outfall 005. IDEM has updated the language to continue the requirements of Part I.D. and Part I.E. only for discharges of stormwater associated with Industrial Activity from Outfalls 003 and 004. IDEM with the help of US EPA have modified the language in Part I.D and E to better reflect actual conditions at the BP Whiting Facility.

Public availability of documents

Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and it must be immediately available, at the time of an onsite inspection or upon request, to IDEM. Additionally, interested persons can request a copy of the SWPPP through IDEM. By requiring members of the public to request a copy of the SWPPP through IDEM, the Agency is able to provide the permittees with assurance that any Confidential Business Information contained within its SWPPP is not released to the public.

5.8 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives that could significantly change the nature of, or increase the discharge concentration of the additive contributing to Outfalls 002 or 005 that are greater than the dosage rate identified in the permit application, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates. The following water treatment additives have been approved for use at the facility:

The following water treatment additives have been approved for use at this facility: 71-D5 PLUS Antifoam, BPB 55715, BPB 59316, BPB 59396, BPB59430, BPB 59455, BPB 59460, BPB 59466, BPB 59470, BPC 60005, BPC 67015, BPC 67280, BPC 67375, BPC 67525, BPC 68160, BPC 68970, BPW 75890, BPW 76030, BPW 76453, CL2OUT1100, Demand Trac 480, Guardion 9405, Phosphoric Acid Solution, Potassium Permanganate, Praestol K122L, Praestol K230FL, Praestol K260FL, Praestol A304OL, Sodium Bisulfite - 40%, Sodium Hypochlorite, 50% sodium hydroxide, Sulfuric acid solution, Hydrochloric acid, Zinc Chloride - 50%, Demand Trac 990, BPB 59396, Y9BH1233, 71D5 Plus Antifoam, Ferric Sulfate, BPB 55715, BPB 59316, ACS 2125, Praestol A3025, Spectrafoc 875, BPW 76001, BPW 76030, BPB 59430, USALCO 38, USALCO GU 55, BPC 68915, BPC 65610.6.0 Permit Draft Discussion.

6.0 Permit Draft Discussion

6.1 Discharge Limitations and Monitoring Requirements

Outfall 005

DISCHARGE LIMITATIONS
TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
$TBOD_5$	4,161	8,164	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
TSS	3,646	5,694	lbs/day	Report	Report	mg/l	2 x Weekly	24 Hr. Comp.
COD	30,323	58,427	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Oil and Grease	1,368	2,600	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Total Phosphorus	Report	Report	lbs/day	1.0	Report	mg/l	1 x Weekly	24 Hr. Comp.
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Ammonia as N	1,030	2,060	lbs/day	Report	Report	mg/l	5 x Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Total Chromium	23.9	68.53	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Hex. Chromium	2.01	4.48	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Total Vanadium	50	100	lbs/day	0.28	0.56	mg/l	1 x Monthly	24-Hr. Comp.
Total Mercury								
Final Limits	0.00022	0.00053	lbs/day	1.3	3.2	ng/l	6 x Yearly	Grab
Interim Variance Limits			Annual Average =	8.75	Report	ng/l	6 x Yearly	Grab
Whole Effluent Toxicity								
Chronic	-	-	-	Report	-	TUc	2 x Year	
Temperature	------	------	-------	-------	Report	°F	1 X Monthly	Grab
Benzo a pyrene	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24 Hr. Comp.
Total Residual Chlorine	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab
Arsenic	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Copper	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Chloride	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24 Hr. Comp.
Lead	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Total Dissolved Solids (TDS)	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Manganese	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Selenium	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Strontium	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Sulfate	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.
Nitrate-Nitrite	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24Hr. Comp.

Table 005-2

Parameter	Quality or Concentration Daily Minimum	Quality or Concentration Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
pH	6.0	9.0	s.u.	3 x Weekly	Grab

Flow

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 5-2-13(a)(2).

BOD_5, COD, Oil and Grease, Phenolics (4AAP), Total Chromium, Hex. Chromium and Sulfide

The Loading effluent limitations for the above noted parameters have been retained from the previous permit in accordance with 327 IAC 5-2-10(11) commonly referred to as anti-backsliding. BP North America has indicated that it is not necessary to request an increase in the loading effluent limitations for these parameters.

Vanadium

BP has been working on removing the source of Vanadium from their wastewater and was successful in eliminating the main source of Vanadium in December, 2011. The highest measured concentration of Vanadium in Outfall 005 since December, 2011 is 0.031 mg/l which is much smaller than the monthly average effluent limit of 0.28 mg/l. The following update is taken from the schedule of compliance report submitted to IDEM on July 24, 2012 regarding compliance with the final WQBEL for Vanadium contained in the existing permit:

BP completed a detailed source survey of the refinery as well as the evaluation of other refinery vanadium sources and effluent data. This review assisted BP in the evaluation of the need for any additional future controls in addition to the strategies already being planned and implemented as described below. Additionally, BP has contracted Purdue Water Institute and Argonne National Labs to evaluate process design, perform metals speciation and characterization and evaluate various technologies associated with vanadium treatment. BP has also employed the services of third party consultants to assist in the evaluation of potential vanadium treatment technologies as well. However it was determined that additional treatment and controls are not needed with the elimination of the SRU TGU Beavon Stretford blowdown, a major source of vanadium. This will allow BP to comply with the effluent limits for Outfall 005 even with the increased processing of Canadian crudes. This unit is planned to be replaced by second quarter 2013.

The Sulfur Recovery Unit (SRU) Beavon Stretford Solution blowdown accounts for a significant discharge of the existing vanadium loading to BP's wastewater treatment plant. This vanadium-based technology will be replaced with non-vanadium based Shell Claus Off-gas Treatment (SCOT). In the interim, until the SCOT units are completed in 2013, Global Sulfur Solutions will be used to manage impurities in the Stretford solution so that there is no longer needed any blowdown of solution with vanadium to the refinery sewer system and will remove the significant source of vanadium in the effluent. This process has been in place since fourth quarter 2011 and we are now

currently meeting the final limits for vanadium.

The Projected Effluent Quality for Vanadium at Outfall 005 since December, 2011, when the Beavon Stretford Solution blowdown containing the source of the Vanadium was discontinued, is the maximum single data point of 0.031 mg/l x the multiplication factor for 7 samples which is 2 = 0.062 mg/l. So the Projected Effluent Quality for Vanadium at Outfall 005 is 0.062 mg/l. The Preliminary Water Quality Based Effluent Limit for Vanadium using the revised Tier II Value for Vanadium is 0.84 mg/l. The Preliminary Effluent Limit (0.84 mg/l) is greater than the Projected Effluent Quality (0.062 mg/l). Therefore based on a preliminary evaluation of the effluent and the recent changes to the source and nature of the discharge, IDEM has concluded that the discharge from Outfall 005 no longer has a reasonable potential to exceed the water quality criteria for Vanadium.

However, because we are only dealing with a limited data set and BP has not completed all of the source reduction changes at the facility, IDEM proposes to retain the existing effluent limits and monitoring requirements for Total Vanadium at Outfall 005 until one year after BP has completed the replacement of the SRU with the SCOT in 2013. BP may then apply for a permit modification at that time to remove the effluent limits and monitoring requirements for Total Vanadium if the results of a reasonable potential analysis still demonstrate that there is not a reasonable potential to exceed the water quality based effluent limit for Vanadium.

The existing effluent limits are being retained in the permit because BP has demonstrated that they are now able to consistently meet the existing limits for Total Vanadium. The anti-backsliding rules found in 327 IAC 5-2-10(11)(B) prohibit IDEM from relaxing the limits for Total Vanadium based on a revised wasteload allocation. When the source of Total Vanadium has been completely eliminated, the permit may be modified to remove the effluent limits and monitoring requirements for Total Vanadium. The 2007 wasteload allocation for BP was updated to reflect the revised lower effluent design flow of 19.9 MGD. The revised WQBELs for Vanadium were calculated to be:

Monthly Average: 0.73 mg/l and 120 lbs/day
Daily Maximum: 1.5 mg/l and 250 lbs/day

The existing final limits are:

Monthly Average: 0.28 mg/l and 50 lbs/day
Daily Maximum: 0.56 mg/l and 100 lbs/day

One year after the Sulfur Recovery Unit (SRU) Beavon Stretford Solution blowdown (vanadium-based technology) has been replaced with non-vanadium based Shell Claus Off-gas Treatment (SCOT), the permittee may request, in writing, a review of the effluent limits and monitoring requirement for Total Vanadium at Outfall 005.

Mercury

Mercury has been found in the effluent in quantities that show a reasonable potential to exceed water quality standards based on the procedures found in 327 IAC 5-2-11.5. Therefore, the permit

will include final effluent limitations for Total Mercury based on the revised lower effluent design flow of 19.9 MGD. The permit will contain interim effluent limits for Total Mercury based on the streamlined mercury variance rule (327 IAC 5-3.5). Mercury will be monitored once every two months.

Phosphorus

Phosphorus is added to the wastewater treatment plant as a micro-nutrient. BP has demonstrated that they can consistently achieve a concentration below 1 mg/l and a removal efficiency that averages an estimated 79%. The ability to accurately measure the percent removal efficiency is severely limited, so the requirement to measure the percent removal is being waived. The effluent shall be limited to a monthly average concentration of 1 mg/l Total Phosphorus in accordance with 327 IAC 5-10-2(a)(2).

Whole Effluent Toxicity

There is not a calculated RPE for WET when there is an alternate mixing zone. BP is required to continue to monitor the effluent from Outfall 005for Chronic Toxicity. If chronic toxicity is observed by having more than 37 Toxic Units Chronic, then a toxicity reduction evaluation (TRE) will be initiated to determine the cause of the toxicity and to reduce or eliminate the source of the toxicity. See Section 5.4 for discussion of WETT requirements.

pH

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 2-1.5-8(c)(2). pH must be maintained between 6 to 9 standard units. The effluent shall be sampled 3 x weekly using a grab sample.

Ammonia as N and Total Suspended Solids

As part of the permit renewal application, BP Products North America, LLC requested that the effluent limits for TSS and Ammonia be decreased to the levels that were included in the permit issued on March 5, 1990 due to material and substantial changes at the refinery that will allow BP to achieve compliance with the previous limits for TSS and ammonia. Since this permit modification does not propose any new or increased discharges, antidegradation is not applicable to this permit modification. The effluent limits for TSS and ammonia from the permit issued to BP on March 5, 1990 will be included in this permit renewal.
Additional Parameters for Monitoring

In order to determine a better characterization of the BP effluent and determine how the treatment systems BP has been modifying and/or adding to the existing treatment system effects the effluent quality, prior to the discharge through Outfall 005, IDEM has determined the following parameters are needed to provide an ongoing assessment of treatment performance: Arsenic, Copper, Chloride, Fluoride, Lead, Total Dissolved Solids, Manganese, Selenium, Strontium, Sulfate, and Nitrate-

Nitrite, Temperature (1 X Monthly), Benzo-a-pyrene, and Total Residual Chlorine. All except Temp. will be required to be monitored on a 2 X Monthly basis for discharges through Outfall 005.

Outfall 002

TABLE I

Numeric Discharge Limitations, Sampling, and Monitoring Requirements

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	5.0	mg/l	1 x Yearly	Grab
Total Residual Chlorine	20.0	60.0	lbs/day	0.01	0.02	mg/l	1 x Weekly	Grab
Oil and Grease	-	-	-	Report	5.0	mg/l	1 x Monthly	Grab
Temperature								
Intake	-	-	-	Report	Report	BTU/Hour	5 x Weekly	Hourly
Discharge	-	-	-	Report	Report	BTU/Hour	5 x Weekly	Hourly
Net (daily average)	-	-	-	1.7×10^9	2×10^9	BTU/Hour	5 x Weekly	Hourly
pH	-	-	-	-	[1]	s.u.	3 x Weekly	Grab

[1] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

Flow

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 5-2-13(a)(2).

Total Organic Carbon TOC

The limitation for TOC is based on the U.S. EPA effluent guidelines 40 CFR Part 419.23(d) for discharges of once through non-contact cooling water.

Oil and Grease

The requirement to have no oil and grease greater than 5 mg/l is a technology based effluent limit developed in accordance with 327 IAC 5-5-2 recognizing that there should be no oil and grease introduced into the once-through cooling water. This parameter was a net limit in the previous permit but the reported data has established that the intake does not contain any oil and grease which makes the net limit approach unnecessary. The reported data has never shown the presence of oil and grease, therefore the monitoring frequency has been reduced to 1 x Monthly.

Total Residual Chlorine

The water quality based effluent limitation for continuous total residual chlorine is based on the water quality standards in 327 IAC 2-1.5-8, Table 8-1.

The water quality based effluent limits for chlorine are less than the limit of quantitation (LOQ) of 0.06 mg/l. In accordance with 327 IAC 5-2-11.6(h), the permittee will be

considered to be in compliance with the WQBELs if the effluent concentrations measured are less than the LOQ of 0.06 mg/l.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D	0.02 mg/l	0.06 mg/l
	4500-Cl-E	0.02 mg/l	0.06 mg/l
	4500-Cl-G	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner. BP has submitted their procedure/program for minimizing the amount of chlorine being discharged, therefore the requirement to submit a pollutant minimization program will not be included in the permit.

Temperature

The NPDES permit for BP contains alternate thermal effluent limits established in accordance with 327 IAC 5-7 and Section 316(a) of the Clean Water Act. The alternate limits of a net daily average of 1.7 million BTU/Hour and a net daily average maximum of 2.0 million BTUs/ Hour were developed as a part of the 316(a) approval given to the previous owner of this facility (Amoco Oil Company) on June 16, 1975 by the U.S. EPA. The alternate limits were continued in the permit renewals that occurred prior to this renewal with the last renewal occurring on July 30, 2007. Those renewals were based on the initial 316a study and the fact that no harm to aquatic life has been documented due to the thermal discharge from Outfall 002 since the discharge began operations. The net temperature is calculated by subtracting the temperature value of the intake water from the temperature value of the gross discharge every hour and averaging those values over the 24 hours of each day when sampling occurs.

During the term of the existing NPDES permit issued on July 30, 2007, BP North America, LLC worked with IDEM to develop and conduct an IDEM approved thermal impact study and then submit the results of that study to IDEM to demonstrate that the alternative effluent limitations (existing alternate limits) desired by the discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is to be made.

A Type III §316(a) Demonstration (US Environmental Protection Agency (EPA) 1977) was conducted for the Whiting Refinery (then owned by Amoco Oil Company and Union Carbide Corporation in 1975) (Limnetics 1975). The Limnetics study included plume

mapping data collected in 1971-1973 and biological data collected from several power plants in the southern portion of the lake during the same time frame. Limnetics (1975, p. 115) concluded that the thermal effluents from this Refinery "are not expected to appreciably harm the indigenous population of fish, shellfish and associated wildlife." IDEM accepted the demonstration and EPA Region V concurred stating "we have no objections to the State of Indiana granting Amoco's request for alternative thermal effluent limits" (letter from James McDonald, Director, Region V EPA to IDEM dated June 16, 1975).

The current NPDES permit (IN0000108) required that a thermal monitoring/modeling study be conducted, which was completed in 2010 (AECOM 2011). Consistent with a Study Plan approved by IDEM, BP conducted a four-week long field survey in the receiving water near Outfall 002 from September 23 to October 27, 2010.

Results of model scenario runs indicate that the thermal plume extends beyond the 1,000-foot arc encircling the outfall under worst-case scenarios. The proposed future plant conditions with reduced volumes of cooling water discharge are not expected to have any significant impacts on the extent of the thermal plume. The extent of the thermal plume is greatest when wind is from the north and the ambient current direction is towards the southeast.

Based on the thermal plume study results, a §316(a) variance demonstration based on a site-specific biological assessment was determined to be warranted. Section IIIA of the NPDES Permit requires that BP conduct a §316(a) study to justify continuation of the previously approved temperature variance. As conditioned in the permit, BP prepared a study plan for review and approval by IDEM, conducted the approved study, and, within 24 months of approval of the study plan, submitted this §316(a) variance request to IDEM.

Prior to submittal of the biological study plan, IDEM staff were consulted on several occasions to get their input regarding study design. It was agreed that the study should be conducted primarily during the summer and that fish are the only taxonomic group that need to be monitored. It was further agreed that fish near shore would be sampled by electrofishing and those offshore by trawling and gill netting. On May 27, 2011, BP sent an initial draft of the Study Plan to IDEM for review. On June 10, 2011, IDEM requested a number of changes including taking considerably more physicochemical measurements, requesting additional biological metrics, repositioning of two sampling locations, and adding one more offshore location. On July 5, 2011, BP sent a revised study plan to IDEM that addressed the various concerns that IDEM had raised in its letter dated June 10, 2011. BP modified the draft study plan to address IDEM recommendations and IDEM approved the revised study plan on July 8, 2011.

According to Indiana water temperature criteria for Lake Michigan [327 IAC 2-1.5-8(c)], the receiving water temperature cannot be more than 3°F (1.7°C) greater than existing background temperature at a maximum distance of a 1,000-ft arc inscribed from the thermal discharge. Under Indiana water quality criteria, water within the arc can exceed the standard without a thermal variance under §316(a). In addition, the receiving water temperature

outside of the 1,000-ft arc cannot exceed specified monthly temperatures in Lake Michigan (Table 1-2), except when an exceedance can be demonstrated to be caused by the water temperature at the intake.

The following water quality standards are applicable to a discharge to Lake Michigan:

At any time and at a maximum distance of a one thousand (1,000) foot arc inscribed from a fixed point adjacent to the discharge or as agreed upon by the commissioner and federal regulatory agencies, the following shall apply:

(i) Thermal discharges to Lake Michigan shall not raise the maximum temperature in the receiving water above those listed in the following table, except to the extent the permittee adequately demonstrates that the exceedance is caused by the water temperature of the intake water:

Table 1-2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	45	45	45	55	60	70	80	80	80	65	60	50

(ii) If the permittee demonstrates that the intake water temperature is within three (3) degrees Fahrenheit below an applicable maximum temperature under subitem (i) above, then not more than a three (3) degree Fahrenheit exceedance of the maximum water temperature shall be permitted.

According to the approved thermal plume study plan, BP conducted a four-week field survey in the receiving water near Outfall 002 from September 23 to October 27, 2010. The Environmental Fluid Dynamics Code (EFDC) model was used to develop the thermal model due to the complex hydrodynamics of the BP Whiting thermal discharge, the resulting plume, and the need to evaluate the thermal plume in three dimensions. The EFDC model was calibrated using the first two weeks of field survey data from September 27, 2010 to October 11, 2010. The calibrated model was then validated using the second two weeks of field survey data from October 11, 2010 to October 25, 2010. Comparison of predicted data and observed data from the validation period indicated that the model calibration was satisfactory based on the United States Environmental Protection Agency technical guidance (USEPA 1990) and professional judgment, and that the model is suitable for predictions outside of the calibration period and for predictions at multiple locations within the model domain.

The calibrated and validated model was used to predict the extent of the thermal plume under a range of worst-case heat dissipation scenarios. The results of model scenario runs indicated that the thermal plume extends beyond the 1,000-ft arc encircling the outfall under worst-case scenarios. The proposed future plant conditions are not expected to have any significant impacts on the extent of the thermal plume. The extent of the thermal plume is greatest when wind is from the north and ambient currents are towards the southeast.

IDEM has reviewed the results of the Thermal Impact Study and the application for alternate thermal effluent limits in accordance with 327 IAC 5-7 and IDEM proposes to allow BP Products North America to continue using the existing alternate thermal effluent limitations at Outfall 002 because IDEM believes that the alternate effluent limitations will ensure the protection and propagation of the balanced and indigenous population of fish, shellfish and wildlife in and on the water body.

pH

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 2-1.5-8(c)(2). pH must be maintained between 6 to 9 standard units. The effluent shall be sampled 3 x weekly using a grab sample.

Zebra and Quagga Mussel Control

The zebra mussel control program is used for the purpose of killing both adult and juvenile Quagga and Zebra mussels in the refinery once through cooling water system (OTCW). This kill is accomplished by a continuous feed of sodium hypochlorite throughout the year; spring, summer, fall, and winter. Sodium hypochlorite feed will be controlled to maintain 0.25 – 0.5 mg/l total residual chlorine (TRC). De-chlorination will occur using Sodium Bi-sulfite prior to discharge. The use of chlorine to prevent the growth of mussels in the CWIS and the intake pipes is considered to be the application of a FIFRA registered substance in accordance with label instructions and at that time the chlorine is not considered or treated as a pollutant. IDEM has no reason to believe that chlorine is escaping into Lake Michigan due to the fact that is it applied to the CWIS at a point where the intake velocity will pull the chlorine into the CWIS, therefore, IDEM does not believe any additional permit related requirements are needed at this time.

Section 316(b) Cooling Water Intake Structure (CWIS) Requirements

Introduction

The U.S. Environmental Protection Agency (EPA) requires the permit issuing authority to conduct a best professional judgment (BPJ) evaluation of the CWIS to establish that the CWIS is equivalent to the best technology available (BTA). Therefore, the BP Whiting Business Unit (WBU) provided IDEM a description of the CWIS dated 29 August 2012.

Cooling Water Intake Structures Descriptions

Lake Michigan is the water source for both water stations. At the present time, there are two water intakes located approximately 1,330 and 1,440 feet offshore, about 300 feet apart. Although grating exists on the intake system to exclude large debris, no intake screen system exists.

One water intake supplies water to the 1911 tunnel; the other intake supplies water to the 1942 tunnel. These tunnels are tied together near the water stations, so that both tunnels serve both water stations. Although each water station can be isolated for maintenance, the current configuration

does not allow either tunnel intake to be isolated. The tunnels terminate in the suction well located below the floor of each station. All pumps in each station take suction from the station well.

1911 Tunnel and Cooling Water Intake Structure

In 1911 a brick tunnel was constructed into Lake Michigan and connected to the "old" pumping station. The inside dimensions of the brick tunnel are 5 feet 0 inches wide by 5 feet 6 inches high; while the wall thickness data is not known. The length of this tunnel is 2,400 feet from the lake intake to the land shaft located adjacent to the tunnel flush tank. (A land shaft is used during the construction of a tunnel.) This tunnel is still in operation and is connected to the tunnel constructed in 1942 and to the two water stations.

Details of the water intake structure to the 1911 tunnel are not as clear. The intake was originally designed with what appear to be three arms capped with cylindrical screens which fed into a central pipe 8 feet 4 inches in diameter. Over time, modifications have been made to maintain the intake structure in operable condition, but much of the original structure remains intact. One of the screened arms is no longer present and the central pipe is now an open pipe receiving vertical water flow. This intake provides a small proportion of the total design intake flow and is located approximately 1,330 feet offshore.

1929 Flume

The No. 1 Water Station was constructed in 1929. A reinforced concrete tunnel, sometimes called a "flume", also was constructed to connect the land shaft of the 1911 tunnel with the suction well of the No. 1 Water Station. There is a gate well and a sluice gate (manual or electric motor operated) inside No. 1 Water Station to block off the water supply for necessary repairs inside the suction well of No. 1Water Station. This will not bypass the 1911 intake as flow will continue to No. 2 Water Station.

1942 Tunnel and Intake

The No.2 Water Station was constructed in 1942. Also constructed at this time was a second tunnel into the lake. The length of this tunnel is 2530 feet from its water intake to the 10 feet 0 inch inner diameter reinforced concrete land shaft located northwest of No. 1 Water Station. A gate well (but no sluice gate) is located in this tunnel section. There is a gate well and manually operated sluice gates to block off this tunnel for necessary repairs inside the suction well of No. 2 Water Station.

In the early 1980s, a frazil ice and biological fouling prevention system was put in place. Hot water and chlorine solution are pumped out to manifolds running the circumference of the intake in order to reduce ice and biological growth. This intake provides the majority of the total design intake flow and is located approximately 1,440 feet offshore.

WATER STATION DESCRIPTION AND OPERATION

Water Station Nos. 1 and 2 receive water via both intake tunnels to a wet well located under each water station. All pumps in each station take suction from the station well. No. 1 Water Station

houses five pumps (including one smaller firewater pump) with a design capacity of 117.8 million gallons per day (MGD). One pump was removed, but equipment is still in place for it to be re-installed to satisfy future needs. No.2 Water Station houses four pumps with a design capacity of 146.3 MGD. A recent upgrade to the firewater system included a new pump house for three firewater pumps with a design capacity of 17.3 MGD. This pump house's suction well is tied into the land shaft. The four firewater pumps in No. 1 Water Station and the new firewater pump house operate on demand and are not often in use. The capacity of all three pump houses combined is 281.4 MGD.

Pumps are generally operated by maintaining a pressure of approximately 34 to 35 psig in the main header and the number and combination of pumps turned on at a given time depends on refinery water demand. Therefore, the actual flow at individual pumps or water stations is variable. Flow meters are located at the Lakefront Waste Water Treatment Plant to measure discharge to the lake. Water intake values are, therefore, back-calculated, incorporating losses incurred within the refinery. The calculated total average intake flow from 2009 to 2011 was 91.9 MGD. A theoretical analysis of intake tunnel volumes and frictional impacts estimated that 67 percent of the total water intake flows through the 1942 tunnel and 33 percent through the 1911 tunnel. Estimated flows for the 1942 and 1911 tunnels based on this percentage split are shown in Table 1:

TABLE 1
AVERAGE ACTUAL INTAKE FLOW FROM 2009-2011

Time Period	Intake 1942 Flow	Intake 1911 Flow	Combined Flow
2009	67.4	33.1	100.5
2010	61.8	30.3	92.1
2011	55.9	27.4	83.3
2009-2011	61.7	30.3	92.0

AVERAGE THROUGH-SCREEN VELOCITY

Average through-screen velocity was measured on November 13, 2009, during a routine intake inspection. Divers used a hand-held velocity meter and positioned it along the intake plane at specified locations, orienting the meter until the greatest velocity at each location was observed. Fifteen locations were measured at the 1942 intake and one measurement was taken at the 1911 intake. Average intake flow on November 13 was calculated at approximately 85 MGD. During the period when the diver was taking velocity measurements, pumps were operated at 35 psig to simulate high refinery water demand and increased intake water velocities. The average velocity observed at the 1942 intake was 0.26 feet per second (fps) with a maximum velocity of 0.35 fps. The single velocity measurement for the 1911 intake was made at the center of the intake pipe and had a value of 0.56 fps. This location is likely the maximum velocity of the intake pipe velocity field and the average velocity would therefore be less than this value.

The number of pumps and design capacities were provided in the 29 August 2012 CWIS Documentation. Water enters each pump house from two offshore intake tunnels to a pump house suction well. Pumps draw water from the well for distribution throughout the refinery as well as

supply to other users such as Whiting Clean Energy, Praxair, Ineos Chemical and previously the City of Whiting. The following table No. 1 provides additional information on the intakes

Table No. 1. Water Station Information

Intake Characteristic	Water Station No. 1	Water Station No. 2	Firewater Pump House
Number of debris/fish screens	0	0	0
Number of water pumps	5	4	3
Pump capacity (design)	117.8 MGD	146.3 MGD	13.0 MGD
Intake supplier	Both 1942 and 1911 offshore intakes	Both 1942 and 1911 offshore intakes	Both 1942 and 1911 offshore intakes
Supplied Operation	BP Refinery (process/utility water and once through cooling water, City of Whiting (until 2010), Whiting Clean Energy, Ineos Chemical (until end 2012) and Praxair	BP Refinery (process/utility water and once through cooling water, City of Whiting (until 2010), Whiting Clean Energy, Ineos Chemical (until end 2012) and Praxair	BP Refinery fire water system

(B) There are no dedicated debris screens or fish returns at the pump houses or intakes. Debris screening is achieved at the individual process unit standard pump screens. When the proposed 316(b) Rule is finalized, BP will assess the new regulation requirements, the current intake configuration, and options to remain compliant and protective of the environment. EPA and IDEM have previously determined, taking into account the current configuration, that the CWIS is protective of the environment in accordance with the current 316 (b) requirements.

(C) There are six cooling towers in operation within the refinery. Installation of two additional cooling towers is included in the Whiting Refinery Modernization Project (WRMP). The cooling towers and unit re-configurations of the plant upgrade project are expected to achieve water demand reductions estimated at 16.9 MGD. Though new circulating systems are being installed and evaluated, replacing the entire system with circulating systems is not practicable. Upon finalization of the 316(b) Rule and completion and startup of WRMP, BP will evaluate water reductions provided by the cooling towers

and other process reconfigurations and how those reductions might help the Whiting facility to comply with 316(b) requirements.

(D) The monthly average daily Actual Intake Flow (AIF) is calculated by averaging the daily flows for the days in the month and is provided as a daily average flow rate, summarized below for Years 2009 to 2011, along with the daily design flow.

Design vs. Actual Intake Flow

Month/Year	Monthly Intake Flow (MGD)	
	Design Intake Flow	Calculated Actual Intake
Jan 2009	277.1	102.3
Feb		108.5
Mar		105.0
Apr		95.7
May		95.6
Jun		103.2
Jul		108.5
Aug		107.9
Sep		104.7
Oct		96.5
Nov		89.6
Dec		87.7
2009 Annual	--	**100.5**
Jan 2010	277.1	86.0
Feb		83.0
Mar		84.0
Apr		88.8
May		91.1
Jun		97.4
Jul		104.5
Aug		106.1
Sep		100.8
Oct		93.5
Nov		86.3
Dec		83.1
2010 Annual	--	**92.1**
Jan 2011		72.5
Feb		72.0
Mar		58.5
Apr		65.8
May		72.0
Jun		93.1
Jul		93.6

Aug		80.7
Sep	277.1	114.8
	Monthly Intake Flow (MGD)	
Month/Year	Design Intake Flow	Calculated Actual Intake
Oct	277.1	101.1
Nov		86.2
Dec		89.1
2011 Annual	--	**83.3**

(E) Intake flow is calculated from the discharge of the Lakefront Waste Water Treatment Plant, consumptive use, and water losses that occur within the refinery. Therefore, there is no flow data that can be directly associated with the instantaneous velocity measurements taken at the intake and the 35 psig header pressure. However, as stated in the documentation, the average intake flow calculated for the day of the velocity measurements was 85 MGD.

(F) BP has a water intake and usage registration with the Indiana Department of Natural Resources. BP recognizes that its average cooling water flow needs do not approach Design Intake Flow (DIF) conditions. Monthly calculated intake flows are reported each month and total annual flows are reported to the Indiana Department of Natural Resources (DNR). The DNR is the authority for the state of Indiana responsible for the registration of the intake capacities and allowed withdrawals from the Great Lakes.

Conclusion and Permit Conditions

Based on available information; IDEM has made a Best Technology Available (BTA) determination that the existing cooling water intake structures represent best technology available to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326) at this time based on the following information:

- Average through-screen velocity was measured on November 13, 2009, during a routine intake inspection. The average velocity observed at the 1942 intake was 0.26 feet per second (fps) with a maximum velocity of 0.35 fps. The single velocity measurement for the 1911 intake was made at the center of the intake pipe and had a value of 0.56 fps. At this location it is likely the maximum velocity of the intake pipe velocity field and the average velocity would therefore be less than this value.
- The capacity of all three pump houses that supply water combined to BP is 281.4 MGD and the 2011 annual average water intake rate is 83.3 MGD. The water intake rate over the past several years is in decline due to improvements and recycling efforts at the refinery: 2009 annual average water intake rate = 100.5 MGD; 2010 annual average water intake rate = 92.1 MGD. The 2011 annual average water intake rate is approximately 30 % of the pumping capacity.
- There are six cooling towers in operation within the refinery. Installation of two additional cooling towers is included in the Whiting Refinery Modernization Project (WRMP). The cooling towers and unit re-configurations of the plant upgrade project are expected to achieve water demand reductions estimated at 16.9 MGD.

- BP has a water intake and usage registration with the Indiana Department of Natural Resources. Monthly calculated intake flows are reported each month and total annual flows are reported to the Indiana Department of Natural Resources (DNR). The DNR is the authority for the state of Indiana responsible for the registration of the intake capacities and allowed withdrawals from the Great Lakes.
- The DNR is also responsible for the implementation of the Great Lakes Initiative which regulates the amount of withdrawal, consumption and diversions of the Indiana portion of the Great Lakes. Consumptive losses as well as diversions and design withdraw capacities are capped by the DNR registration.

This determination is based on Best Professional Judgment (BPJ) and will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). IDEM believes that, for reassessment of its BTA determination during the next permit renewal, fish return alternatives must be evaluated during the term of this permit renewal. Focus is placed on this particular evaluation due to the absence of debris screens and fish returns. IDEM wants to know exactly how the absences impact the aquatic life population. The permittee shall comply with the following requirements in the renewed permit:

1. At all times properly operate and maintain the cooling water intake structure equipment.

2. The permittee shall submit a fish impingement and mortality minimization alternatives evaluation and implementation plan to IDEM for review and approval. The evaluation report and implementation plan for any operational changes and/or facility modification shall be submitted to IDEM as soon as feasible, but at least 270 days prior to the expiration date of this permit. The fish mortality minimization alternatives evaluation shall include the feasibility of installing a fish return to Lake Michigan.

3. Inform IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

4. Submit all required reports to the IDEM, Office of Water Quality, Permits Branch

Outfalls 003 and 004

TABLE I
Numeric Discharge Limitations, Sampling, and Monitoring Requirements

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	110	mg/l	1 x Weekly	Grab
Oil and Grease	-	-	-	Report	15	mg/l	1 x Weekly	Grab
pH	-	-	-	-	[1]	s.u.	1 x Weekly	Grab

[1] The pH of the effluent shall be no less than 6.0 and no greater than 9.0 standard units (s.u.).

Flow

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 5-2-13(a)(2).

TOC

The effluent limitations for TOC are based on 40 CFR Part 419.23(f) for contaminated runoff.

Oil and Grease

The previous fact sheet stated that the effluent limits for Oil and Grease are based on Indiana Water Quality Standards. The daily maximum limit of 15 mg/l is also equivalent to the technology-based effluent limitation for oil and grease developed in accordance with 327 IAC 5-5-2 representing the permit writer's best professional judgment of the best available treatment.

pH

This parameter is required of all NPDES permits and is included in this permit in accordance with 327 IAC 2-1.5-8(c)(2). pH must be maintained between 6 to 9 standard units. The effluent shall be sampled 1 x weekly using a grab sample.

6.2 Analytical and Sampling Methods

Analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

6.3 Schedule of Compliance

The circumstances in this NPDES permit do not qualify for a schedule of compliance.

6.4 Special Conditions

Streamlined Mercury Variance (SMV)

Introduction

The permittee submitted a renewal application for a streamlined mercury variance (SMV) in accordance with the provisions of 327 IAC 5-3.5. The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit.

IDEM has conducted a review of the SMV goals contained in the existing permit to determine if BP has achieved those goals in accordance with the permit conditions based on the SMV. IDEM has determined the application to be complete as outlined in 327 IAC 5-3.5-4(e).

BP submitted an SMV progress report to IDEM on August 17, 2012 to satisfy goal No. 1 of the SMV. The progress report contained the following summary of the research conducted by Purdue Uniuversity and Argonne National Laboratory. Purdue University Calumet (Purdue or PUC) and Argonne National Laboratory (Argonne) have conducted an independent multi-year study, funded by BP, to identify deployable technologies to treat (refinery) wastewater with the objective of meeting the 1.3 ng/l (ppt) Great Lakes Water Quality Criterion for mercury. The final phase, pilot-scale study was conducted at the BP Whiting refinery using a slipstream of wastewater taken just prior to the Effluent to the Lake (pre - ETL) outfall as the influent stream to the pilot. The pilot-scale testing plan involved ultrafiltration and reactive filtration (Blue PRO®) technologies.

Key findings from this phase included:

- The mercury in the feed to the unit was primarily associated with particulates - very little dissolved mercury was measured during the test period.

- Significant variability in mercury concentrations was observed during this study. To obtain a measure of variability, two days of composite sampling events for the ultrafiltration pilot were conducted. These two sampling events showed that the standard deviations were very high and ranged from 41.5 to 59% in feed and membrane backwash samples

Ultrafiltration Pilot Study:

- The UF membrane pilot unit consistently provided permeate that was less than 0.5 ppt total mercury.

- Low membrane fouling rates were calculated during a majority of the study duration, except for one (unexplained) episode of high fouling rate.

- An unexpectedly large solids accumulation was noticed in the membrane unit at the conclusion of the pilot in spite of the regular maintenance and chemical cleanings. However,

accumulation of mercury on the membrane fibers themselves was negligible and did not appear to affect performance.

- The separated mercury concentrated in a reject stream that is still fairly substantial as a percentage of the feed flow. Further testing is therefore needed to determine treatment options for the full scale reject stream.

Reactive Filtration Pilot Study:

- The reactive filtration unit was first operated as a sand filter only mode (without ferric or Nalmet® 1689 polymer addition). Mercury breakthrough was seen in the effluent after 46 days of operation in this mode.

- Bench-scale testing had previously determined that Nalmet® polymer addition was preferable to ferric addition in case sand filtration alone was not sufficient to meet the treatment criterion. Effluent quality, after Hg breakthrough mentioned above, was restored when Nalmet® (at a very high dosage of 25 ppm to each filter) was added to each filter's influent, however, the brevity of these test conditions (three weeks) prevent definitive conclusions from being made regarding long term effectiveness of this approach.

- Mercury accumulation was seen in the filter during both modes of operation. It appeared that this accumulation was enhanced during Nalmet® addition, to the extent that all of the separated mercury appeared to be accumulating in the sand during the Nalmet® addition rather than being concentrated into the reject stream. The capacity of the filter to accumulate mercury before effluent mercury quality is impacted is unknown.

- Further testing is necessary to determine the treatment options for the reject flow from this unit, which contains the concentrated mercury, as well as options to deal with mercury accumulation in the sand bed.

Recommendations by Purdue and Argonne for Further Evaluation Steps

The following are the key recommendations from the Purdue Argonne team for further evaluations:

- Both Purdue and Argonne recommend a longer-term pilot study of ultrafiltration technology at the Whiting refinery. Purdue recommends that the chronological change of the Hg on the used ultrafiltration membrane fibers be monitored. The Hg content of the used membrane fibers is not a concern to Argonne since the total Hg accumulation is minimal based on the overall mass balance calculations on the membrane fibers.

- Argonne does not recommend further pilot testing of the Blue PRO® process until the Hg accumulation in the sand issue is better understood. Argonne recommends that long term testing of the alternative option developed by Argonne, namely, Nalmet® addition prior to the existing sand filters, be conducted prior to any long term Blue PRO® testing. Purdue recommends that if the Blue PRO® process is further considered, long term testing of the Blue PRO® process with Nalmet® addition is needed to determine whether Hg breakthrough would occur.

- Both Purdue and Argonne have concluded that further testing is needed to determine options for appropriate disposal of the ultrafiltration reject, or the backwash from either the Blue PRO® process or the sand filters with Nalmet® addition, which contains concentrated levels of Hg.

- The variability exhibited by samples has been identified as a concern. Argonne suggests that future pilot work should consider the use of grab samples for the rapid preliminary assessment of pilot performance and that these grab samples be supplemented with the use of composite sampling in order to obtain more representative samples and improved process analysis.

- Argonne and Purdue have some operational concerns with pilot unit availability and reliability. The impacts from these are recommended to be closely monitored during further testing.

BP's Next Steps of Evaluation:

Based on these recommendations, and a detailed review of the Purdue Argonne reports, BP proposes the following activities during the next phase of the evaluation:

Both Purdue and Argonne recommend a longer term pilot of ultrafiltration technology. Consistent with the requirements of our permit, BP Whiting will commence a pilot demonstration unit to further review the ultrafiltration (or similar) technology. Operation of the pilot demonstration unit of similar size as the Purdue/Argonne pilot will begin by August 1, 2013. Completion of the pilot demonstration and submission of the final report to IDEM will occur by March 1, 2015. The pilot demonstration evaluation will include the following:

- Because sampling variability has been identified as a significant issue, a longer duration sampling plan with composite and grab samples will be developed and implemented to further evaluate mercury speciation and representativeness in the pilot feed and effluent.

- The evaluation of options for the treatment and disposal of the reject stream will be integrated into the testing plan.

- Performance under varying weather and process conditions as well as reliability operability, and feasibility will be reviewed. The report to IDEM will summarize the results of the pilot demonstration including reliability and feasibility and further recommendations.

Both Purdue and Argonne recommend further evaluation of chemical additive effects with sand filtration. Argonne recommends reviewing these effects before any long term pilot study is implemented for the Blue PRO® reactive filtration technology. In addition BP will evaluate effects of the new Brine Treatment Unit planned to be on line in first quarter 2013 in combination with the new final sand filters to determine any additional mercury removal. Completion of the evaluation and submission of the final report to IDEM will occur by March 1, 2015.

- Evaluation of the effectiveness of the Brine Treatment Unit and the new sand filters in removing mercury will be performed in 2013-2014. Additional benefits from the usage, optimization of dosage, and potential side issues (e.g. toxicity) from the use of precipitants

such as Nalmet® 1689 will be evaluated. Mercury accumulation in the sand filters, as well as capacity before breakthrough, will be monitored and options for the treatment of the backwash stream will also be evaluated. BP will monitor arsenic, benzo(a)pyrene and vanadium from Brine Treatment System to determine the treatment effectiveness on these parameters in addition to Mercury. For permit requirements, see Part IV. H. of the permit.

- Performance under varying weather and process conditions as well as reliability operability, and feasibility will be reviewed. The report to IDEM will summarize the results of the study including reliability and feasibility and further recommendations.

To further address the Evaluation of Wastewater Treatment Technologies for Mercury Removal a Part IV.E. of the permit has been added to put more specific requirements into the permit related to Mercury Removal Technologies.

Term of SMV

The SMV and the interim discharge limit included in Part I.A.1., Discharge limitations Table, will remain in effect until the NPDES permit expires under IC 13-14-8-9 (amended under SEA 620, May 2005). Pursuant to IC 13-14-8-9(d), when the NPDES permit is extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

Annual Reports

The annual report is a condition of the Pollutant Minimization Program Plan (PMPP) requirements of 327 IAC 5-3.5-9(a)(8). The annual report must describe the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report may also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP may be submitted as part of the annual report. The permittee will submit the annual reports to IDEM on the anniversary of the effective date of this NPDES permit renewal.

SMV Renewal

As authorized under 327 IAC 5-3.5-7(a)(1), the permittee may apply for the renewal of an SMV at any time but not less than 180 days prior to the expiration of the NPDES permit. In accordance with 327 IAC 5-3.5-7(c), an application for renewal of the SMV must contain the following:

- All information required for an initial SMV application under 327 IAC 5-3.5-4, including revisions to the PMPP, if applicable.
- A report on implementation of each provision of the PMPP.
- An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the NPDES permit in order to determine a representative mercury discharge concentration to become the interim limit.

- A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the department according to 327 IAC 5-3.5-8(b) based on the most recent two (2) years of representative sampling information from the facility. A review of the Mercury data submitted to IDEM from January 1, 2012 to the most recent data submittal indicated that the highest reported Mercury concentration is 8.75 ng/l. IDEM has determined that this concentration will be the interim mercury effluent limit and this will replace the existing interim limitation of 23.1 ng/l.

Renewal of the SMV is subject to a demonstration showing that PMPP implementation has achieved progress toward the goal of reducing mercury from the discharge. IDEM has reviewed the SMV renewal request and PMPP, and have determined that BP has met all of the PMPP requirements up to this point. BP is scheduled to begin operation of a pilot demonstration unit of similar size as the Purdue/Argonne pilot within eighteen (18) months of the NPDES permit modification incorporating the SMV (August 17, 2013). The effluent characteristics still indicate that the concentration of Mercury in individual samples taken of the effluent from Outfall 005 have not exceeded 8.75 since December 2011. Therefore, the existing variance limit of 23.1 ng/l will be replaced in the final permit with 8.75 ng/l in this permit renewal.

Pollutant Minimization Program Plan (PMPP)

The PMPP is a requirement of the SMV application and is defined in 327 IAC 5-3.5-3(4) as the plan for development and implementation of Pollutant Minimization Program (PMP). The PMPP is defined in 327 IAC 5-3.5-3(3) as the program developed by an SMV applicant to identify and minimize the discharge of mercury into the environment. PMPP requirements (including the enforceable parts of the PMPP) are outlined in 327 IAC 5-3.5-9. In accordance with 327 IAC 5-3.5-6, the permittee's PMPP is hereby incorporated within this permit below:

1. Within 6 months from the effective date of the permit modification to incorporate the SMV requirements (Due date of August 17, 2012), BP will conduct a review of the reports from the Purdue/Argonne pilot study conducted at the Whiting Refinery and submit a report to IDEM summarizing recommendations for further evaluation steps to reduce the discharge of Mercury from the Whiting Refinery. ***This requirement has been achieved by BP.***

   If a particular mercury removal technology is recommended for an additional pilot demonstration after completion of the Purdue/Argonne pilot studies conducted at the Whiting Refinery, BP Whiting would commence a pilot demonstration unit to further review the recommended technology(ies) according to the following schedule:

   a. Begin operation of such pilot demonstration unit of similar size as the Purdue/Argonne pilot within eighteen (18) months of the NPDES permit modification incorporating the SMV (August 17, 2013).

   b. Complete the pilot demonstration and submit a final report to IDEM within thirty-six (36) months of the NPDES permit modification incorporating the SMV (March 01, 2015). More specific details can be found in Part IV of the permit.

The pilot demonstration evaluation will include at least the following: performance under varying weather and process conditions, evaluation of options for waste streams, and reliability, operability, and feasibility. The report to IDEM shall summarize the results of the pilot demonstration, including reliability and feasibility of the piloted mercury removal technology, and recommendations for the next phase of review. The final permit includes new language on the evaluation of wastewater treatment technologies for Mercury Removal. This can be found in Part IV.E., F., and G. of the permit.

2. By March 1, 2015, BP will submit a report to IDEM that will include an evaluation of the mercury reduction of the new Brine Treatment unit and final filters that are being installed at the Whiting Refinery. The evaluation will include at least the following: performance under varying weather and process conditions, evaluation of option for waste streams, and reliability, operability and feasibility. The report to IDEM shall summarize the results of the evaluation, including reliability and feasibility of the mercury removal, and recommendation for the next phase of the review. These details are now included in Part IV. of the permit.

3. Within 18 months from the effective date of the permit modification to incorporate the SMV requirements (August 17, 2013), BP will complete the review and identification of mercury containing chemicals or additives that are used in the operations and processes which have the potential risk of entering the process wastewater sewer system.

4. Within 18 months from the effective date of the permit modification to incorporate the SMV requirements (August 17, 2013), BP will compile a complete inventory of all equipment containing mercury that have the potential risk of charging mercury to the process wastewater sewer system, including the estimated mercury content from the vendor and supplier information as well as location of such equipment.

5. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will perform an assessment of the mercury content of the sediment in the main process sewer legs that are part of the current sewer cleaning program.

6. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will complete an assessment of identified process unit wastewater discharges from sources within the refinery that may contain mercury at detection levels utilizing process knowledge, previous analysis or with new analysis if warranted.

7. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will develop a prioritized schedule for the cleaning of the sewers incorporating any significant impacts found from the results of the sewer system characterization study. The sediment and mercury removal progress will be reported in the annual reports.

8. Within 36 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2015), BP will complete the detailed inventory list of

process chemicals or additives containing mercury, equipment containing mercury and process discharges that contain mercury

9. Within 36 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2015), BP will develop a procedure utilizing a ranking method to identify the high-risk equipment and process chemicals for mercury exposure and alternatives that are feasible for their replacement. Then mercury containing chemicals and equipment will be replaced or substituted with chemicals or equipment containing less mercury or no mercury.

6.5 Spill Response and Reporting Requirement

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.(d), Part II.B.3.(c), and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

6.6 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish a general notice in the newspaper with the largest general circulation within the above county. A 30-day comment period is available in order to solicit input from interested parties, including the general public. Comments concerning the draft permit should be submitted in accordance with the procedure outlined in the enclosed public notice form.

7.0 ATTACHMENT: POST PUBLIC NOTICE ADDENDUM: September 2013

The draft NPDES permit for the BP Products North America, Whiting Refinery was made available for public comment from March 28, 2013 through April 29, 2013 as part of Public Notice No. 2012-3K-RD/ATEL. During this comment period, IDEM received three written comment letters.

The first comment letter dated April 28, 2013, was received from and endorsed by the following environmental organizations: National Resources Defense Council, Alliance for the Great Lakes, Save the Dunes, Hoosier Environmental Council, Isaak Walton League - Porter County Chapter and Sierra Club – Hoosier Chapter. These are identified as comments 1 through 37.

The second comment letter dated April 29, 2013, was received from BP Products North America, Whiting Refinery signed by Ms. Linda Wilson, Environmental Superintendent of the Whiting Business Unit. These are identified as comments 39 through 64.

The third comment letter was from Mr. Don Wilson dated June 14, 2013. This comment is comment 65.

The comments submitted by the environmental organizations, Mr. Wilson and BP Products North America – Whiting Refinery, and this Office's corresponding responses are summarized below. Any changes to the permit and/or fact sheet are so noted below.

Comment 1:

I. Stormwater

The Draft Permit requires, "within 12 months from the effective date of this permit, the permitee is required to revise and update the current Storm Water Pollution Prevention Plan (SWP3)." However, the Fact Sheet expressly states that [t]he requirement to prepare a SWP3 is not an effluent limitation." Fact Sheet at 32. Hence, there is no provision in the Draft Permit requiring either review of the SWP3 by IDEM, or allowing for public comment on it. The Permit does not even require that the SWP3 be submitted to IDEM, so that interested members of the public can review it.

For the reasons set forth below, this understanding of the legal nature of a SWP3, and concomitant failure to provide for review and comment, are directly at odds the CWA requirements defined in federal judicial determinations governing pollution control plans of this nature. The Clean Water Act ("CWA" or "Act") requires that the SWP3 be treated as part of the Permit in every respect. That said, at the very least, IDEM could have required that the SWP3 be provided to it, rather than simply held onsite by BP where the public has no ability to review it – which would be legally inadequate but at least a positive step in the right direction.

A. IDEM Should at Minimum Require Submittal of the SWP3

We are mindful of the concern expressed by IDEM that SWP3s must be flexible, and should not be inhibited by overly rigid public comment or agency review procedures. However, this concern is not grounds to simply ignore altogether the legal requirements applicable to SWP3s. IDEM could, at minimum and as a gesture of good faith, take steps to address the underlying concerns that prompted the judicial rulings concerning SWP3s described in the previous section, while still maintaining flexibility for amendment of SWP3s as necessary. While such action would not bring the Permit into compliance with the CWA, it would at least be a step in the right direction.

If IDEM took even the modest step of requiring that BP provide it with a current copy of the SWP3, the public would at least be able to submit a Public Records Act request for the document and review it. Commenters understand that SWP3s may potentially be updated with some frequency (although we do not know that to be the case with respect to BP's SWP3, as none of us has seen it). Although it would be ideal if each such iteration were submitted to IDEM and available to the public, even periodic reporting of an updated version of the SWP3 would at least provide the public with a sense of what specific steps are being taken onsite, and how those steps may have evolved over time.

We note, in this regard, that U.S. Steel readily agreed in 2009, despite IDEM's resistance, to make its SWP3 public. In an agreement executed shortly after the final permit was issued,

U.S. Steel agreed not only to provide the citizens with a copy of its SWP3, but agreed to promptly provide them with updates to the SWP3 as well. Clearly, the company did not consider this limited requirement to be an undue burden, or a constraint on its flexibility in amending the SWP3. IDEM should mandate the same here, as the public's ability to view the SWP3 – a minimal portion of a much broader set of legal requirements concerning SWP3s – should not depend on any particular permittee's goodwill and agreement.

Finally, IDEM's assertion in the Fact Sheet that the SWP3 maintained at the Refinery can be made available on request to IDEM is not consistent with past practice in Commenters' experience. The Fact Sheet states,

> Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and it must be immediately available, at the time of an onsite inspection or upon request, to IDEM. Additionally, interested persons can request a copy of the SWPPP through IDEM. By requiring members of the public to request a copy of the SWPPP through IDEM, the Agency is able to provide the permittees with assurance that any Confidential Business Information contained

within its SWPPP is not released to the public.

Commenters filed two public records requests with IDEM prior to submitting these comments, both requesting disclosure of Applicant's SWPPP for the subject facility. Neither of these requests was granted by IDEM, and the facility's SWPPP was never disclosed to Commenters.

Response 1:

The permit includes numeric effluent limitations for Total Organic Carbon based on the technology based effluent limitations for the Lube Subcategory found in 40 CFR 419.23(f) and Oil and Grease based on IDEM water quality standards. These limits are considered best professional judgement. IDEM has revised Part I.D of the permit. This provision now includes special conditions which implement the SWPPP and are necessary to meet the numeric effluent limitations for Outfalls 003 and 004. These provisions were previously included in Part I.D (Storm Water Pollution Prevention Plan Requirements) of the 2007 permit. This provision is consistent with 40 CFR 122.44(k)(4)(regarding the use of storm water controls that are reasonably necessary to achieve the effluent limits and standards or to carry out the purposes and intent of the Clean Water Act).

Because of staff workload and resources, generally, IDEM does not require the SWP3s to be submitted to our office. They are kept on site and available to IDEM/EPA inspectors to review during site visits. However, in this case, IDEM has modified the permit in the General Requirements portion of the SWP3 in Part I.E. of the permit to require BP to submit a copy of the SWP3 to the Industrial NPDES Permit Section. In addition the following language was added to the Storm Water Special Conditions Section Language in Part I.D. of the permit:

At least once every 12 months from the effective date of this permit, BP must review the selection, design, installation, and implementation of the control measures to determine if modifications are necessary to meet the effluent limitations in this permit. BP must document the results of each review in a report that shall be retained within the SWP3. BP must also submit the report including any updates to the SWP3 to the Industrial NPDES Permit Section on an annual basis, no later than April 1st of each year. The SWP3 will then include the updated non-numeric effluent limitation requirements.

Comment 2:

Condition I.D.1 Undermines the Required BAT/BCT/BPT Stringency of Non-Numeric Stormwater Effluent Limitations and Monitoring Requirements

The statutory basis for the required effluent limitations for stormwater control are found in the Act's requirements for technology-based effluent limitations ("TBELs") and in IDEM's rules for applying those requirements. When determining what level of effluent control limitation should be achieved by the non-numeric

stormwater effluent limitations and monitoring requirements, Applicant is bound by the CWA regulatory provisions and Indiana rule requirements on what stringency constitutes BAT/BCT/BPT.

Condition I.D.1 is an unsatisfactory description of the statutory level of required BAT/BCT/BPT-level control of stormwater effluent, for two reasons. First, the condition language focuses the inquiry on what stormwater control measures are "technically available" rather than on what measures are "technically achievable" in addressing the technology-forcing aspects of BAT/BCT/BPT effluent limitation control. Second, it introduces the phrase "in light of industry practice." Since selection of BAT/BCT/BPT effluent limitation control stringency already considers alternative control methods in the determination of the required stringency of controls, restricting consideration of available controls only to the petroleum refining industry as articulated in a 'best industry practice' is a restriction on the scope of application of all available controls on stormwater that is inconsistent with a properly carried out BAT/BCT/BPT effluent limitation control stringency determination.

Response 2:

This permit contains effluent limits that correspond to required levels of technology-based control (BPT, BCT, BAT) under the CWA. Where an effluent limitation guideline or NSPS applies, the requirement must be incorporated into the permit as an effluent limitation. These limits are included as applicable in the permit. Where EPA has not yet issued an effluent limitation guideline, the appropriate technology-based level of control is to be determined based on best professional judgment. CWA section 402(a)(1); 40 CFR § 125.6. The draft permit conatins numeric effluent limits based on BPJ. The provisions at issue have been removed from the permit.

Comment 3:

BAT/BCT/BPT-Compliant Stormwater Non-Numeric Effluent Limitation Controls as Required Work Practices are Not Enforceable in the Absence of Work Practice Record-Keeping Requirements

IDEM's Draft Permit contains no work practice record keeping requirements in association with the non-numeric stormwater effluent limits contained in Section I.D. of the Draft Permit. When BAT/BCT/BPT stormwater effluent limitations are stated as required work practices, such effluent limitations are not enforceable when no 'monitoring' in the form of record keeping requirements are imposed in carrying out the mandatory work practices stated in the stormwater control effluent limitations section.

Response 3:

Both Parts I.D. and I.E. have requirements for documentation and reporting in order to demonstrate compliance.

Comment 4:

IDEM Must Require Best Available Technology for Nonconventional and Toxic Pollutants as Determined by Best Professional Judgment Review

Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 & 1342, require IDEM to establish numeric effluent limitations based on BAT for non-conventional and toxic pollutants discharged by the Refinery before issuing any NPDES permit that authorizes such discharges. *See* 33 U.S.C. § 1311(b)(2)(A)(i) (point sources "shall" achieve "effluent limitations" that "shall require application of" BAT to reduce pollutant discharges to the maximum extent "technologically and economically achievable," including "elimination of discharges of all pollutants" if it is achievable); *id.* § 1342(a)(1) (requiring that NPDES permits may only be issued "upon condition that" they ensure that, *inter alia*, the requirements in 33 U.S.C. § 1311 are met).

Federal regulations promulgated by USEPA likewise require that "[t]echnology-based treatment requirements under Section 301(b) of the [CWA] represent the minimum level of control that *must be imposed*" in a NPDES permit. 40 C.F.R. § 125.3(a) (emphasis added). BAT is a stringent treatment standard that has been held to represent "a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 74 (1980).3

Because USEPA's applicable Effluent Limitation Guidelines ("ELGs") for Petroleum Refineries[4] do not yet include BAT limits for specific pollutants discharged by Applicant's petroleum refinery facility, USEPA regulations require IDEM to use its best professional judgment ("BPJ") to set BAT TBELs for these discharges. 40 C.F.R. § 125.3(c)(2), (d) ("to the extent that EPA-promulgated effluent limitations are inapplicable," NPDES permit writers "*shall apply* the appropriate factors listed in § 125.3(d)" to set case-by-case technology-based effluent limitations based on BPJ) (emphasis added); *see also* 327 IAC 5-5-2.

The Refinery was an existing source as of the date of the 1972 passage of the CWA amendments creating the BAT requirement for such existing sources, including the required case by case BAT effluent limitations determined through BPJ for nonconventional and toxic pollutants. Under these provisions, IDEM was required to bring the Applicant into compliance with BAT-BPJ requirements through imposition of effluent limitations in permits by a date not later than March 31, 1989.[6]

IDEM itself acknowledges in the Fact Sheet its obligation to establish BAT TBELs based on BPJ under Clean Water Act § 301, and that this obligation is separate and independent from its obligation to establish water quality based effluent limitations ("WQBELS") under Act § 302. The Department stated as follows:

> Two categories of effluent limitations exist for NPDES permits: Technology- Based Effluent Limits (TBELs) and; Water Quality-Based Effluent Limits (WQBELs). TBELs are developed by applying the

> National Effluent Limitation Guidelines (ELGs) established by USEPA for specific industrial categories TBELs are the primary mechanism of control and enforcement of water pollution under the Clean Water Act (CWA). Technology based treatment requirements under section 301(b) of the CWA represent the minimum level of control/treatment using available technology that must be imposed in a section 402 permit [40 CFR 125.3(a)].
>
> In the absence of ELGs, effluent limits can also be based upon Best Professional Judgment (BPJ). Accordingly, every individual member of a discharge class or category is required to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. This means that TBELs based upon a BPJ determination are applied at end-of-pipe and mixing zones are not allowed [40 CFR 125.3(a)]. Similarly, since the statutory deadlines best practicable technology (BPT), best available technology economically achievable (BAT) and best conventional control technology (BCT) have all passed; compliance schedules for these TEBLs are also not allowed. WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology.

Fact Sheet at 21-22. This statement was specifically made with respect to mercury, but IDEM presents no reason – because none exists – why this law does not apply equally to other pollutants covered by 33 U.S.C. § 1311(b)(2)(A)(i).

IDEM's Failure to Set BAT-BPJ Limits Leaves Multiple Pollutants with No Limits at All

IDEM was required to ensure Applicant's refinery wastewater discharges complied with BAT-BPJ emission limitations contained in an issued NPDES permit for non-conventional and toxic pollutants [for which no effluent limitations guidance was published] by 1989.

However, Applicant's currently effective 2007 NPDES Permit shows IDEM failed to comply with required BAT-BPJ effluent-limitation-setting requirements for several pollutants known to be discharged by Applicant's facility and many other petroleum refineries.

The obligation applies regardless of the fact that IDEM has deferred applicability of the WQBELs in BP's 2007 permit based on construction of the diffuser. The Act does not allow the timetable for applicability of these WQBELs to impact or diminish he obligation to set TBELs. The statutory authority for establishing WQBELs in NPDES permits provides:

> "(c) Delay in application of other limitations.

> The establishment of effluent limitations under this section shall not operate to delay the application of any effluent limitation established under section 1311 of this title."

33 U.S.C. §1312(c). IDEM's delay in setting WQBELs, and ultimate determination not to do so, therefore may not "...operate to delay the application of any effluent limitation established under section 1311." IDEM's determinations concerning WQBELs do not alter the fact that the Department has to date imposed no TBELs for the subject pollutants.[8]

By implementing the diffuser, the Applicant was effectively allowed to free itself of *all* limits – not only WQBELs, but also any TBELs, since IDEM has expressed no intention (in 2007 or now) to establish them. Specifically, removal of the WQBELs and the effluent monitoring requirements for benzo(a)pyrene, chloride, total copper, total dissolved solids, fluoride, total lead, total selenium, total strontium and sulfate meant no effluent limitations at all neither WQBELs or TBELs – as well as no monitoring requirements were in place for these pollutants.

Commenters note, in addition, that the diffuser cannot be considered BAT providing the basis for a TBEL determination. EPA rules provide that "(e) Technology-based treatment requirements are applied prior to or at the point of discharge." 40 C.F.R. 125.3(e).

B. TBEL Requirements Must Be Established Notwithstanding the Refinery ELG

The Refinery Effluent Limitation Guideline issued in 1979 for petroleum refineries ("Refinery ELG"), while it purported to regulate certain metals through indicator pollutants, made very clear that permitting agencies retain the authority and the duty to regulate unlisted pollutants. It stated in the preamble to the draft ELG (Exhibit 2),

> [T]he fact that these regulations do not control a particular pollutant does not preclude the permit issuer £rom limiting such pollutant on a case-by-case basis, when necessary to carry out the purposes of the Act. In addition, to the extent that state water quality standards or other provisions of state or Federal law require limitation of pollutants not covered by the regulations or require more stringent limitation on covered pollutants, such limitations *must* be applied by the permit issuing authority.

44 Fed. Reg 74525, 74536 (December 21, 1979) (emphasis in original). The preamble further made clear,

> It should be noted that the limitations in this regulation has been developed to cover the general case for this industry. In specific cases, it may be necessary for the NPDES permitting authority to establish permit limits on toxic pollutants which are not subject to limitations in this

regulation.

Id. Clearly, such regulation is required here, where the Refinery has specifically been shown to be discharging the pollutants at issue notwithstanding the controls on the purported indicators. In any event, the ELG preamble was silent as to the ability of controls on pollutants covered in the ELG to collaterally control several of the pollutants listed above. Although it asserts that U.S. EPA "believes that the technology upon which BAT effluent limitations for phenol . . . and chromium are based will effectively control the organic and metallic toxic pollutants listed in Appendix D," Appendix D does not include chloride, fluoride, strontium, or sulfate.

IDEM Failed to Set BAT-BPJ Effluent Limitations for Non-Effluent-Limitation-Guidance-Listed Toxic and Nonconventional Pollutants as Required

The Public Notice, Draft Permit and Fact Sheet contain no TBELs based on BAT-BPJ for non-ELG-listed pollutants of concern. Specifically, Outfall #005 of the Draft Permit contains no BAT-BPJ effluent limitations for selenium, sulfate, total dissolved solids, chlorides, arsenic, lead, manganese, strontium, copper and arsenic.[9]

Additionally, the Draft Permit contains no BAT-BPJ effluent limitation for nitrates. As discussed *supra*, while Applicant implausibly claims to discharge no nitrates, it is evident that Applicant likely discharges over 300,000 lbs. of nitrates per year.

The Draft Permit also contains no BAT-BPJ effluent limitation for total residual chlorine on Outfall #005. Applicant claims it as "believed absent" in the August 2012 permit application. However, Applicant submitted a pre-expansion water flow diagram showing 7.56 MGD of inlet flow which has previously been chlorinated before introduction to the refinery supply main. Under such circumstances the Applicant should be at least required to monitor total residual chlorine on a regular basis unless there is a valid process-related reason for considering that all such reactive chlorine reacts with wastewater hydrocarbons to form other toxicant species within the wastewater system.[10]

Finally, the effluent limitation table of Outfall #005 contains no thermal limitations or thermal monitoring requirements

Response 4:

The NPDES regulation in 40 CFR 125.3 states that permits developed on a case-by-case basis under section 402(a)(1) of the CWA must consider (1) the appropriate technology for the category class of point sources of which the applicant is a member, based on all available information, and (2) any unique factors relating to the applicant. To set BPJ limits, a permit writer must first determine a need for additional controls beyond existing ELGs. The need for additional controls may be the result of the facility not falling under any of the categories for which ELGs exist or discharging pollutants of concern that are not directly or indirectly addressed by the

development of the ELG. It should be noted that prior to establishing BPJ based limits for a pollutant not regulated in an effluent guideline, the permit writer should ensure that the pollutant was not considered by EPA while developing the ELGs.

The EPA-promulgated effluent limitation guidelines for this category of discharger were developed after considering all of the pollutants found in petroleum refinery wastewater and determining the best pollutant parameters to control and limit in the discharge. The federal effluent limitation guidelines did not establish technology based effluent limitations for all pollutants potentially found in petroleum refinery wastewater because they determined it was not necessary or infeasible due to lack of technology or appropriately sensitve test methods i.e. that could allow facility to quantify effluent pollutant levels. Ensuring that BAT is being applied to the wastewater can be achieved through limitations on a specific selection of pollutants.

In 2004, EPA developed a Technical Support Document (TSD) for the Petroleum Refining Industry to support the federal effluent limitation guidelines for this industrial category. The TSD shows how EPA evaluated new information about pollutants that are potentially present in petroleum refining wastewater but not currently limited by the federal effluent limitation guidelines.

A review of the EPA technical support document demonstrated that the Effluent Limitation Guidelines for petroleum refining contains effluent limitations for the appropriate pollutants since EPA did not find it necessaryto modify the Effluent Limitations Guidelines at that time.

IDEM has considered all comments regarding the need to develop case by case BPJ/BAT effluent limits for pollutants found in petroleum refinery wastewater that do not have effluent limits established by the federal effluent limitation guideline for petroleum refining. IDEM has concluded that the existing effluent guideline sufficiently regulates the technology based effluent limitations at this timeand that additional technology based effluent limitations are not necessary.

BP has been modifying their treatment system, including the addition of new tertiary sand filters to reduce TSS to meet water quality based effluent limitations. The new filters have already shown improved treatment performance for TSS. In order to further assess the overall improved treatment performance at the BP Whiting Facility, IDEM has included additional monitoring requirements for some of the pollutants of concern at Outfall 005. IDEM has added the following parameters to the discharge table at Outfall 005 to be monitored at a 2 X Monthly basis: Selenium, Sulfate, Total Dissolved Solids (TDS), chlorides, arsenic, lead, manganese, fluoride, strontium, copper, benzo(a)pyrene, Total Residual Chlorine, and nitrate-nitrite.

Regarding the commentor's thermal concerns, because of how the diffuser impacts the mixing zone, IDEM is confident that the temperature of the effluent from the diffuser will have no negative impacts on the wildlife surrounding Outfall 005. However, to be certain, the permit will require BP to monitor the temperature from Outfall 005 once every month.

Additionally, annual biological surveys of the area surrounding the diffuser have not identified any negative impacts on the wildlife in the vicinity of the diffuser and these annual biological surveys are required during year 1, 3 and 5 of the re-issued permit.

Comment 5:

Mercury

Commenters appreciate all of the effort that BP has made, in collaboration with Argonne National Laboratory and the Purdue-Calumet Water Institute ("Argonne"). We are pleased to see that the evaluated technologies succeeded in removing mercury down to the applicable water quality standard of 1.3 µg/L at both the bench-scale and pilot-scale levels.

At the same time, we are concerned that the renewed NPDES permit issued to BP fully reflect the results achieved by Argonne, and require that they be implemented as soon as possible. Specifically, the re-opener provision must clarify the parameters for determining when the control technology is sufficiently developed so as to require that it be implemented to meet a TBEL. Compliance with this requirement is particularly urgent give that the streamlined mercury variance ("SMV") granted to BP, pursuant to applicable regulations, allows a mercury discharge an order of magnitude higher than the WQBEL limit. The permit must make clear that BP cannot be allowed to indefinitely study the problem if technology is available to reduce its mercury discharge. Additionally, the language describing the next phase of pilot testing should incorporate the specific recommendations from the Argonne research.

Response 5:

Both the Argonne National Laboratory and the Purdue-Calumet Water Institute recommended that further testing be performed at the BP Whiting Refinery before any conclusions are drawn on the appropriate treatment technology to be used for removing mercury from BP's wastewater. IDEM agrees with the commenters that the draft permit's provisions needed to be modified to better reflect Argonne's and Purdue's recommendations. Consequently, IDEM has worked with BP to reach agreement on more thorough permit language to adequately specify the steps that BP will take to (1) study mercury treatment technologies and (2) report the results of that study to IDEM by March 1, 2015. Part III.E of the permit has been substantially revised to include the more thorough permit language that BP has agreed to.

IDEM also agrees that BP should not be allowed to indefinitely study ways to reduce mercury if technology is available to reduce its mercury discharges, and so the permit retains Part I.F.4 from the 2012 permit modification, which states as follows:

> If a treatment technology for the removal of mercury from wastewater is identified and is determined by IDEM to be available and economically viable,

then BP must install and fully operate that treatment technology as soon as possible. Within 6 months after IDEM's determination or the final disposition of any appeal of such determination, whichever is later, BP shall submit a schedule, subject to IDEM approval, for the installation and operation of the identified treatment technology that is as expeditious as possible. Any such determination shall be considered final agency action, which BP may appeal. Upon completion of 12 months of operation, IDEM should modify the permit in accordance with 327 IAC 5-3.5-8 to revise the effective effluent limits for mercury at Outfall 005

IDEM expects that the study that BP performs and the report BP submits to IDEM by March 1, 2015, in accordance with Part III.E of the permit will provide IDEM sufficient information to make the determination called for by Part I.F.4 of the permit that "treatment technology for the removal of mercury from wastewater is . . . available and economically viable." Following such determination, BP will be required to "install and fully operate that treatment technology as soon as possible." Consequently, the permit contains sufficient provisions to address the commenters' concerns that the permit include provisions to ensure that BP is required to install additional mercury treatment technology as soon as possible.

Comment 6:

The Argonne Research Identified Mercury Control Technology on the Cusp of Availability, and Made Specific Recommendations for Further Study

The Argonne researchers looked predominantly at two potential technologies for mercury removal: ultrafiltration ("UF") and reactive filtration ("RF"). Both technologies successfully removed mercury down to 1.3 µg/L. However, UF removed it more consistently than the RF, and there were only minimal technical issues identified with respect to UF that require further exploration.

Regarding the UF technology, the researchers determined,

The UF membrane pilot unit consistently provided permeate that was less than 0.5 ppt Hg, which met and exceeded the treatment target of 1.3 ppt of Hg. This permeate quality was consistently produced at all tested operating conditions and was independent of the feed water characteristics and feed Hg concentration. This confirms the bench-scale Module 3 findings that there is no fundamental physical or chemical barrier in achieving < 1.3ppt Hg in the tested refinery wastewater at the pilot-scale at least under these testing conditions of little dissolved mercury in the pre-ETL (<0.5—1.05 ppt).

Emerging Technologies and Approaches to Minimize Discharges into Lake Michigan, Phase 2, Module 4 Report ("Pilot Test Report") at iv (Joint Executive Summary), attached as Exhibit 3. Argonne provided a full-scale cost estimate that varied between $39 and $174 million for a 40 MGD design capacity process (varying with criteria used in cost calculations).

The RF technology (called Blue PRO), by contrast, was found to meet the 1.3 µg/L goal 92.7% of the time during the pilot test; and after 46 days of operation experienced "mercury breakthrough" in the effluent which reduced its quality. The researchers were able to restore effluent quality after the breakthrough by adding a chemical, Nalmet 1689, to each filter's influent. The researchers noted that the brevity of test conditions limits their ability to draw conclusions regarding this fix. They also noted that mercury accumulation was seen in the filter sand during Nalmet addition, suggesting a potential long-term efficacy problem. Pilot Test Report at iv-v. The Pilot Test Report also noted that adding the Nalmet before the sand filters was an additional potential option that had not been explored in the pilot study. The cost estimate for the RF technology (including Nalmet added to the influent) ranged from approximately $21 million to $38 million.

Based on these results, the Pilot Test Report specified the additional research that was necessary concerning UF and RF. The only additional research identified as necessary for UF, aside from a longer-term pilot study to confirm the initial pilot results, was additional testing "to determine options for the full scale reject stream which collects and concentrates the mercury removed from the effluent." However, with respect to RF, the researchers specifically recommended, in addition to the reject stream evaluation, additional testing of Nalmet addition. Argonne National Laboratory and Purdue-Calumet Water Institute disagreed as to the order in which this testing should proceed, with Argonne researcher recommending long-term testing of adding Nalmet prior to the sand filters before any further testing of the RF (Blue PRO) technology, but Purdue recommending testing the RF process together with Nalmet addition.. The researchers also noted more generally the representative wastewater samples were difficult to obtain through grab sampling, possibly due to the variability of wastewater composition, and suggested using supplemental composite sampling..

On August 16, 2012, pursuant to the PMPP associated with its SMV, BP submitted to IDEM a report summarizing the pilot study and its recommendations. *See* Letter dated August 16, 2012 to Paul Higginbotham, IDEM, from Linda J. Wilson, BP (Exhibit 4) ("August 16 Letter"). BP's summary was consistent with the description provided above. In terms of its next steps, BP agreed to perform the longer-term UF pilot study recommended by Argonne, including evaluation of options for the reject stream, as well as addition of the composite samples. BP stated that the UF testing would commence August 1, 2013 and conclude March 1, 2015. With respect to RF, however, BP's plans were framed less clearly. It appears from the August 16 Letter that the company is generally willing to conduct additional RF tests, but the Letter does not specify whether it will adopt Argonne's recommendation to test the Nalmet addition before the filters in advance of further testing of the Blue PRO technology, or Purdue's recommendation to test the two technologies in tandem. BP also notes that it will test the efficacy of the Brine Treatment Unit in mercury removal.

Response 6:

See the response to Comment 5.

Comment 7:

The Draft Permit Fails to Adequately Incorporate the Argonne Research Findings

The Draft Permit fails to adequately incorporate these detailed findings and recommendations from the Pilot Test Report. The Draft carries over more or less unchanged the provisions concerning mercury removal testing that were included in the revised NPDES permit incorporating the SMV, even though that revised permit (issued February 2012) predated the publication of the pilot test results (March 2012) and BP's subsequent report concerning them (August 2012). As a result, the Draft Permit does not set forth a coherent plan for ensuring both that further pilot testing follows a well-defined plan consistent with the Argonne research, and that the results of the research be used within a reasonable timeframe to establish a TBEL for mercury regardless of whether the WQBEL of 1.3 µg/L can be met. Commenters are very concerned that the Draft Permit in its current form would allow BP to study the issue of mercury control indefinitely, without ever committing to implement available technology.

Incorporation of Argonne Findings into the PMPP

The Draft Permit adds the following requirement to the PMPP:

1. a. BP will begin operation of such pilot demonstration unit of size as the Purdue/Argonne pilot within eighteen (18) months the NPDES permit modification incorporating the SMV 17, 2013).
   b. Complete the pilot demonstration and submit a final report to IDEM within thirty-six (36) months of the NPDES permit modification incorporating the SMV (February 17, 2015). The pilot demonstration evaluation will include at least the performance under varying weather and process conditions, evaluation of options for waste streams, and reliability, and feasibility. The report to IDEM shall summarize the the pilot demonstration, including reliability and feasibility of piloted mercury removal technology, and recommendations next phase of review.

The Draft Permit also adds a requirement, which Commenters support, that BP test mercury removal at the Brine Treatment Unit. The above language tracks essentially word for word the comparable requirement in BP's pre-existing PMPP, without incorporating any of the specific recommendations by Argonne concerning future pilot testing. Commenters therefore recommend the following language for Part IV.D.1. to capture the Argonne recommendations, as acknowledged by BP in the August 16 Letter (added language underlined):

1. a. BP will begin operation of such pilot demonstration unit of similar the Purdue/Argonne pilot within eighteen (18) months of the permit modification incorporating the SMV (August 17, 2013).

b. Complete the pilot demonstration and submit a final report to IDEM within thirty-six (36) months of the NPDES permit modification incorporating the SMV (February 17, 2015). The report to IDEM summarize the results of the pilot demonstration, including feasibility of the piloted mercury removal technology, and recommendations for the next phase of review. The pilot evaluation shall follow the recommendations of the pilot testing issued in March 2012 by Argonne National Laboratory and Purdue-Calumet Water Institute (Argonne) except as described below, and include at minimum the following:

An evaluation of ultrafiltration technology (using GE ZeeWeed® Technology, 0.04 µm pore size and made up of PVDF) for particulate mercury removal, lasting at least 6 months, and using the protocols and methods employed by Argonne.

(i) An evaluation of the Blue PRO® reactive filtration process for both particulate and dissolved mercury removal, lasting at least 6 months.

(ii) An evaluation of the use of Nalmet® in conjunction with Blue PRO, including but not limited to addition of Nalmet® before BP's sand filters. Such testing shall be conducted either prior to further evaluation of Blue PRO or in conjunction with such evaluation; and BP shall explain in detail in its final report to IDEM the basis for its determination whether to conduct the Nalmet® testing before or in conjunction with further Blue PRO evaluation.

(iii) An evaluation of options for handling of mercury-containing full scale reject and backwash streams.

(iv) Use of grab samples supplemented by composite sampling for rapid preliminary assessment of pilot performance.

(v) Evaluation of performance under varying weather and process conditions, evaluation of options for waste streams, and reliability, operability, and feasibility.

Setting forth this level of specificity will ensure that BP proceeds in its research down a path that is likely to lead to a determination in the reasonably near term concerning permanent installation of mercury control technology. The language above does not create new or restrictive requirements, but merely reiterates the Argonne recommendations acknowledged by BP. To the extent BP may have reason not to follow the Argonne recommendations, it should be required to explain to IDEM and the public their reasoning and basis for an alternative approach.

That said, Commenters remain open to discussing the recommended wording above with IDEM and BP to the extent there are any specific issues raised concerning it. In particular, there are several mercury removal technologies evaluated in the USEPA Draft Report (*see infra* next subsection) that were not considered by Argonne, that USEPA considers to be fully available. To the extent any of those technologies could potentially be deployed at the Refinery to treat its particular effluent, those technologies should be evaluated as well. (Commenters understanding is that the Argonne researchers focused on the UF and RF technologies as particularly appropriate to BP's waste stream.)

Response 7:

See Response to Comment 5.

In regards to further studies of reactive filtration and specifically the Blue PRO® reactive filtration technology, IDEM agrees with BP that further testing of that specific system is not warranted at this time. This is based in part upon the information generated by Argonne /Purdue studies in regards to the use of plain sand versus ferric sulfate coated sand as media in a non-membrane filter and the mercury removal achieved by plain sand being comparable to the coated sand. As described in the revised Section E of the permit, BP will further test the addition of precipitants prior to the final filters. BP is also further studying the mercury levels in commercially available ferric sulfate to determine whether it may add more mercury than it removes from the the effluent and will conduct further testing if warranted.

Comment 8:

Incorporation of Argonne Findings into the Re-opener Provision

The discharge limit in the current permit and Draft Permit is extraordinarily high. While commenters recognize that it is based up the SMV criteria set forth in applicable regulations, the fact remains that this limit – 23.1 µg/L – is close to twenty times higher than the applicable WQBEL. What is more, this limit is an annual average, with no daily maximum limit.

This situation is untenable past the short term as both an environmental and a legal matter. Regardless of the legality of granting the SMV initially (Commenters' concerns with the Indiana SMV regulations are beyond the scope of these comments), the Clean Water Act is clear and IDEM has acknowledged – that, regardless of applicable WQBEL requirements and any variance that may be granted from them, the discharger has a separate, independent obligation to impose a TBEL based on a BPJ determination of BAT. *See supra* Section II. In this regard, Commenters note that the 1979 Refinery ELG is silent concerning control of mercury discharges, leaving no indication that technology-based mercury controls – which are only emerging three decades later in the Argonne research – were ever considered. Additionally, the Refinery ELG, which was last amended in 1985, did not consider and could not have

considered today's prevalence of tar sand crude feedstocks with considerably higher levels of toxic metal constituents than conventionally produced crude. Refineries processing conventional crude were the overwhelming subject of the original Refinery ELG.

It is therefore imperative that mercury control technology be required as a TBEL as soon as it is available. It is not relevant to BAT-BPJ analysis whether that technology is capable of consistently achieving the WQBEL limit, since the WQBEL requirement is wholly separate from the TBEL requirement. Thus, to the extent any technology is determined capable of reducing BP's mercury discharge – whether to the WQBEL level or above it – BP must be required to implement that technology if it meets the criteria set forth in 40 C.F.R. § 125.3(d)(3) for a determination of best available technology.

It is clear from the Argonne research that at least one form of mercury control, UF, is capable substantially reducing the effluent in BP's mercury, and is on the cusp of being ready to deploy at the Refinery. As discussed above, the UF technology consistently achieved a level of mercury in the refinery's discharge that exceeded the quality necessary to meet the WQBEL, and Argonne found "no fundamental physical or chemical barrier" to meeting that standard. Pilot Test Report at iv. The only significant research required to be done at this point to confirm the suitability of this technology is a 6 month pilot test, and an evaluation of options for addressing the reject stream. The RF technology, by contrast, removed mercury less effectively (achieving the WQBEL level only 92.7% of the time), and its efficacy deteriorated over time so as to require the addition of NALMET. The NALMET addition requires further study, and the Argonne National Laboratory researchers have recommended an extended two-phase time frame for such study (study of NALMET addition before the sand filters; and if that testing is successful the subsequent testing of Blue PRO together with NALMET). The RF technology thus appears farther from becoming available than the UF technology.

The RF technology also appears to be potentially less expensive than the UF technology. There is no legal basis, however, for allowing indefinite delay to allow a new, less costly technology to emerge rather implementing a technology that is immediately available. Pollution removal technology prices frequently decline over time, but the Clean Water Act does not define "best available technology" as what may be "best" in the future, but rather as what is "available" now to make progress toward the Act's goals. *See* 33 U.S.C. § 1311(b)(2)(A)(i) (point source pollutant discharge "shall require application of the best available technology economically achievable for such category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants"). While cost may be considered as one of several factors in the BPJ determination of BAT, *see* 40 C.F.R. § 125.3(d)(3), the test is a stringent one. BAT has been held to represent "a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 74 (1980). Thus, the relevant question in determining BAT is not whether the RF technology may ultimately prove less expensive than the UF technology, but whether the UF technology is available, most effective, and capable of being deployed using the "maximum resources economically possible."

In this regard, we note that it is particularly imperative here that new economic analysis of mercury control technology in the context of a BAT determination be conducted as soon as possible given that the economic analysis upon which the Indiana SMV program is predicated is woefully outdated. In adopting its SMV procedures, Indiana purported to comply with the requirement in 40 C.F.R. § 132 Appendix F it consider the cost criterion for a variance ("substantial and widespread economic and social impact") by making a one-time determination that, given the cost of mercury control technology, that criterion would apply. The State concluded that costs of compliance with the mercury water quality standard would be prohibitive, and relies regulated community comments in support of that conclusion. Those comments rely on a 2002 report by the Association of Metropolitan Sewage Agencies, and a 1997 report by the Ohio Environmental Protection Agency ("OEPA Report"). The OEPA Report, in turn, relied upon analysis of then-current technology including biologically activated sludge, chemical precipitation, ion exchange, and reverse osmosis in concluding that the cost of mercury removal would be prohibitive. Clearly, as the Argonne research has demonstrated, an entirely new set of technologies now exists with very different economics. The OEPA Report calculation also did not evaluate the economic feasibility of mercury removal in a particularly meaningful or readily applicable manner, setting forth only a cost per pound of mercury removed rather than, as did Argonne, a capital cost for a system sized for the Refinery.

Additionally, USEPA is currently conducting its own analysis of mercury removal technologies to update the OEPA Report, and issued a draft report in April, 2012 ("USEPA Draft Report"). That report evaluates in detail the technical and cost-effectiveness of the technologies that have emerged since 1997 to control mercury (including those evaluated by Argonne), and provides a detailed cost assessment of each. With respect to UF technology, the USEPA Draft Report concludes that for a discharge of less than 20 mgd (the discharge from Outfall 005, for which mercury limits are imposed, is 15.7 mgd, UF costs are "relatively low."

For all of these reasons, Commenters are pleased that a reopener provision was included in the Draft Permit, requiring that if a mercury technology is determined to be "available and economically viable," the Permit must be re-opened to require that such technology be implemented. Draft Permit at 28. However, this reopener provision provides no specifics as to how and when BP is to make such a determination of availability and viability, once again raising the specter of a research process that will continue indefinitely without the need for action as soon as possible. The reopener should be revised to clarify what is meant by "available and economically viable," and how such determination will be guided by the pilot tests that BP is required to conduct.

Accordingly, Commenters recommend the following language for the reopener concerning mercury (changes underlined):

> If a treatment technology for the removal of mercury from wastewater is identified and is determined by IDEM <u>to meet the criteria in 40 C.F.R. § 125.3(d)(3) for a determination of best</u>

available technology, and/or be capable of meeting the water quality based effluent limit set forth in Part I.A.1, then BP must install and fully operate that treatment technology as soon as possible. In making such determination, IDEM shall specifically determine whether the Final Report submitted by BP pursuant to Part IV.D.1.b. reflects that any technology evaluated was effective in reducing the mercury in BP's waste stream beyond the levels of removal currently being achieved by the PMPP, in which case IDEM shall require that BP implement such technology unless it does not meet the 40 C.F.R. § 125.3(d)(3) criteria for a determination of best available technology.

Within 6 months after IDEM's determination or the final disposition of any appeal of such determination, whichever is later, BP shall submit a schedule, subject to IDEM approval, for the installation and operation of the identified treatment technology that is as expeditious as possible. Any such determination shall be considered final agency action, which BP may appeal. Upon completion of 12 months of operation, IDEM should modify the permit in accordance with 327 IAC 5-3.5-8 to revise the effective effluent limits for mercury at Outfall 005.

40 CFR part 125.3(d) In setting case-by-case limitations pursuant to § 125.3(c), the permit writer must consider the following factors:
(3) *For BAT requirements:* (i) The age of equipment and facilities involved;
(ii) The process employed;
(iii) The engineering aspects of the application of various types of control techniques;
(iv) Process changes;
(v) The cost of achieving such effluent reduction; and
(vi) Non-water quality environmental impact (including energy requirements).

Commenters are aware that IDEM and BP engaged in discussion with USEPA Region 5 during the course of drafting the SMV NPDES modification concerning the reopener provision. However, those discussions pre-dated that March 2012 Pilot Test Report, which produced extremely positive results with respect to UF technology, providing reason to believe that it may be considered available following the next round of pilot tests. It is therefore important that the reopener provision be revised to reflect that new reality.

Finally, Commenters note the possibility that has been raised that a TBEL developed in accordance with the re-opener provision could temporarily co-exist in the permit with the existing WQBEL developed in accordance with the SMV process, with the TBEL being the more stringent of the two. As discussed above, the TBEL and WQBEL requirements exist independently from one another. There is no legal or logical reason why the existence of a WQBEL that has been relaxed through a variance should obviate the need for a TBEL. The requirement for a WQBEL is triggered when a TBEL proves insufficient to meet water quality

standards, 33 U.S.C. § 1312; and that continuing requirement is reflected in the final WQBEL of 1.3 µg/L that remains in the permit. *See* Permit Section I.A.1. No reasonable reading of the statute could allow that the TBEL requirement be rendered a nullity simply because the more stringent WQBEL has been temporarily raised above the level that BAT could effectively meet. It is clear that the TBEL would be the controlling standard until and unless the WQBEL of 1.3 ug/L can be met, at which point the SMV will no longer be operative. In any event, it appears likely based on the Argonne research that the technology being developed through pilot testing is capable of meeting the WQBEL, so the question may well turn out to be moot.

Response 8:

As explained in the response to comment 5, the requirement in Part I.F.4 of the permit that "BP must install and fully operate [treatment technology that IDEM determines is "available and economically achievable'] as soon as possible," in conjunction with the more thorough study and reporting requirements in Part III.E of the permit that will provide IDEM with the information necessary to make the determination in accordance with Part I.F.4 of the permit, ensures that BP will be required to install any additional treatment technology that would satisfy any BPJ-based best available technology requirements.

It should be noted that IDEM conducted a review of the reported data for Mercury to determine if the proposed interim limit of 23.1 ng/l is still representative of the quality of the effluent from Outfall 005 for the more recent monitoring period;January 2012 to the present. Since February, 2012, the highest daily concentration of mercury from Outfall 005 is 8.75 ng/l (4-30-2012).

IDEM proposes to reduce the interim limit for mercury to 8.75 ng/l in accordance with 327 IAC 5-3.5-8 because BP has demonstrated since 2012 that they are capable of consistently achieving a concentration of 8.75 ng/l or less from Outfall 005 as an annual average on a yearly basis.

Comment 9:

Cooling Water Intake

Applicant's two cooling water intake structures ("CWIS") in Lake Michigan have long been subject to non-discretionary requirements of the Clean Water Act binding on IDEM to evaluate whether the intake structures and cooling water practices utilized at the Refinery comply with the following statutory criteria set forth in Act § 316(b):

"(b) Cooling water intake structures

Any standard established pursuant to section 1311 of this title or section 1316 of this title and applicable to a point source shall require that the location,

design, construction, and capacity of cooling water intake structure reflect the Best Technology Available for minimizing adverse environmental impact.

Applicant's CWIS are existing structures which are not subject to the Phase II rules at 40 C.F.R. 125.9 implementing 316(b), but they are nevertheless subject to the following requirement of a BPJ determination:

"(b) Existing facilities that are not subject to requirements under this or another subpart of this part must meet requirements under section 316(b) of the CWA determined by the Director on a case-by-case, best professional judgment (BPJ) basis."

IDEM is thus required to make a determination addressing Applicant's CWIS, and as whether the design, operation and monitoring of such equipment as shown in Applicant's submittal constitutes Best Technology Available ("BTA") for "minimizing adverse environmental impact" under 33 U.S.C. §1326(b). The design, operation, performance and monitoring of the CWIS are all indisputably considered as elements of the required professional engineering determination reflecting scientifically defensible BTA-BPJ findings and decisions addressing whether Applicant's present CWIS performance accomplishes a BTA level of "minimizing adverse environmental impact."

U.S.C. In considering its CWIS BTA decision, IDEM must also consider and address the fundamental purpose of the Clean Water Act "...to restore and maintain the chemical, physical and biological integrity of the Nation's waters. The determination IDEM must make under 33 §1326(b) as to adverse environmental impact must necessarily address the remedial and restorative goals of the Act as to the biological integrity of Lake Michigan as the navigable waters in which Applicant operates their CWIS.

In this section, Commenters address both Applicant's submittal addressing the CWIS matter, and IDEM's findings and determinations on the BTA determination addressing Applicant's cooling water intake structures. As demonstrated below, Applicant has completely failed to demonstrate that its primitive intake system even approaches BTA for minimizing aquatic life impacts. These structures lack even inlet screens to reduce aquatic life mortality – which is 100% for organisms entrained within the CWIS. Such intake screens – as well as many other types of protective measures – are widely available and considered part of BTA. Yet IDEM's analysis failed entirely to consider such technology or the possibility that it might be BTA. Its purported BPJ determination did not even assess the aquatic life harm being caused by BP's current CWIS structure, such as an evaluation current fish mortality levels; and included no analysis as to whether improvements in that structure could mitigate harm.

Applicant's August 2012 Cooling Water Intake Structure Documentation is Insufficient to Support a BTA-BPJ Determination

Applicant's CWIS Documentation Contains No Demonstration that the of Compliance with §316(b) Requirements

In August 2012, Applicant submitted documentation to IDEM addressing the cooling CWIS being utilized at the Refinery site.

While the documentation acknowledged that IDEM was to conduct a Best Technology BTA determination determined by BPJ, no part of the Applicant-submitted documentation contains any specific claims and/or demonstrations by the Applicant that their CWIS equipment actually complies with CWA Section 316(b), or that the subject CWIS equipment as presently used at the refinery meets a BTA-commensurate level of protectiveness for "...minimizing adverse environmental impact..." and for restoring the biological integrity of Lake Michigan in which Applicant operates its CWIS. Commenters are not aware of any documents from the Applicant that clearly and unambiguously state Applicant's conclusion whether the present design and operational practices for its two Lake Michigan CWIS intakes (as shown in the August 2012 CWIS Documentation) comply with the objectives and provisions of 33 U.S.C. §1326(b) read together with the Act's purposes in restoring the biological integrity of Lake Michigan.

Applicant's brief CWIS documentation consists solely of physical and operational descriptions of the cooling water intakes structures, the flumes and tunnels to Lake Michigan, the pumping station physical features and the results of a diver inspection to determine intake facial inlet plane orthogonal velocities, along with supporting schematic diagrams showing Applicant's current CWIS installations. This documentation contains no quantitative or qualitative information addressing the present breadth and extent of biological damages and impairment to fish and aquatic organisms caused as a result of Applicant's CWIS operations in Lake Michigan. IDEM Office of Water Quality (OWQ) permitting staff have verified that Applicant has never submitted any information addressing the present or historical levels of Applicant-CWIS-caused biological damage to aquatic life from Lake Michigan and that IDEM has not requested such information from Applicant.

Applicant's CWIS Documentation Fails to Include Information Addressing the Manner in Which Applicant's Present CWIS Causes or Contributes to Aquatic Mortality Impingement and Entrainment Losses

While the Applicant provides a large amount of physical information about the CWIS in question, none of the information or analysis describes any of the modalities for fish and aquatic biological damage that is caused or created by the physical and operational elements of Applicant's CWIS intake processes and operations. In a proper determination and demonstration of compliance with 33 U.S.C. §1326(b), IDEM must properly consider the manner and modality of impingement and entrainment mortality losses caused by the present physical configuration of Applicant's CWIS equipment and operations because such biological damages are a part of the process of 'minimizing adverse environmental impacts in the form of fish and aquatic fauna mortalities.

Because an IDEM BTA-BPJ determination must be reviewed as to whether it is a properly articulated and scientifically defensible exercise in environmental engineering, such a determination must necessarily consider the degree and manner in which the physical elements and operational features of CWIS equipment cause or contribute to impingement and entrainment aquatic mortality. No part of Applicant's CWIS documentation provides the information needed for a proper engineering judgment and determination on Applicant's CWIS in meeting the requirements of 33 U.S.C. §1326(b) and the required BPJ review.

Applicant's Failure to Operate Continuous Volumetric Flow Monitoring Devices Sufficient is Not Compatible with a Proper BTA-BPJ Determination

Applicant's CWIS documentation indicates that no direct-stream CWIS volumetric flow monitoring is done at the facility. Its methodology of monitoring the flow in the intakes is to do so by using two general groups of calculations rather than direct continuous physical parameter monitoring in intakes and tunnels. The first group of calculations addresses discharge effluent flow monitoring together with calculated water losses within the refinery and back calculates the total intake flow rate from both intakes combined. The CWIS documentation does not disclose or indicate such calculations and how they were carried out.

The second group of calculations addresses flow proportioning ratios that apportion the total combined intake flow rate from the first group of calculations between the 1911 and 1942 intake tunnels. The results of the second group of calculations lead to Applicant's depiction of a generally applicable operational assumption that the flow rate apportions 67 percent to the 1942 flume and 33 percent to the 1911 flume under all conditions. No justification or calculations support Applicant's claim that the stated flow proportioning stays constant between the two tunnels.

Applicant's intake flume flow monitoring approach is not acceptable because a non-demonstrated, unapproved and undisclosed total volumetric flow calculation methodology and tunnel volumetric flow rate proportioning assumption does not demonstrate a 'best' technology approach to intake process monitoring to address "minimizing adverse environmental impacts." Nothing about Applicant's calculated tunnel volumetric rate determination and monitoring methods demonstrates that Applicant's procedures and calculation methods are the "best" technology available and a basis for rejecting demands on the Applicant that continuous volumetric parameter monitoring equipment be installed in both intake tunnels to Lake Michigan. Nothing in the CWIS documentation can be considered as an Applicant showing that such individual flume flow monitoring is either technically or economically infeasible.

As part of permit-required monitoring measures necessary for Applicant's compliance, IDEM should require the Applicant to install continuous volumetric flow rate monitoring equipment in each CWIS intake flume and to maintain such a requirement as a permit-specified effluent limitation for CWIS operational

monitoring. In addition, IDEM should require a showing and demonstration of how flume volumetric monitoring is related to keeping the maximum CWIS intake facial plane orthogonal flow velocity below any required, recommended and/or pre-determined velocity thresholds for fish and aquatic biological protection.

Applicant's Supporting Calculations and Methodologies in the CWIS Documentation are Undisclosed, Unsupported, and/or Inadequate

As noted in the prior sections, Applicant carried out two groups of calculations in support of its CWIS Documentation, but Applicant did not submit or disclose any such calculations or methodologies it used in making its determination. The entire theory of IDEM's determination of Applicant's CWIS compliance with BTA for the present facility depends on the process operational guarantee that acceptable intake facial plane orthogonal velocities will be maintained through Applicant's discharge flow-based back-calculation methodology and individual tunnel flow apportionment of the total flow based on a fixed calculated assumption.

Commenters thus object to IDEM's finding that Applicant's CWIS documentation is part of a complete and approvable application when none of the underlying calculations and methodologies were submitted for review and BTA determination by the Applicant. Commenters further object to the speculative nature of Applicant calculation approaches and Applicant's failure to show, consider or explain how Applicant's overall approach to volumetric intake rate determination constitutes an accurate assessment method.

Response 9:

As part of this permit renewal, IDEM made a BPJ determination that the CWIS at the BP Products North America, Inc. – Whiting Refinery are equivalent to BTA. The determination was made based on an evaluation of the available information. The low intake velocities measured at the CWIS intakes support a determination of BTA. The permittee provided average intake velocity data showing velocities of 0.26 fps and 0.56 fps at intakes 1942 and 1911, respectively. Based on the Technical Development Document for the Proposed Section 316(b) Phase II Existing Facilities Rule (EPA-821-R-11-001) dated March 28, 2011, at a velocity at or below 0.5 fps, most fish can swim away from cooling water intakes. The location of the cooling water intake structures (CWIS) in areas off shore reduces the number of fish that are potentially affected by the CWIS due to the much lower fish population in the off shore areas compared to the fish population in the near shore areas where CWIS are typically located. IDEM also considered the water withdrawal reduction achieved by the existing cooling towers employed a the facility and the proposed cooling towers that will further reduce the withdrawal of cooling water.

The number of fish that are impinged or entrained by the existing CWIS is not well documented, therefore IDEM will require the permittee to submit to IDEM for review and approval a fish impingement, entrainment and mortality minimization alternatives evaluation for each CWIS at the Whiting Facility. At a minimum, the evaluation must

include an assessment of installation of debris screens, and consideration of a separate fish and debris return system and include time frames and cost analysis to implement these measures. As part of this a characterization of the types of fish species will be required. The permittee shall submit the fish impingement, entrainment and mortality minimization alternatives evaluation to IDEM within 24 months from the effective date of this permit for review and approval. The fish mortality minimization alternatives evaluation shall include the feasibility of installing a fish return to Lake Michigan. (See Permit Part III.B.2.)

The fish impingement, entrainment and mortality minimization alternatives evaluation will be used to reevaluate the BTA determination during the next permit renewal cycle.

Comment 10:

Applicant Failed to Submit CWIS Documentation Drawings and a Detailed Showing of the Physical Configuration of its Intake Chlorination System on the 1942 Flume CWIS and Information Necessary to Determine that Heated Chlorinated Solutions are Not Discharged to Lake Michigan

> Applicant's CWIS Documentation the 1942 intake configuration indicates as follows:

In the early 1980s, a frazzle ice and biological fouling prevention system was put in place. Hot water and chlorine solution are pumped out to manifolds running the circumference of the intake in order to reduce ice and biological growth.

However, the Applicant did not provide any drawings or other technical information showing the exact location and placement of the hot water/chlorine solution 'manifold' and its placement geometry with respect to the facial openings in the 1942 flume CWIS intake as shown on either Figure 3 or 5 of Applicant's submitted CWIS documentation . No information was provided on the volumetric rate of feed of the heated, chlorinated water delivered to chlorination manifold for release on the 1942 CWIS facial intake openings. In the absence of a specific drawing addressing the placement of the subject manifold and detailed information showing such information as the rate of heated, chlorinated water addition and the relationship between flow rates of chlorinated water and the relative rates of intake volume, there can be no assurance that the manifold will not cause a discharge of total residual chlorine to Lake Michigan as receiving waters.

In addressing the potential for the anti-fouling chlorinated solution discharge, Applicant must also simultaneously address and conform its claims that the design and operation of its intakes will not also entrain fish and aquatic life at the facial plane of the intake inlet openings.

In making any showing by Applicant that the design and placement of the chlorinated hot water solution injection manifold does not discharge to Lake Michigan in a manner that escapes the CWIS, Applicant should also be required to

show and address what effect the chlorinated solution injection apparatus has on fish that are in or near the edges of the facial plane of the CWIS intake opening. Applicant must not be allowed to operate an anti-fouling system having the effect of impairing the ability of fish to escape entrainment flow at or near the CWIS facial plane intake opening.

IDEM's Fact Sheet indicates the Applicant plans to maintain a 0.25-0.5 mg/l total residual chlorine concentration within the refinery water supply system. The upper bound concentration is 26 times the present Indiana CMC (Maximum) water quality standard of 19 µg/L for total residual chlorine. Because the anti-fouling solutions used by the Applicant will be acutely toxic to fish and aquatic life it is essential that the Applicant be required to provide absolute clarity as to whether or not any portion of the flow of anti-fouling solutions at the 1942 CWIS will be discharged to Lake Michigan at the facial intake surfaces. The draft permit should not issue without providing such information for review and verification that Applicant's intake chlorination manifold is not operating as a de facto additional outfall for a total residual chlorine contaminated discharge stream discharged to Lake Michigan.

Applicant's documentation also did not mention any intake chlorination on the 1911 flume. IDEM's Fact Sheet mentions zebra mussel control on p. 42, but does not say that such activities are carried out on the 1911 intake. The intake chlorination status of the smaller intake should be clarified on the record during IDEM's subsequent consideration of Applicant's permit.

Response 10:

Both of the CWIS structures (1911 and 1942) are chlorinated by BP. BP has verbally described the chlorination system to IDEM, but BP has not provided any engineering drawings of the chlorination system. BP described the chlorination system as being a ring like structure that sits on top of each CWIS and slowly releases chlorine to the intake water immediately prior to the water being drawn into the CWIS. See Response 22.

Comment 11:

Applicant's Single Day Diver Inspection and Measurement of Facial Plane Orthogonal Flow Velocities Does Not Constitute a Continuous, Direct & Real Time Volumetric Parameter Monitoring and Verification Method

Applicant's CWIS Documentation contains the results of a diver inspection and measurement of the facial plane or orthogonal intake flow velocities during a single day of refinery operation when the combined total flume flow rate for the 1911 and the 1942 CWIS was indicated as 85 MGD. As part of its single day demonstration and CWIS documentation, the Applicant also calculated (and did not measure) the flow proportioning between the two CWIS intake flumes. Applicant calculated the flow proportioning at 33% for the 1911 tunnel/intake and 67% for the 1942 tunnel/intake,

but no such calculations and methodologies were provided by Applicant in the documentation.

The CWIS documentation contains the results of the diver intake inlet facial plane orthogonal intake velocity measurements, and shows these on page 4 and in figure 5. Applicant's submitted diver inspection and velocity measurements portray the two CWIS intakes with a specific level of performance that Applicant intrinsically claims as being acceptable when measured on November 13, 2009 while operating at a calculated combined total intake rate of 85 MGD. However, nothing about this submitted information and inspection assures that the intakes will operate at all times with maximum and/or average facial intake velocities less than those observed on November 13, 2009 at the respective two Lake Michigan intakes.

For example, the average combined flow reported for 2009-2001 is 92 MGD. Non- firewater pumping unit capacity is 117.8 MGD for No. 1 Water Station and 146.3 MGD for No. 2 Water Station. Nothing about the submitted diver inspection information ensures that Applicant will be able to maintain the same or similar CWIS facial plane intake velocities under all facility operating and plant production rate conditions. Applicant is *not* accepting a limit of 85 MGD per day for total CWIS intake daily volumes.

Specifically, nothing about Applicant's submittal ensures that the facility will have the same or similar CWIS intake facial plane velocities while the facility is operating at the maximum physical pumping process rates for both non-firewater and firewater pumps. Nothing in Applicant's submittal establishes a functional relationship between CWIS intake facial plane normal velocities and hourly volumetric intake process rates in both the 1911 and 1942 intake tunnels. Without direct tunnel volumetric flow measurement as parameter monitoring for CWIS operation for intake facial plane orthogonal velocity flow control and without a clear mathematical relationship between refinery water demand and such facial velocities, nothing about Applicant's CWIS documentation provides a basis for ensuring that CWIS operations do not have unacceptable facial plane orthogonal velocities under all water intake tunnel volumetric rates and typical rate variability.

Response 11:

IDEM has modified the CWIS study in Part III of the permit to require flow monitoring of the water intake as measured at the pump station and as measured at both of the CWIS to establish a relationship between total intake flow and the calculated intake velocity at both of the CWIS. The purpose of this study is to establish a maximum flow above which the intake velocity at the CWIS will exceed 0.5 feet per second. That flow value may be established in the permit as a maximum allowable intake flow velocity at the intake pumps.

Comment 12:

Applicant's CWIS Documentation Fails to Identify and Quantify the Total Intake Facial Plane Area for the 1911 and 1942 CWIS

A key and important parameter for evaluating CWIS physical configurations is the total intake facial plane area for each of the 1911 and 1942 CWIS. Applicant should be required to specifically state the total inlet area for each of the two intake units.

Response 12:

For the purposes of making a BTA determination using BPJ for this permit renewal, IDEM had enough documentation to determine that the intake velocities at the CWIS are low enough (<0.5 feet per second) to approve the CWIS at this time. Identification and quantificaiton of the Total Intake Facial Plane Area was not necessary to make this determination

See Response 11.

Comment 13:

Review of Applicant's November 13, 2009 CWIS Intake Facial Plane Orthogonal Velocities and Assumed Volumetric Flow Rates and Flow Proportioning Shows Inconsistency and Implausibility on Applicant's Calculated Combined Intake Daily Flow Volumes and Flow Proportioning Percentages Ratios

Applicant calculated an 85 MGD combined total intake volumetric flow rate for the day of the diver inspection and intake facial plane velocity measurements on November 13, 2009. Applicant's unmeasured but calculated flow proportioning result is 33% of combined total flow rate for the 1911 intake and 67% of combined total flow rate for the 1942 intake. At this flow rate proportioning, the 1911 inlet volume would be 28 MGD and the 1942 inlet volume would be 57 MGD for the November 13, 2009 day of operations when diver measured intake facial plane orthogonal velocities were determined on both of Applicant's CWIS inlets.

To check this calculation, Commenters used Applicant's measured CWIS facial velocity data to estimate by calculation the volumetric flow rate at each intake implicit to the facial velocity detected in the diver inspection on November 13, 2009. See Exhibit 8 for Commenters determination of the total CWIS facial inlet area for both intakes and for Commenters' volumetric calculations. Commenters determined the 1911 intake facial plane opening area as 55 square feet. At the 1911 intake inlet facial plane normal velocity of 0.56 ft/sec, Commenters calculate an estimate of the 1911 intake volumetric rate on November 13, 2009 to be 19.9 MGD. Commenters additionally determined the total 1942 intake facial plane inlet opening area as 480 square feet. At the November 13, 2009 average 1942 intake inlet facial plane normal velocity of 0.26 ft/sec, Commenters calculate an estimate of the 1942 intake

volumetric rate on November 13, 2009 to be 80.7 MGD. These conclusions are summarized in the table below:

	1911 Intake	1942 intake
Applicant's determination of volumetric rates on 11/13/2009 using 85 MGD combined total and Applicant's calculated 33-67 proportioning ratio	28 MGD	57 MGD
Commenters' calculated estimate of 11/13/2009 intake volumetric rates based on diver-measured CWIS intake inlet velocity determination and Commenters' determination of total inlet facial	19.9 MGD	80.7 MGD

As shown in the table, Commenters' calculated estimates demonstrate volumetric rates that are considerably less than Applicant's volumetric rate determination for the 1911 intake and considerably greater than Applicant's volumetric rate determination for the 1942 intake.
There is thus good reason to question Applicant's calculation methods and the potential of such methods to propagate erroneous determination of intake inlet volumetric rates.

Response 13:

IDEM has reviewed the calculations used by BP to estimate the volumes from each of the CWIS and IDEM has concluded that they are the equivalent of an engineering estimate. However, IDEM agrees that more flow measurement data is needed to determine the flow velocity at the CWIS intake openings and the relative flow entering each of the CWIS.

The permittee may be required to submit additional or updated methodology during the next permit renewal.

See Response 11.

Comment 14:

Applicant's CWIS Documentation Contains No Information, Review or Narrative Addressing Efforts at Intake Flow Reduction

While the Applicant's NPDES application mentions two new cooling towers as part of the facility expansion and modifications, nothing in the CWIS documentation addresses Applicant's obligation to consider alternatives to reduce or mitigate intake fish damages by increasing the use of closed cycle cooling towers at the Whiting Refinery. There is no demonstration or adequate showing provided of existing cooling tower use and potential future cooling tower use for a portion or all of the

facility's cooling water needs.

The present level of mitigation through inlet flow reduction through existing cooling towers should have been included in a demonstration of compliance with § 316(b), along with information and narratives addressing why further cooling tower use should or should not be implemented as part of a BTA-BPJ determination carried out under § 316(b).

Response 14:

The cooling towers and unit re-configurations of the plant upgrade project are expected to achieve water demand reductions estimated at 16.9 MGD. This will be achieved by the installation of two new re-circulating cooling towers and the removal of two once through cooling towers. A reduction in water demand within the facility will result in reduced potential harm to aquatic life at the cooling water intakes.

Comment 15:

Applicant's CWIS Documentation Contains Misleading and Erroneous References to Screens Associated with its CWIS Intakes and Water Stations and to Nominal Volumetric Flow Depictions

Applicant states in its introduction to the CWIS documentation as follows:

> "Therefore, IDEM is requesting that the BP Whiting Business Unit provide a description of the CWIS that **includes the average velocity of the inflow through the intake screens**, as well as engineering drawings of the CWIS. The following sections present the CWIS configuration, water station description, and **average through screen velocity.**

Applicant then states:

> "Although grating exists on the intake system to exclude large debris, **no intake screen system exists**. Next, Applicant states as to the 1911 intake:
>
> "....**the central pipe is now an open pipe receiving vertical water flow**. **This intake provides a small proportion of the total design intake flow** and is located approximately 1,330 feet offshore.

However, the express conclusion of this statement conflicts with Applicant's own analysis on page 4 of the relative proportional flows between the 1942 and 1911 intakes. While an average 1911 intake volumetric flow of 30.3 MGD [and 33% of the total combined intake tunnel flow] can be validly described as "smaller" than the stated 1942 intake volumetric flow, as a matter of comparison, to Applicant's statement that a intake flow of 30.3 MGD means that "....this intake provides a **small proportion** of the total design intake flow is an plainly not accurate. It is merely an unsuccessful effort to minimize the impact of Applicant's continued use of a primitive

intake system having no little or no mitigation of fish and aquatic losses.

Additionally, Commenters note that Applicant states that "**Average through screen velocity** was measured on November 13, 2009 during a routine intake inspection." However, Applicant has previously explained that the facility's CWIS *do not have inlet screens at all.* at all. Applicant should therefore not have referred to the diver's intake inlet facial plane orthogonal velocity measurements as determinations of "average through-screen velocity."

Use of such terms suggests that Applicant is somehow mitigating biologically damaging conduct from intake operation with either inlet screens which do not exist, or screens within the Water Stations which cannot protect fish that have become entrained and trapped in Applicant's primitive 100% fish mortality CWIS intake systems.

Finally, Commenters note IDEM's reliance on Applicant's submitted monthly average intake volumetric data in the publication of the Fact Sheet when the agency never obtained or reviewed Applicant's calculation methodology in detail. IDEM's uncritical and non-evaluative approach to accepted Applicant's calculation model is not appropriate.

Response 15:

IDEM acknowledges that the CWIS and the intake pumps do not have screens. EPA's proposed regulation for existing facilities sets a maximum intake velocity limit of 0.5 ft/s that is based upon a hypothetical configuration of a shoreline intake with screens oriented perpendicular to the flow. EPA's regulation acknowledges that all facilities do not have this configuration and that the intake velocity is intended to be met at the opening or point of entry into the cooling water intake system. IDEM has applied its BPJ for establishing a compliance point consistent with the approach that EPA uses based upon the technology employed.

IDEM has reviewed the calculations used by BP to estimate the volumes from each of the CWIS and IDEM has concluded that they are the equivalent of an engineering estimate. However, IDEM agrees that more flow measurement data is needed to determine the flow velocity at the CWIS intake openings and the relative flow entering each of the CWIS. See Response 11.

Comment 16:

IDEM's Review of Applicant's CWIS Submittal Does Not Reflect a BAT-BPJ Determination that is Sufficient Under § 316(b)

IDEM purports to have made a determination based on BPJ that Applicant's existing cooling water intake structures represent BTA to minimize adverse environmental impact in accordance with § 316(b) as shown on p. 47-48 of the IDEM Fact Sheet. However, major portions of the IDEM's BTA determination findings and determinations

are published and taken as direct verbatim adoption of the text and analysis of Applicant's CWIS documentation. Additionally, IDEM improperly treated the application as complete notwithstanding the severe deficiencies documented in the previous section.

As discussed above, § 316(b) requires IDEM as part of the NPDES permit issuance process to use BPJ to set binding permit effluent limitations. A case by case analysis carried out in the present matter of Applicant's facility must necessarily examine relevant features of Applicant's CWIS intakes pertinent to making a professional judgment concerning the BTA decision.

The BPJ process of determining compliance with § 316(b) cannot act as a *de facto* variance process from the requirements of that section. In carrying out a BTA determination, IDEM must produce a result which would provide a similar level of protectiveness for fish and aquatic resources that would be provided in a national rulemaking on CWIS intakes. It is not sufficient for IDEM to defer or to allow the Applicant to defer required elements of minimization of aquatic biological damage until a time when a national binding rule is published. BPJ review necessarily involves scientific inquiry and assessment of what specific "adverse environmental impacts" in the form of fish and aquatic fauna mortalities are presently caused by the present design and operation of Applicant's present CWIS intake equipment in Lake Michigan.

A valid BPJ determination is not possible when no information exists and no inquiry is made to the present level of biological damage being caused by the facility's present CWIS intakes, as inquiry on "adverse environmental impacts" must necessarily focus on biological damage in the form of aquatic mortalities for fish and aquatic fauna in all life stages. Such an inquiry should provide a quantitative basis for decision-making in the form of a biological identification of the amount, the rate and the flow-relatedness of fish and aquatic fauna mortalities from operation of the two intake in Lake Michigan. A valid inquire further involves physical identification, analysis and narrative review showing each element of Applicant's present CWIS intake design and operation and a review of how and whether each of these physical and operational CWIS elements mitigates "adverse environmental impacts" in the form of biological damage caused by Applicant's CWIS intakes. A scientifically defensible BTA-BPJ review must also not merely review the impact of existing CWIS equipment, but must necessarily consider and evaluate potential use of alternative intake physical configurations and techniques having the potential to control, limit or eliminate impingement and entrainment losses, including intake flow reductions, fish return systems, alternate internal and inlet opening screen systems, use of adjacent fine mesh nets, and other intake mitigation and control techniques. As a matter of law and logic, consideration of such alternative technologies for mitigating adverse environmental impacts is part and parcel of determining whether the technology the Applicant is using is actually the "best technology available." That determination simply cannot be made if the limits its analysis to only those technologies presently in use by Applicant.

It should not have taken IDEM from the time of Applicant's first renewal

application submittal in February 2012 until April of 2012 to arrive at the conclusion that the Applicant should have addressed fish return systems in their application renewal narrative and demonstration. IDEM should have informed the Applicant back in February 2012 that its application was incomplete because it did not incorporate a fish return system. If IDEM had taken such an action in February, 2012, then at the present time the Applicant would have been getting a final approval on a specific plan to comply at an earlier rather than a later time. IDEM's failure to diligently require the implementation of 33 U.S.C. §3126(b) requirements can potentially lead to 3-5 years of additional delay before the Applicant is in final compliance with what IDEM deems to be appropriate fish protection and aquatic mortality mitigation measures.

The sections below describe in detail how IDEM failed to adhere to these requirements, and failed to conduct the analysis necessary for a scientifically defensible BTA-BPJ determination.

Response 16:

See Response 9.

Comment 17:

IDEM Failed to Adequately Assess Current Aquatic Life Impacts

Applicant's August 2012 Cooling Water Intake Document contained no information at all addressing impingement and entrainment mortalities of fish and aquatic fauna from the present design and operation of Applicant's two Lake Michigan CWIS intakes. IDEM Office of Water Quality ("OWQ") has also not collected information quantifying biological damages and aquatic mortalities from Applicant's two Lake Michigan CWIS intakes. Accordingly, the OWQ inappropriately determined that Applicant's NPDES renewal submittal was complete IDEM staff have confirmed that Applicant has never been asked to document and quantify its present level of biological damages in the context of the duty to "minimizing adverse environmental impacts" during the past history of IDEM regulation of the facility.

Given that no information at all exists in the record about fish and aquatic fauna mortalities in all life stages caused by the existing design and operation of Applicant's CWIS intakes, IDEM's BTA-BPJ finding and determination that Applicant's CWIS intakes "minimize adverse environmental impacts" is plainly insufficient. IDEM's determination must be set aside because its finding that Applicant is minimizing "adverse environmental impacts" is not supported by scientific evidence of present and existing biological damages from Applicant's intake equipment.

Response 17:

See Response 9

Comment 18:

IDEM Failed to Properly Identify, Analyze and Describe its Existing CWIS Intake Equipment Affects, Mitigates and/or Minimizes Biological Damage

Nothing in Applicant's August 2012 CWIS Documentation addresses or demonstrates how the physical and operational features of Applicant's CWIS intake equipment either cause, contribute to, mitigate and/or minimize "adverse environmental impacts" in the form of fish and aquatic fauna mortality, which as described above is an essential part of BTA-BPJ analysis.For example, both the Applicant and IDEM give no reason at all why the reported "average through- screen velocity" as determined by diver inspection ought to be considered as parameter values demonstrating measures deemed or considered to reduce or minimize fish and aquatic life damage A scientifically defensible review would need to show how, why, whether and to what extent the Applicant-submitted single-day-diver-measured "through-screen" velocities as a demonstration of claimed protectiveness should be considered as a demonstration of "minimizing adverse environmental impacts" or otherwise as a mitigation measure to limit or reduce entrainment and/or impingement losses.

Response 18:

See Response 9.

Comment 19:

IDEM's Acceptance of a Demonstration of Measured "Through Screen Velocities" Based on an 85 MGD Flow Rate Cannot be Considered as a Demonstration that § 316(b) Requirements are Met

From an operational evaluation standpoint, both Applicant and IDEM portray the intake velocity performance that occurred on November 13, 2009 in the diver-measured inspection during a portion of that day as being characteristic of facility operations for decision-making purposes. However, the diver-measured facial velocities depicted in the IDEM Fact Sheet and in Applicant's CWIS August 2012 Documentation can only be considered as characteristic of intake operations at the claimed 85 MGD flow rate occurring on November 13, 2009 or at a lesser rate. Since monthly average calculated actual intake flow rates up to 114.8 MGD occurred as recently as September, 2011, a proper determination of CWIS intake protectiveness must necessarily consider the performance of the intake as to inlet facial velocity matters occurring at the *maximum* refinery water station pumping rates expected during normal present operations and during future refinery expansion operations. As discussed above, Commenters calculated an estimate of 1942 intake flow of over 80 MGD from this inlet during the diver-inspection facial velocity measurements, while Applicant predicted a 67% flow equal to 57 MGD at the 1942 intake during the inspection. Nothing in Applicant's August 2012 CWIS Documentation or in IDEM's Fact Sheet explains or addresses why a monthly average of daily actual intake values

(as calculated and not directly measured) should be considered to be an appropriate quantitative intake physical operations indicator parameter sufficient to inform decision-making to assure compliance with intake facial plane orthogonal velocity performance that must be maintained on a very short term basis to maintain biological damage reduction and mitigation under all circumstances. At the very least, IDEM should have addressed short term variability in the refinery's CWIS intake facial plane orthogonal velocity rates and the effect of such short term variability on the expected protectiveness of intake performance at both Lake Michigan intakes.

IDEM's Should Not Have Accepted Applicant's Calculated Actual Intake Flow Data in the Absence of Applicant's Disclosure of its Intake Flow Calculation and Flow Proportioning Algorithms and Calculation Methodology

IDEM should not have accepted the Applicant's method of calculating combined total inlet flows on the basis of discharge flow monitored values and calculated flow proportioning factors between the two inlet tunnels without first performing an engineering review of Applicant's inlet flow calculations and without a public showing in the record of such calculations. IDEM's acceptance of Applicant's calculated intake flow rates based on discharge outfall flow monitoring and 'back calculating' intake rate value means that no public record exists which can be used to verify Applicant's calculated intake volumetric rates. Such verification is necessary to ensure that the BTA decision is made in a defensible scientific manner according to a standard of Best Professional Judgment (BPJ) review.

Response 19:

See Response 11.

Comment 20:

Applicant's Outfall 005 and 002 Effluent Flow Characterization Raises Questions as to Whether IDEM's BTA-BPJ Review Properly Considered Maximum Potential Intake Volumetric Rate Variability on Intake Facial Velocity Performance

Applicant's NPDES Application contained the following volumetric flow specifications for Outfalls 002 and 005:

[Flow in MGD]	Maximum Daily Flow	Maximum 30 day average of Daily Flow	Long Term Average
Outfall #002	98.	86.2	73.7
Outfall #005	27.	19.9	15.7
TOTAL	126.1	106.1	89.4

An additional application data element shows in a Water Flow Diagram contained in Applicant's NPDES renewal submittal and shown as Exhibit 9. This sheet identifies a maximum monthly average of daily flow to be 111.14 MGD.

This volumetric rate data raises questions again about the potential variability of the intake flow in light of these combined discharge numbers. IDEM's implicit assumption that a depiction of diver measured intake inlet facial plane orthogonal flow velocities at a combined total tunnel intake flow rate of 85 MGD as occurred during the diver inspection can be considered characteristic of performance at expected higher daily intake flow rates which will occur frequently at Applicant's facility was inappropriate.

As discussed above, Applicant does not operate flow rate monitoring devices on the two CWIS intake tunnels to the two Lake Michigan intakes. Such continuous monitoring of intake tunnel flow rates is a technically feasible and available technology for parameter monitoring to help ensure and guarantee that intake inlet facial plane orthogonal velocity performance of intakes will reflect performance in compliance with 33 U.S.C. §316(b) in minimizing adverse environmental impacts.

However, in IDEM's BTA demonstration and review of how the Applicant considers or monitors performance IDEM relies only on what the Applicant has proposed for intake system monitoring in general and for intake tunnel volumetric flow rate monitoring specifically. IDEM did not consider other techniques of monitoring and specifically did not consider requiring the Applicant to do direct flow rate monitoring in each of Applicant's two tunnels to Lake Michigan.

IDEM's BTA demonstration thus fails from an intake process monitoring standpoint. IDEM's decision considered as "best" a combined total intake volumetric calculation method based on outfall flow rates and 'back calculation' of intake flow rates together with an unverified/undisclosed calculated theoretical flow rate proportioning ratio method between the two intakes. IDEM's BTA intake monitoring decision preferring Applicant's calculated results over the use of actual continuous volumetric rate monitoring in Applicant's two intake tunnels is therefore in error.

Response 20:

See Response 11.

Comment 21:

Applicant's and IDEM's Description of "Through-Screen Velocity" Obscures the Fact that Both of Applicant's Lake Michigan Intakes Will Cause 100% Mortalities as Entrainment Trapping Losses

Applicant and IDEM do not disclose or explain that the stated intake facial plane "through-screen velocities" as articulated on page 44 have nothing to do with

screens and nothing to do with avoiding impingement losses at the facial plane of the intake inlet openings. In fact, fish and aquatic life that become entrained in Applicant's intake flow will be subjected to chlorination at concentrations well above Indiana water quality standards. Fish and aquatic organisms that survive inlet tunnel chlorination but remained trapped in the tunnel will not survive Water Station and refinery water main process-related screening operations, pumping operations and thermal loads.

IDEM and Applicant should have acknowledged the mortality effects and the 100% fish entrainment losses in the present and existing system with few if any measures to reduce such damages or to address exclusion from intake entrainment.

Response 21:

The best way to reduce mortality from entrainment is to reduce the volume of water being withdrawn, BP has been reducing their use of intake water at the refinery. See Response 9

Comment 22:

IDEM's Best Technology Available Determination Fails to Address the Effect of Intake Chlorination on Fish and Aquatic Mortalities in Applicant's Intake System

Determination of what intake technologies should be deemed to be BTA for minimizing adverse environmental impacts must necessarily consider the effects of intake chlorination for zebra/quagga mussel control on fish and aquatic fauna as an inextricably intertwined factor. However, IDEM's analysis and review of the intake matter fails to show and address the effect of intake chlorination on all features of intake-related aquatic biological protection and the 33 U.S.C. §1326(b) decision. For example, IDEM failed to conduct or require Applicant to provide an analysis of what effect intake chlorination practices will have on the performance and efficacy of a potential fish return system at Applicant's CWIS water intake system. Realistic assessment of intake chlorination practices on fish return systems and fish survival inside of Applicant's intake tunnels may mitigate for installation of entrainment exclusion controls and intake inlet screens rather than a fish return system at this facility in a revised BTA demonstration addressing Applicant's intake equipment.

Response 22:

The use of chlorine to prevent the growth of mussels in the CWIS and the intake pipes is considered to be the application of a FIFRA registered substance in accordance with label instructions and at that time the chlorine is not considered or treated as a pollutant. IDEM has no reason to believe that chlorine is escaping into Lake Michigan due to the fact that is it applied to the CWIS at a point where the intake velocity will pull the chlorine into the CWIS, therefore, IDEM does not believe any additional permit related requirements are needed at this time.

Comment 23:

IDEM Failed to Require Applicant to Fully Vet Alternative Intake Technology for Intake Flow Reduction

Neither IDEM's BTA demonstration nor Applicant's CWIS documentation provide complete vetting and appropriate consideration of alternative intake flow reduction technology. IDEM's BTA determination contains no consideration of alternative flow reduction through use of additional closed cycle cooling tower units beyond the two additional units Applicant is installing as part of the Whiting Refinery expansion. Nothing in IDEM's determination indicates the extent and magnitude of Applicant's existing commitments to existing cooling tower units, including a complete description of the heat dissipation load carried by the existing cooling tower units as compared to the total refinery heat load and the proportion discharged through single pass cooling water systems. Such analysis should have included, at minimum, evaluation of intake flow reductions, fish return systems, alternate internal and inlet opening screen systems, use of adjacent fine mesh nets, and other intake mitigation and control techniques.

Response 23:

See Reponse 9.

Comment 24:

Applicant's Permit Application Effluent Characterization Shows that Certain Pollutant Aqueous Concentrations are Increasing

Commenters examined aqueous pollutant concentration effluent data for Outfall #005 in Applicant's February 2012 NPDES permit renewal application and similar data for Outfall #001 contained in the 2006 NPDES permit application. That examination shows that Applicant's pollutant effluent concentrations increased from the time of the 2006 permit application to the filing of the February 2012 NPDES permit renewal application in the manner shown in the table below:

Outfall 005 Pollutant	**Maximum Daily Effluent Concentration (mg/l)**			**Monthly Average Effluent Concentrations (mg/l)**		
	2006	2012	Factor of increase - 2012 / 2006	2006	2012	Factor of increase - 2012 / 2006
Selenium	0.034	0.038	1.1	0.0215	0.035	1.6
Sulfate	370	868	2.3	315	701	2.2

Tot Dissolved Solids	980	2143	2.2	905	1721	1.9
Chlorides	424	611	1.4	263	392	1.5
Arsenic	0.0077	0.014	1.8	0.0071		
Lead	0.021	0.043	2.0	0.0077	0.005	
Manganese	0.089	0.12	1.3	0.073		
Strontium	0.78	0.90	1.2	0.53	0.61	1.2
Copper	0.0058	0.019	3.3	0.0029	0.0047	1.6
Arsenic	0.0077	0.014	1.8	0.0071		
Vanadium	0.63	0.84	1.3	0.37	0.55	1.5

All of the pollutants listed in the table above were subject to monitoring requirements and final water quality based effluent limitations in the pre-diffuser Outfall #001 2007 NPDES permit. However, the final water quality based effluent limitations for 2007 permit Outfall #001 never went into effect because the Applicant chose to install a diffuser regulated under Outfall #005 in the 2007 permit. Once the outlet diffuser was installed in Lake Michigan, Applicant as permit-holder became permanently subject to Outfall #005 effluent limitations in the 2007 permit which did not include the previous water quality based effluent limitations and monitoring requirements applicable to the pollutants regulated through Outfall #001 under the terms of the 2007 NPDES permit.

Only vanadium remains regulated under Outfall #005 in IDEM's Draft 2013 permit renewal. However, the 2013 permit vanadium allowed effluent limitations are significantly higher than what would have been allowed under final vanadium limits in the 2007 permit Outfall #001 effluent limit table.

Commenters request that IDEM locate historical flow rate information in order to determine if the Applicant increased its pollutant loadings to Lake Michigan as a result of these reported increases in aqueous pollutant concentrations in Outfall #005 during the term of the 2007 permit effectiveness. Once IDEM completes the task of determining whether the Applicant increased loading rates of the pollutants addressed, Commenters request that IDEM publish such findings for public review as part of the responsiveness summary in this matter. Further, Commenters request that IDEM clarify whether the Applicant caused such loading rate increases, when such increases occurred (including times before the diffuser went into operation) and whether any such loading increases triggered any aspect of regulatory concern.

Response 24:

IDEM conducted a simplified worst case RPE analysis of the new effluent data contained in the 2012 EPA Part 2C renewal application by developing a waste load allocation model using the dilution provided by the diffuser and comparing those WQBELs to the maximum Projected Effluent Quality (PEQ) in concentrations of mg/l which is based on the highest single data point multiplied by the maximum variability factor of 6.2 In accordance with 327 IAC 5-2-11.5 the PEQ is then compared to the Proposed Effluent Limitation (PEL). If the PEQ is less than the PEL, then there is no demonstrated reasonable potential for the effluent to cause an exceedance of the applicable water quality criteria. IDEM has retained the final effluent limits for Vanadium in the NPDES permit due to the reasonable potential for Vanadium to exceed the WQBEL.

Pollutant	Daily Maximum	Variability Factor	Maximum PEQ	Monthly Average WQBEL (PEL) In mg/l
Selenium	0.038	1.1	0.042	0.13
Sulfate	868	1.1	955	6,900
TDS	2,143	1.1	2357	18,000
Chloride	611.0	1.1	672	7,200
Arsenic	0.014	6.2	0.087	4.50
Lead	0.043	1.1	0.047	0.28
Manganese	0.12	6.2	0.74	21.0
Strontium	0.9	1.1	5.6	630.0
Copper	0.019	1.1	0.02	0.34
Vanadium	0.84	1.0	0.0.84	0.73

IDEM does not believe that antidegradation has been triggered by the apparent increase in effluent concentration of the substances listed above. BP was previously approved to utilize Canadian Heavy Crude Oil as their feedstock. Approval was based on information provided in the antidegradation demonstration that was submitted and approved with the issuance of the existing permit (issued in June 2007).

327 IAC 2-1.3-4(c)(2) states:

A new or increased loading that results from one (1) of the following activities that does not require the submission of information beyond what is required to comply with the discharger's existing applicable permit:

(A) A change in loading of a regulated pollutant within the existing capacity and processes that are covered by an existing applicable permit, including, but not limited to, the following:
(i) Normal operational variability, including, but not limited to, intermittent increased loadings due to wet weather conditions.
(ii) A change in intake water pollutants not caused by the discharger.

(iii) Increasing the production hours of the facility, for example, adding a second shift.
(iv) Increasing the rate of production.
(v) A change at an internal outfall that does not directly discharge to a surface water of the state.
(vi) A change in the applicable effluent limitation guideline based on a change in production.

The use of Canadian Heavy Crude Oil as feedstock is approved and regulated by the existing applicable permit. The effluent concentrations are within the range of BPs normal operational variability. There have been no changes in the intake water pollutants known or believed to be present. BP did not increase their 24 hours per day/365 days per year production schedule. There are no internal outfalls and the effluent limitation guidelines have not changed.

In addition, IDEM believes as BP introduces additional or refines the use of existing treatment system(s), the effluent quality will improve. It is appropriate to retain some of the parameters from the previous permit for monitoring purposes. This will provide more data and should demonstrate continued improvement in overall effluent quality as some of the new and/or improved treatment systems are incorporated at the BP site. IDEM will be adding the following parameters for continued monitoring: selenium, sulfate, Total Dissolved Solids (TDS), chlorides, arsenic, lead, manganese, strontium, copper, fluoride, benzo(a)pyrene, Total Residual Chlorine and nitrate-nitrites.

Comment 25:

Applicant's Nitrate Effluent Characterization in the August 2012 NPDES Permit Application Appears to be Inaccurate

Applicant's operations associated with processing increased amounts of tar sands synthetic crude is an activity that increases the flux of nitrogen as inputs to the Refinery wastewater system. In the ongoing Refinery expansion, Applicant is increasing capacity for sour water stripping which means additional loads of ammonia directed to the refinery's lakefront wastewater treatment plant.

In reviewing Applicant's August 2012 effluent characterization, Applicant indicated that nitrates were "believed absent" and a concentration value of <0.1 mg/l was listed. In addition to this data, Commenters reviewed Applicant's entire history of TRI reports on water effluents listed for nitrate compounds. Over the entire history that nitrate compounds have been reportable TRI compounds for water effluent reporting up to the most recent reporting year, Applicant has never submitted any such TRI water effluent reports for nitrate compounds to U.S. EPA.

However, Applicant's 2006 NPDES permit renewal application contains several indications the Whiting Refinery wastewater treatment plant discharges substantial nitrate compound effluents from its facility WWTP operations. All of these admissions are contained in Applicant's November, 2006 anti-degradation analysis. Exhibit 10 includes relevant pages from that analysis addressing the presence of nitrate in Applicant's process wastewater discharge.

In the "Addendum" portion of Exhibit 10 on page 1 of that document, Applicant's consultant states:

> "The Lakefront WWTP is not specifically designed to degrade (nitrify) ammonia, however conditions do existing in the aeration tank that allow the growth of nitrifiers and the mass of these nitrifiers has been effective in degrading ammonia. The removal efficiency used for this Anti-Deg Analysis has been developed as follows ..... Ammonia removal efficiency % = 70%"

The original volume of the cited report contains 3 tables in Exhibit 10 showing high daily rates of nitrate effluent. Table 12 of the document is entitled "BP Whiting Lakefront WWTP CXHO Nitrogen Evaluation (Modified with 2001=2002 Long Term Average)" and shows facility nitrate compounds calculated at 923 lbs per day, which is an annual rate of nitrate compound effluents of over 336,000 lbs/year.

These statements from 2006 contradict Applicant's own August 2012 NPDES permit application characterization of nitrate effluents. Applicant acknowledged in 2006 that nitrification bacteria colonized their aeration wastewater treatment unit and Applicant used and assumed the bacterial nitrification activity in their treatment units as a key strategy in their method for reducing ammonia effluents. Given such admissions from 2006, Applicant cannot credibly state on their NPDES application that nitrate effluents are believed absent.

At a nominal loading rate of 923 lbs. of nitrates per day and at the present flow rate of 19.9 MGD, aqueous concentrations of nitrate would nominally be expected to be about 5.6 mg/l, which is higher than the <0.1 mg/l concentration listed by the Applicant in the August 2012 NPDES permit application.

Commenters further note that Applicant's purported lack of nitrates in its effluent, if true, would be extremely unusual for the petroleum refinery industry, as the vast majority of large, existing refineries in the United States report over 10,000 lbs of TRI nitrate compound aqueous effluents annually. The Applicant should be required to provide further evidence to support an anomalous lack of nitrate, particularly in light of its 2006 statements.

Response 25:

A correction has been made to Form 2C by BP on July 31, 2013 to select believed present where appropriate. BP mistakenly reported that nitrates were " believed absent " in the effluent. The "believed present" box should have been checked knowing that there may be times when the nitrates may be above detection.

Higher concentrations of nitrogen are expected in extra-heavy crudes (more than in the current slate), and a conservative estimate of the possible effluent nitrate-nitrogen concentration at 5 mg/L was presented in the 2006 antidegradation demonstration. However, BP is not yet at full capacity and the modernization expansion is not yet

completed. When this occurs BP will be ready with the increased capacity of sour water stripping at the refinery, which is designed to remove most of the ammonia with stripped sour water design of 15 ppm ammonia. As a result, the amount of ammonia sent to the Lakefront WWTP is not expected to change, and the increased sour water capacity as well as the increased equalization capacity at the sour water strippers and in the new EQ/surge tank (5052) is expected to decrease any variability in influent ammonia concentrations. Ammonia as nitrogen concentrations reported on the form 2C during the same period of time the nitrate-nitrite data was reported was low at 0.22mg/l, hence nitrates would also be low.

Ammonia is removed by two mechanisms at the Lakefront WWTP. First, it is used as a nutrient by microorganisms that remove the organics (i.e. BOD/COD). The removed ammonia is wasted from the system through the excess biomass (WAS). Second, any remaining ammonia is converted by a second group of microorganisms (nitrifiers), which convert the ammonia to nitrates. The amount of ammonia nitrified depends on the concentration of ammonia, the concentration of total nitrogen, and the ratio of COD/BOD to N in the feed. At least some ammonia is nitrified in the Lakefront WWTP, and this is expected to continue. However, incidental nitrate reductions are likely in the anoxic zones in the activated sludge plant.

BP Whiting did not manufacture or process nitrate compounds at levels above the TRI reporting trigger, so they did not report nitrate compounds released to surface water during recent reporting years, with the exception of 2008. All other years did not require TRI reporting for nitrate compounds. Nitrates data would provide IDEM with information necessary to determine if effluent limitations will be required in the future. The BP permit renewal 2C application for outfall 005 has a Nitrate-Nitrite concentration of <0.1. but IDEM has decided to require Nitrate-Nitrite to be monitored and reported at Outfall 005.

Comment 26:

IDEM Should Reject Applicant's Operational and Monitoring Method Interpretation of the Outfall #005 Effluent Limitation for Phosphorus

Applicant's 2007 NPDES Permit and the present IDEM Draft Permit both contain effluent limitation and monitoring requirements for phosphorus. Applicant's February, 2012 NPDES application contains an effluent characterization report for Outfall #005 showing a title legend of "Phosphorus (as P), Total." However, the note at the bottom of the page states:

> "Note: As per NPDES Permit, Ortho Phosphorus analysis is substituted for Total Phosphorus analysis"

However, Commenters have diligently searched both the existing 2007 permit and IDEM's Draft Permit, but can find no provision of either document which authorizes the Applicant to substitute the analytical method for ortho phosphorus instead of using the analytical method for total phosphorus.

Clearly, the absolute magnitude of reported phosphorus when using the analytical method for ortho phosphorus will be less than the absolute magnitude of an analytic result for reported phosphorus as total phosphorus on the same wastewater sample. IDEM must therefore clarify that the total phosphorus analytical method is required for compliance evaluation monitoring on the phosphorus effluent limitation. IDEM must determine if Applicant's use of the ortho phosphorus analytical method instead of the total phosphorus analytical method constitutes a long term violation of permit monitoring requirements since using the ortho-phosphorus method has the effect of deregulating that portion of total phosphorus effluents that are compounds which have not been oxidized to phosphate ion.

Response 26:

IDEM will specify in the permit that Total Phosphorus is the parameter for compliance evaluation monitoring for the Phosphorus effluent limit.

Comment 27:

Applicant Failed to Address Mercury Organo-Metallic Compounds

Applicant's wastewater characterization fails to address and/or identify organo-mercury compounds in the Refinery effluent. Compounds such as methyl mercury, ethyl mercury, and phenyl mercury are likely to be contained if Applicant's effluent because of inherent chemical and biological processes taking place in Applicant's facility. These compounds must be evaluated for aquatic toxicity and environmental fate if they are present in the facility's industrial process wastewater from Outfall #005.

IDEM should additionally clarify on the record whether reported total mercury analytical determinations using EPA Method 1631 Revision E reflect or do not reflect the amount and presence of methyl mercury, ethyl mercury and phenyl mercury contained in industrial wastewater samples analyzed under this EPA reporting method.

Response 27:

By definition in Method 1631 Revision E, total mercury is all BrCl-oxidizable mercury forms and species found in an unfiltered aqueous solution. This includes, but is not limited to, Hg(II), Hg(0), strongly organo-complexed Hg(II) compounds, adsorbed particulate Hg, and several tested covalently bound organo-mercurials (e.g., CH3HgCl, (CH3)2Hg, and C6H5HgOOCCH3). The recovery of Hg bound within microbial cells may require the additional step of UV photo-oxidation. In this method, total mercury and total recoverable mercury are synonymous.

Methyl mercury (CH_3Hg^+) , ethyl mercury ($C_2H_5Hg^+$), and phenyl mercury ($C_6H_5HgOOCCH_3$) are all organomercury compounds.

Comment 28:

Applicant Failed to Submit the Ambient Lake Michigan Receiving Water Quality Data to Support the Permit Application

IDEM binding regulations at 327 IAC 5-2-3 on permit applications requires Applicant as a party seeking permit re-issuance to submit "valid, representative receiving water body monitoring data for every metal monitored or limited in the applicant's existing permit." Applicant failed to submit the required ambient Lake Michigan water quality data necessary for a complete application under 327 IAC 5-2-3.

Response 28:

IDEM did not find it necessary to request any additional water quality data for Lake Michigan due to the amount of existing water quality data.

Comment 29:

Neither the Applicant nor IDEM Submitted, Published or Produced a Current PEQ/PEL Analysis

Commenters have diligently searched materials disclosed by IDEM, including the NPDES permit application and the IDEM Fact Sheet, and none of these materials contains a current review of Projected Effluent Quality and Preliminary Effluent Limitations (PEQ/PEL analysis). Such analysis is necessary under 327 IAC 5-2-11.5 to justify the determination and setting of WQBELs contained in the permit as issued; or to justify excluding pollutants contained in Applicant's Refinery wastewater effluents from consideration for WQBEL development.

Commenters object to any IDEM reliance for purposes of WQBEL determination and permit issuance decision-making on the previously produced 2006-2007 PEQ/PEL table for use in the present permitting matter. In the context of the present agency decision-making matter, the 2006-2007 PEQ/PEL analysis is out of date and cannot be relied upon as a valid analysis to reflect present effluent concentrations. This is particularly the case given that Applicant's present effluent in 2012-2013 is considerably degraded compared to its previous 2006 effluent characterization for selenium, sulfate, chlorides, arsenic, lead, manganese, strontium, copper, arsenic and vanadium. See section V, *supra,* for a table that shows the quantified effluent quality degradation for these pollutants.

Commenters further object to IDEM's use of the 2006-2007 PEQ/PEL analysis, and IDEM's ongoing failure to produce more current analysis, for the reasons set forth in subsection C, *infra*. The 2006-2007 PEQ/PEL table implicitly relies on a dilution ratio at the edge of the alternate mixing zone provided as an artifact of the operation of the diffuser apparatus. However, as discussed in subsection C, the dilution strategy decision allowing that revised mixing zone edge dilution ratio was a decision not properly vetted or authorized under 40 C.F.R. §125.3 (f).

Response 29:

The following is a description of the process used to determine if the new effluent data contained in Forms 2C and 2F would indicate that there is a reasonable potential for a pollutant that is not currently limited in the NPDES to cause or contribute to an exceedance of the water quality criteria for that pollutant, specifically: selenium, sulfate, chloride, arsenic, lead, manganese, strontium, copper and vanadium.

IDEM relied on the data used in the 2006/2007 RPE analysis to establish the range of pollutant concentrations that were found to be present in the effluent and then compared the effluent values found in Form 2C to the dataset used in 2006/2007 to determine if the effluent data was still within the rage found in the 2006/2007 dataset that was used to establish the need for the WQBELs in the 2007 NPDES permit.

IDEM also conducted a simplified worst case RPE analysis of the new effluent data contained in the 2012 2C application by developing a waste load allocation model using the dilution provided by the diffuser and comparing those WQBELs to the maximum PEQ possible which is based on the highest single data point times the maximum variability factor of 6.2. Also see Response 23.

Pollutant	Daily Maximum	Variability Factor	Maximum PEQ	Monthly Average WQBEL (PEL)In mg/l
Selenium	0.038	1.1	0.042	0.13
Sulfate	868	1.1	955	6,900
TDS	2,143	1.1	2357	18,000
Chloride	611.0	1.1	672	7,200
Arsenic	0.014	6.2	0.087	4.50
Lead	0.043	1.1	0.047	0.28
Manganese	0.12	6.2	0.74	21.0
Strontium	0.9	1.1	5.6	630.0
Copper	0.019	1.1	0.02	0.34
Vanadium	0.84	1.0	0.0.84	0.73

If not already limited, IDEM is requiring all of these parameters to be monitored at Outfall 005.

See response 24.

Comment 30:

The Diffuser Was Used as a Basis to Meet Water Quality Standards Without the Necessary Analysis

The Applicant and IDEM failed – in both the 2007 NPDES permit and now in the Draft Permit – to properly vet the diffuser as a dilution method and the primary strategy to address water quality standard violations. EPA rules provide:

(f) Technology-based treatment requirements cannot be satisfied through the use of "non-treatment" techniques such as flow augmentation and in-stream mechanical aerators. However, these techniques may be considered as a method of achieving water quality standards on a case-by-case basis when:

(1) The technology-based treatment requirements applicable to the discharge are not sufficient to achieve the standards;

(2) The discharger agrees to waive any opportunity to request a variance under section 301 (c), (g) or (h) of the Act; and

(3) The discharger demonstrates that such a technique is the preferred environmental and economic method to achieve the standards after consideration of alternatives such as advanced waste treatment, recycle and reuse, land disposal, changes in operating methods, and other available methods."

40 C.F.R. 125.3(f). Because the installation of a diffuser was a non-treatment technique for meeting water quality standards, IDEM was required to use decision-making standards under 40 C.F.R. 125.3 (f) during the issuance of the 2007 permit to allow the dilution strategy to meet Indiana water quality standards in Lake Michigan receiving waters and to allow the alternate mixing zone intrinsic to the use of the end-of-pipe diffuser.

However, IDEM never required Applicant – either in 2007 or in the Draft Permit -- to submit a proper demonstration meeting all parts of the three criteria of the rule and no aspect of IDEM's 2007 permit issuance decision can be considered as a declaration and agency explanation that IDEM complied with all requirements of 40 C.F.R. 125.3(e) and (f) or that this issue was properly vetted and explained in the public notice or that it was otherwise an element of IDEM decision-making in the 2007 permit issuance.

As a practical matter neither IDEM nor Applicant could properly address all three factors so as to allow such a pollution effluent dilution scheme with the diffuser under the plain meaning of the provisions of 40 C.F.R. §125.3 (f). Neither IDEM nor Applicant made any inquiry into, or determined what level of effluent limitation control reflected BAT-BPJ for the non-ELG pollutants, so it would have been impossible to address the first factor with no issued BAT-BPJ effluent limitation or determination. On 40 C.F.R. §125.3(f)(2) evaluation, there is no evidence that the Applicant ever certified that it would give up the variance application rights articulated in that specific provision.

On 40 C.F.R. §125.3(f)(3) evaluation, Applicant and IDEM considered a portion of the issues articulated in the criteria for decision making, but no complete demonstration addressing all aspects of the required criteria was carried out in the 2007 permit issuance. In particular, a proper inquiry for good faith determination under 40 C.F.R. §125.3(f)(3) mitigates that alternatives such as considering what

effect that refinery feedstocks have on effluents and water quality compliance is a valid and needed exercise.

Response 30:

A diffuser does not augment or dilute the effluent. A diffuser results in rapid mixing of the effluent with the receiving water. The discharge is occurring in Lake Michigan within the mixing zone where discharge induced mixing already occurs.

The use of a diffuser does not constitute flow augmentation and does not require any additional approval by IDEM other than the approval process for an alternate mixing zone found in the Indiana Water Quality Standards (327 IAC 5-2-11.4) and NPDES permit implementation rules.

The NPDES permit limits meets all applicable water quality standards as required at the edge of the approved alternate mixing zone. The alternate mixing zone was appropriately approved by IDEM during the previous permitting process.

Comment 31:

As a result, no portion of the 2007 permit issuance matter addressing the use of non- control dilution methods to meet water quality standards can be considered as having been lawfully authorized by IDEM under 40 C.F.R. §125.2(f). Because the 2007 Permit matter and submittal were not properly authorized under 40 C.F.R. §125.2(f), IDEM cannot allow or use the 2007 decision as basis for the required 40 C.F.R. §125.2(f) demonstration in the present matter. Present issuance of an IDEM decision allowing a dilution strategy to meet water quality standards along with continued allowed use of a diffuser and alternate mixing zone must be considered in the present matter as a *de novo* agency decision based on the present permit application. Allowance of such continued dilution strategy practices that were previously authorized must be considered as being re-authorized in a permit re-issuance matter. Indeed, Applicant explicitly recognizes that its primary dilution strategy allowance to meet water quality standards with the diffuser must be re-authorized and justified in a permit re-issuance matter, as shown in Item #4 on page 4 of the Fact Sheet ("BP Whiting requests the continuation of the alternate mixing zone for the Outfall 005 high rate multiport diffuser, including the application of a 37.1:1 mixing ratio for water quality based effluent limit (WQBEL) development. Per part I.H.1 of the existing permit, BP submitted the diffuser operation and maintenance plant to IDEM (Current revision = 8/22/2011).

Although the Applicant requested renewal of the dilution strategy, the diffuser and the mixing zone, nothing in Applicant's submittal is or can be construed as a demonstration that complies with 40 C.F.R. §125.3(e) & (f) (and notably the 3 criteria under (f)) for continuing to allow a non-control dilution method. On review of IDEM's present matter and authorization under 40 C.F.R. §125.3(f)(2), Commenters can find no evidence of the required Applicant certification necessary to approve a request for

allowance of a non-control dilution method. Commenters can find no clearly articulated demonstration under 40 C.F.R. §125.3(f)(3) that justifies the renewal decision allowing the dilution strategy, diffuser operation and alternate mixing zone. It is thus evident that IDEM has not adequately considered the decision to allow the continued dilution strategy, diffuser operation and alternate mixing zone in a manner in compliance with the decision standards of 40 C.F.R. §125.3 (f).

Response 31:

See Response 30.

Comment 32:

The Permit Lacks Whole Effluent Toxicity Limitations

In issuing the Outfall #005 effluent limitations and monitoring table in the Draft Permit, IDEM eliminated both the acute and chronic Whole Effluent Toxicity ("WET") effluent limitations of 1.0 TUa and 1.0 TUc that were present in the existing permit Outfall #001 effluent limitations table. In addition, IDEM eliminated all acute WET testing in the Outfall #005 effluent limitations and monitoring table. Both of these changes are unacceptable for a facility effluent which contains increased amounts of toxicants and nonconventional pollutants with the advents of Applicant's increased utilization of tar sands crude feedstocks containing more metals, dissolved solids, sulfate and chlorides.

Neither the permit application nor the IDEM Fact Sheet contain a current PEQ/PEL determination on Whole Effluent Toxicity that was produced in association with the decision to issue the Draft Permit and to publish the IDEM Fact Sheet. As a result, IDEM's decision to terminate all WET effluent limitations and to terminate acute WET monitoring impermissibly depends on an analysis carried out in 2006-2007 of WET testing results on an effluent at that time whose quality is markedly degraded presently compared to the 2006-2007 time frame when the WET PEQ/PEL analysis was carried out.

Response 32:

The waste load allocation model completed in 2007 for the existing permit calculated a Chronic Toxic Unit Limit of 37 Toxic Units. That limit is still valid. BP has conducted Whole Effluent Toxicity tests of their effluent every six months and has yet to approach the level of 37 chronic toxic units. There is no reasonable potential for BP to exceed 37 chronic toxic units based on the data, therefore numeric effluent limits are not warranted.

IDEM has retained the permit requirement to conduct WET testing every six months and to conduct a toxicity identification evaluation and then a toxicity reduction evaluation if the effluent exceeds 37 chronic toxic units.

Comment 33:

The Draft Permit Materials Contain No Showing that Applicant Will Not Cause Acute Toxicity from Excessive Concentrations of WET Acute Toxic Units Inside of the Mixing Zone

Indiana Water Quality Standards prohibit effluent source discharges that cause acutely toxic concentrations of pollutants, including WET Acute Toxic Units, inside of discharge mixing zones pursuant to 327 IAC 2-1-6(a)(1)(E). The effect of these requirements is that dilution assumptions concerning the effluent after it leaves any portion of the diffuser apparatus must not be used in addressing whether the any portion of the diffuser effluent causes immediate acute toxicity inside the mixing zone.

Nothing in the IDEM Fact Sheet, the underlying file or in permit application is a demonstration or showing that Applicant's discharge of acute WET Toxic Units will not cause unacceptable and prohibited amounts of acute toxicity inside the approved mixing zone and directly adjacent to diffuser effluent discharge ports for the Outfall #005 discharge in violation of Indiana Water Quality Standards at 327 IAC 2-1-6(a)(1)(E).

Additionally, the failure of the Draft Permit to include both acute WET water quality based effluent limitations and acute WET monitoring requirements means that no effluent limitations and monitoring requirements on the end of pipe discharge protect and ensure compliance with the Indiana Water Quality Standard prohibition on acutely toxic amounts of WET discharged at any point inside of Applicant's approved alternate mixing zone.

Response 33:

Part G.1.f. contains both the acute and chronic triggers. A separate acute test is not required as those results may be extrapolated from chronic test data.

Comment 34:

IDEM Should Establish Internal Outfall Monitoring Points

In order to ensure proper and thorough monitoring, IDEM should reformat Applicant's permit in order to establish multiple internal outfalls for the sampling points for purposes of ongoing, permit-required technology-based effluent limitation compliance measurement and determination. For example, IDEM should establish internal outfalls, monitoring requirements for those outfalls and technology-based effluent limitations specific to those internal outfalls covering sour water processing sewers and the brine treatment unit discharge points. Mercury and mercury compounds should be addressed at the internal monitoring points.

Internal outfalls and monitoring points are advantageous for wastewater treatment stewardship, regulatory accountability and individualized treatment process efficacy

monitoring in the control of toxic and hazardous industrial wastewater constituents. The reason for this advantage of internal outfalls and sampling points is that direct monitoring at the treatment unit outlet of a treatment unit allows process-individualized toxicant detection and monitoring of the specific internal monitoring point in question. A second important benefit of internal monitoring points for Applicant's facility is that wastewater analytical method detection and quantification limits pose much less of a problem for internal monitoring points when flows at such internal outfalls are not diluted by other process, cooling water and stormwater flows as they are at the point of final effluent discharge.

Response 34:

There has been no demonstrated need to require internal monitoring points at any additional locations to determine compliance with the final effluent limits and the technology based effluent limits required by the federal effluent limitation guidelines for petroleum refining (40 CFR Part 419). Technically, Outfall 005 effluent is measured at an internal point prior to being released into the discharge pipe leading to the diffuser because the point of discharge is submerged in Lake Michigan, but that point occurs after the wastewater has received all treatment which is the ideal location to monitor for compliance with the final effluent limits. No additional internal monitoring points will be included in the permit.

Comment 35:

Additionally, the Outfall #002 annual total organic carbon monitoring frequency is too infrequent to be able to ensure that applicant can ensure regular compliance with effluent limitations. The Outfall #002 effluent limitation table contains an effluent limitation on the net total organic carbon concentration but only requires one analytical sample annually. Such limited monitoring cannot be used by Applicant to ensure that its effluent complies with the stated effluent limitation. More regular monitoring should be required and the frequency and internal monitoring point locations should be established in the cooling water system for the refinery so that cooling water TOC monitoring can detect the process group location of any leaking heat exchangers which may allow petroleum hydrocarbons to enter the cooling water circuit.

Response 35:

BP Products North America, Inc. has implemented a program to monitor each of their Heat Exchange Systems in the cooling water system on a monthly basis to measure the concentration of methane in accordance with a Clean Air Act rule found at 40 CFR 63.654 (effective on October 29, 2012). This system is designed to discover leaks within the cooling water system and all leaks must be repaired within45 days after detection.

IDEM believes that the cooling water heat exchanger monitoring system required by 40 CFR 63.654 will be more effective at detecting and correcting any leaks in the heat exchanger systems at BP than increased monitoring for Total Organic Carbon at the

final Outfall 002. Therefore, IDEM does not see a need at this time to increase the monitoring frequency for TOC in the final permit.

Comment 36:

Various Aspects of the Monitoring Requirements Need to be Strengthened and Clarified

IDEM should revise and amend the format of its permit effluent limitation tables or supplement the presentation of such information in a manner so that each monitoring requirement provided in the permit indicates the specific EPA analytical method or other specific technical method the Applicant is required to use in carrying out its effluent monitoring activity. In addition to listing the specific analytical method for each pollutant, IDEM should also list what Limit of Detection ("LOD") and Limit of Quantification ("LOQ") for each monitored pollutant that Applicant is expected to demonstrate in carrying out the EPA or other technical analytical method for wastewater characterization.

For all of the monitored pollutants that are subject to 24-hour composite sampling requirements, IDEM should publish a determination in the Fact Sheet that such 24 hour composite sampling collection and methods are compatible and consistent with maximum sample holding time requirements of the specific technical analytical method for the specific pollutant in question.

Footnote #4 for the Outfall #002 is too vaguely stated to be enforceable in practice. "Net temperature" is not defined, and this term is not a unit or a valid physical description of the effluent limitation shown in the table as maximum heat release in BTU's per hour. References to 'appropriate conversion factor' are similarly vague. Footnote #4 should be replaced with a clearly stated method of calculating the hourly heat released from calculation of intake and outfall energy rates using equations and defined variables as stated in the calculation methodology.

Since the aquatic toxicity of ammonia depends on temperature and pH in addition to the ammonia concentration, on how compliance with Indiana Water Quality Standards addressing ammonia is maintained both inside of the mixing zone and at the edge of the mixing zone without requiring continuous measurement of both temperature and pH to support assurance of maintenance of WQS for ammonia.

Response 36:

The heatload shall be calculated by subtracting the average 24 hour temperature value of the intake water from the average 24 hour temperature value of the gross discharge every hour, converting to BTU/hr by multiplying the temperature difference by the average 24 hour discharge flow and the appropriate conversion factor. BP uses instrumentation to measure temperature on a continuous basis except for periods of downtime, maintenance, repair or upset.

Section 6.2 will be added to the Fact Sheet: Analytical and sampling methods used shall conform to 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).

In accordance with 327 IAC 5-2-11.6(h), the analytical method, LOD and LOD must be specified in the permit when a WQBEL for a pollutant is calculated to be less than the LOQ. Therefore, WQBELs greater than the LOQs don't require a list of approved methods to be included in the permit. The permittee can use methods approved in Part 136 as long as they are sensitive enough. Using methods that are approved but have high(er) levels of detection are not necessarily desirable by the permittee since IDEM would set the concentration of the discharge at the detection level when determining the projected effluent quality. It would always be in the permittees best interest to use the method with the lowest detection level to determine the most accurate waste characterization (effluent quality) of the discharge.

Comment 37:

Proposed Changes Part IA1
Outfall 005

- Update the description of Outfall 005 to match the language in the fact sheet on page 4 paragraph 6. IDEM should delete NiSource Whiting Clean Energy (we no longer take their wastewater as of November 2007) and should include Praxair and other related offsite facilities such as pipelines and tenninals.

- Typo for Phenolics: We believe it should be 24 hour composite. Same as previous permit. We have an acceptable compositor for this sampling.

- Typo for Sulfide. Sulfide was requested to be a grab sample so preservation can be done properly. BP requested this in response to an EPA recommendation concerning sampling procedures. We believe IDEM inserted "Grab" for Phenols mistakenly instead of Sulfide

- A notation should be added to the table under footnote (5) clarifying that BP should use EPA Method 1631, Revision E or the most current version of that method, if later revisions are approved. The following sentence is taken from footnote (5): If EPA Test Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to utilize the most current version of the method as soon as possible after approval by EPA but no later than the second monitoring event after the revision.

Part 1A2 Outfall 002

- We now have continuous temperature indicators for our intake and discharge. See proposed language changes in redline permit to reflect the appropriate monitoring and calculation.

Part IA3 Outfall 003/004

- Typo on Description of Outfall : delete extra quote mark

Section B, C

- Section B typo. Should be Section C Monitoring and Reporting

Section D

- Section D needs to be reworded or deleted. The inclusion of Outfall 005 in the stormwater requirements is not appropriate here. See attached redline copy of permit language changes needed if section D not deleted. Decision needed: Do we require SWPPP for storm water that is collected and treated?

- Please also find below additional justification to remove this language.

Response 37:

The description of Outfall 005 in the permit has been corrected as requested.

IDEM has determined that the appropriate sample type for Phenolics is a grab sample. Therefore, the request to change the sample type for phenolics to a 24 hour composite is denied.

IDEM has determined that the appropriate sample type for Sulfide is a 24 Hour Composite. Therefore, the request to change the sample type for Sulfide to a grab sample is denied.

Footnote [5] for Outfall 005 includes the following language:

> The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

Proposed changes to Part IA2 of the permit regarding temperature monitoring and reporting have been made

The typos have been corrected.

Outfall 005 is no longer required to develop a SWPPP for the refinery area that

discharges through Outfall 005.

Comment 38:

Part J.D. Storm Water Monitoring and Non-Numeric Effluent Limits

BP requests that IDEM remove this part of the Draft Permit in its entirety. Stormwater monitoring and numeric effluent limits already are provided for Outfalls 003 and 004 in part I.A and I.E. As a result, there is no need for extensive monitoring or non-numeric effluent limits such as those proposed here. BP's stormwater performance is exemplary. Given only one exceedance in the past five years at a stormwater outfall, there are no significant problems that would require such a substantial revision to the stormwater portion of the Draft Permit.

In addition, the industrial activities occurring in the areas contributing to Outfalls 003 and 004 are minimal; these areas consist of tank farms and containment dikes only. Further, BP already has instituted sufficient control measures for these areas. In addition to its SWPPP, BP has the ability to retain stormwater in the tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if an oil sheen is present. See Draft Fact Sheet at p. 8. As a result, the proposed Part I.D. requirements are either inapplicable or unnecessary. The stormwater provisions contained in the current Permit, along with the monitoring and numeric effluent limitations imposed at Outfalls 003 and 004, are more than sufficient to ensure that BP's stormwater discharges comply with all applicable Clean Water Act (CWA) requirements.

The Fact Sheet describes the proposed stormwater requirements as follows: According to 40 CFR 122.26(b)(l4)(ii), facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29,311, 32 (except 323), 33, 3441, 373 are considered to be engaging in 'industrial activity' for purposes of 40 CFR 122.26(b). Therefore, the permittee is required to have all storm water discharges associated with industrial activity permitted. Treatment for storm water discharges associated with industrial activities is *[sic]* required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to BPT/BAT/BCT for storm water associated with industrial activity.

Draft Fact Sheet at 30 (emphasis added). EPA's determination, however, fails to consider that no such minimum requirements are necessary where a stormwater discharge already is controlled by numeric effluent limits and existing control measures that will provide complete treatment at the facility's wastewater treatment plant if necessary to prevent any non-compliant discharge. In addition, EPA's determination appears to require incorporation of many provisions taken directly from its own Multi-Sector General Permit (MSGP). Application of such provisions is both premature and inappropriate, because IDEM has not adopted the MSGP

into its Rule 6 permits or any replacement general permit for stormwater discharges associated with industrial activity. IDEM has no authority to adopt the federal MSGP on a case-by-case basis in NPDES permits, without the benefit of a formal rulemaking process.

Further, a number of the stormwater provisions proposed in Part I.D. of the Draft Pemit are not authorized by the CWA. Certain provisions attempt to regulate stormwater flow and velocity. The CWA and applicable regulations, however, only authorize the control of pollutant discharges to waters of the state. Stormwater flow is not a pollutant. *See, e.g., Virginia DOT v EPA,* No. 1:12-CV-775 (E.D. Va. Jan. 3, 2013). Other provisions attempt to control activities occurring on the BP facility that do not result in pollutant discharges. As noted above, BP's stormwater discharges are sufficiently controlled by application of the numeric effluent limits applied at Outfalls 003 and 004, the stormwater provisions contained in the current Permit, and the existing control measures noted in the Draft Fact Sheet that allow BP to retain stormwater in tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if needed. No further measures are necessary or authmized. Therefore, BP requests that Part I.D. be removed from the Draft Permit. All statements concerning this part should be removed from the Fact Sheet.

Response 38:

IDEM has revised Part I.D. of the permit. This provsision now includes special conditions which implement the SWPPP. These provision were previously in Part I.D (Storm Water Pollution Prevention Plan Requirements) of the 2007 permit.

References to non-numeric effluent limits and their equivalence to BPT/BAT/BCT were deleted from the fact sheet.

The NPDES permit will retain the requirement to develop a SWP3 for the storm water from Outfalls 003 and 004 at the BP facility. Storm water collected within the refinery area is treated using the wastewater treatment system that is used to treat all of the process wastewater from the refinery. The addition of storm water equalization tanks ensures capture of all the storm water that is exposed to industrial activity within the refinery area. The storm water collected within the refinery area is then treated at the process advanced biological wastewater treatment system which consists of the following treatment components: oil/water separators, dissolved air flotation, activated sludge treatment plant, clarifier and final filtering processes.

This level of storm water collection and advanced wastewater treatment of the collected storm water from the refinery area that discharges through Outfall 005 meets the BAT requirement for storm water associated with industrial activity as required by 40 CFR 419. Because of this level of treatment there are no requirements in Parts I.D. or I.E. related to the stormwater being discharged through Outfall 005. Parts I.D. and I.E.

apply to storm water at outfalls 003 and 004.

Comment 39:

In the event that IDEM does not remove Part I.D., BP has additional comments, as follows:

Part I.D. Storm Water Monitoring and Non-Numeric Effluent Limits (p12 of 51)

BP requests that the following language from the current permit be added at the end of the first paragraph to clarify that all stormwater requirements apply only to activities related to the discharge at Outfalls 003 and 004:

Notwithstanding any other provision of this permit, the Storm Water Monitoring and Non-Numeric Effluent Limits and SWP3 are not required to address storm water discharges that are routed to treatment and then discharged through Outfall 005.

Response 39:

This statement is included in the revised permit.

Comment 40:

Part I.D.I Control Measures and Effluent Limits (page12 of 51)

The definition of the term "minimize" as set forth in this section is too vague to allow BP to determine what is necessary to achieve compliance, and should be removed.

Response 40:

This provision has been removed from the revised permit.

Comment 41:

Part I.D.2 Control Measures (p13 of 51)

As noted above, the non-numeric effluent limits proposed in this section are unnecessary and unauthorized. The BP stormwater discharges are sufficiently controlled through application of numeric effluent limits at Outfalls 003 and 004, the stormwater provisions contained in the current Permit, and existing control measures that allow BP to retain stormwater in tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if needed. The industrial activities that contribute

stormwater to Outfalls 003 and 004 consist of tank fanns and retention dikes only. As a result, no further control measures are necessary. BP requests that IDEM add language to this subpart to acknowledge the sufficiency of existing control measures.

In addition, BP requests that the provisions concerning stormwater run-on be removed. As indicated in the Fact Sheet at p9, run-on does not mix with stormwater from industrial activity at the facility. Further, BP should not be responsible for controlling pollutants in flows that it has no control over, and that are not associated with BP's industrial activities.

Response 41:

See Response 38.

Comment 42:

Part I.D.3 Control Measure Selection and Design Considerations (p13 of 51)

Provisions containing general guidance or advice rather than enforceable terms or conditions should be removed from the body of the Permit and contained in the Fact Sheet only. IDEM has authority to regulate the discharge of pollutants in the Permit, and should not attempt to regulatehow stormwater may or may not contact materials on site. Further, evaluation of such elaborate considerations should not be required for areas in which very limited industrial activities (tank farm storage) occur.

Response 42:

See Response 38.

Comment 43:

Part I.D.4.a. Minimize Exposure (p14 of 51)

The minimization requirements contained in this section are too vague to allow BP to determine what is necessary to achieve compliance, and should be removed. Further, evaluation of such elaborate considerations should not be required for areas in which very limited industrial activities (tank farm storage) occur. In addition, provisions containing general guidance or advice rather than enforceable terms or conditions should be removed from the body of the Permit. If necessary, that guidance can be provided in the Fact Sheet. BP requests that IDEM add language to this subpart or acknowledge the sufficiency of existing control measures, and to require additional measures only if existing measures are not working, and only as necessary to control stormwater discharged from tank storage areas. BP also requests language clarifying that this subpart does not

apply to any discharges that are routed to treatment and discharged through Outfall 005.

Response 43:

The language in Parts I.D. and I.E. has been appropriately modified to be more specific to the Whiting Facility.

Comment 44:

Part I.D.4.b. Good Housekeeping (p15 of 51)

These provisions are inapplicable to tank storage areas, and should be removed.

Response 44:

IDEM modified both Parts I.D. and I.E. to be more site specific.

Comment 45:

Part I.D.4.d. Spill Prevention and Response Procedures (p15 of 51)

Labeling, spill response, and reporting requirements are governed by other laws, and are outside the authority granted to IDEM under the CWA and applicable state laws and regulations. BP will comply with such requirements under other applicable laws, and should not be subject to potential liability under its NPDES Permit as well.

Response 45:

Where the requirements are being satisfied by other area's or applicable laws, then these are referenced in the SWP3. Some facilities have indicated that they were already doing some of the items to satisfy their Title V requirements and IDEM included alternative language to address the redundancy. BP can propose alternate or additional language but IDEM is not removing the language.
If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWP3, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWP3 to meet those section requirements. (See Part I. E(2)(d)(4))

This provision was replaced with Part I.D.1.a(1) which implements spill prevention provisions in Part I.D.2.c(2) of the 2007 permit.

Comment 46:

Part I.D.4.e. Erosion and Sediment Controls (pp15-16 of 51)

IDEM has no authority over "onsite" erosion that does not discharge to waters of the state, nor does it have authority to regulate stormwater flow. BP requests that this provision be removed. BP already has instituted an SWP3 and existing control measures sufficient to ensure compliance with all CWA requirements. In addition, provisions containing general guidance or advice (such as "you are encouraged to check out information from both the State and EPA websites") rather than enforceable terms and conditions should be removed from the body of the permit. If necessary, that guidance can be provided in the Fact Sheet.

Response 46:

This provision was replaced with Part I.D.1.b which implements the erosion and sediment control provisions in Part I.D.2.c(2) of the 2007 permit.

Comment 47:

Part I.D.4.f. Management of Runoff(p16 of 51)

IDEM has no authority to regulate stormwater flow or mandate infiltration, reuse, or other flow restrictions. In addition, BP already has instituted control measures that provide for infiltration and evaporation or treatment as necessary to prevent non-compliant discharges. However, such measures should not be required unless necessary. BP requests that this provision be removed.

Response 47:

IDEM modified both Parts I.D. and I.E. to be more reflective of the activities more specific to the BP Whiting Facility. This provision was replaced with Part I.D.1.b which implements the runoff management provisions in Part I.D.2.c(2) of the 2007 permit.

Comment 48:

Part I.D.4.g. Salt Storage Piles or Piles Containing Salt (p16 of 51)

BP requests that this subpart be removed as inapplicable to the tank farm areas that contribute stormwater to Outfalls 003 and 004.

Response 48:

IDEM modified both Parts I.D. and I.E. to be more reflective of the activities more specific to the BP Whiting Facility. This provision was removed from the permit.

Comment 49:

Part I.D.6. Corrective Actions- Conditions Requiring Review (pp17-18 of 51)

This provision is too vague to allow BP to determine what is necessary to achieve compliance, and improperly attempts to regulate activities already governed by other parts of the CWA and other regulations. BP requests that this provision be removed.

Response 49:

This provision simply requires that BP take corrective action in certain instances (i.e., an unauthorized discharge) and to document how the issue was addressed.

Comment 50:

Part I.D.7. Corrective Action Deadlines (p18 of 51)

This section should be removed because the corrective actions that it references are too vague to allow BP to determine what is necessary to achieve compliance, and attempts to regulate activities already govemed by other parts of the CWA and other regulations. In addition, many of the provisions are inapplicable to the tank storage activities occurring in the areas contributing stormwater to Outfalls 003 and 004.

Response 50:

See Response 49

Comment 51:

Part I.D.S. Corrective Action Report (p18 of 51)

This section should be removed because the corrective actions that it references are too vague to allow BP to determine what is necessary to achieve compliance, and attempts to regulate activities already governed by other parts of the CWA and other regulations.

Response 51:

See response 49.

Comment 52:

Part I.D.9. Inspections (pp19-21 of 51.)

The provisions contained in the current Permit are sufficient to ensure adequate

inspections. These provisions are overly restrictive and attempt to govem activities outside IDEM's NPDES authority, which already are governed by other legal and regulatory requirements. In addition, many of the provisions are inapplicable to the tank storage activities occurring in the areas contributing stormwater to Outfalls 003 and 004. BP requests that this provision be removed.

Response 52:

This provision was deleted and replaced with Part I.D.1.a.(4) and Part I.D.6 which implements the inspection and comprehensive site compliance evaluation provisions from Parts I.D.2.c(1)(D) and I.D.2 of the 2007 permit.

Comment 53:

Part I.E. Storm Water Pollution Prevention Plan (pp21-27 of 51)

For the reasons described above, BP requests that this provision be removed and replaced with the SWP3 provisions contained in the current Permit. The current Permit conditions, as well as the numeric effluent limits imposed at Outfalls 003 and 004, and BP's existing control measures are more than sufficient to ensure BP' s continued compliance with all applicable CWA requirements. All statements contrary to the SWPPP provisions contained in the current Permit should be removed from the Fact Sheet. In the event that IDEM does not revert to the SWP3 requirements contained in the existing permit, BP has the following additional comments:

Response 53:

IDEM modified the language in both Parts I.D. and I.E. for Outfalls 003 and 004 to be more reflective of the activities at the BP Whiting Site. The storm water special conditions and SWP3 requirments. These two provisions essentially are equivalent to Part I.D. of the 2007 permit.

Comment 54:

Section E

EI needs edits to language:" ... the permittee is required to revise and update the current Storm Water Pollution Prevention Plan (SWP3) for storm water outfalls 003 and 004 for the permitted facility". Outfall 005 is a process waste water discharge not storm water. All stormwater from the refinery areas is collected and commingled in the process sewers and fully treated as process wastewater. IDEM should revise the language consistent with the current permit.

Response 54:

This provision has been revised to apply only to outfalls 003 and 004.

Comment 55:

Add to section El line "d" to be the same as the current permit language.
"d. Not withstanding any other provision of this permit, the SWP3 is not required to address storm water that is routed to treatment and then discharged through Outfall 005."

Response 55:

This provision has been revised as requested

Comment 56:

Remove all provisions in E2b, c, and d that are inconsistent with or unnecessary to control of storm water discharges from tank storage areas, where very limited industrial activities occur.

Response 56:

The following provisions has been deleted: Parts I.E.2.b(2)(G), (H), (O), (P), and (T); Parts I.E.2.b(6); and Parts I.E.2.c(1)(A) and (B).

Comment 57:

Part E2d3 edit language to be consistent with annual basis, or within one year (not 365 days)

Response 57:

This provision has been revised to require the SWP3 be updated within one of the effective date of the permit.

Comment 58:

Section F and G

Typo on F5 : non vandium, delete 0
Section G 1c (1): BP requests that IDEM add "from time of last aliquot."

Response 58:

IDEM agrees to change the permit language as requested.

Comment 59:

Section G now has Acute Toxicity value of 11 TUa. BP requests that IDEM explain in the Fact Sheet the basis for inclusion of this trigger value, including that there is no reasonable potential for the BP discharge to exceed that value and no other toxicity concerns at this time.

Response 59:

IDEM acknowledges that there has been no failure of WET tests to indicate that there is a reasonable potential to exceed the Acute and Chronic trigger values of 11 acute toxic units and 38 chronic toxic values. BP is being required to monitor their effluent for toxicity due to the source and nature of the discharge. Any discharge from a petroleum refinery has potential to cause toxicity and this monitoring program will ensure that the effluent from the BP Whiting Refinery will not become toxic to the point that it harms the environment. IDEMs whole effluent toxicity language always includes the trigger values in appropriate toxic units. Because of the diffuser (which modifies the dilution ratio) both the acute and chonic values are affected. For chronic toxicity testing the acute toxicity levels are typically extrapolated from the chronic values.

Comment 60:

BP also requests that IDEM explain the basis for inclusion of two test species for biomonitoring, when the facility already has detennined that the flathead minnow is the most sensitive species.

Response 60:

IDEM believes it is prudent with each permit renewal to start over anew using both test species to account for all changes in the feedstock and wastewater treatment system that may impact the toxicity of the effluent.

After four tests have been completed, the permittee may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent. In the absence of toxicity with either species in the monthly testing for four (4) months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past.

Comment 61:

Part II

- Part II A4: Delete second paragraph last part "and NiSource ..." and add Praxair.

- Part II A17a include ... "that causes significant lowering of water quality" to complete the sentence as in the rule (327 IAC 2-1.3-3(c)(l)). The rule does not prohibit all new or increased discharges of BCCs other than mercury, but only those that cause a significant lowering of water quality.

- Part II B 3c1 Upset Conditions. Include "if possible" same as previous language, consistent with 327 IAC 5-2-8(12).

- Typo II C 1b delete comma and add "d" to discharge.

- Typo II C 1b add "However, this requirement does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions." This will ensure that the permit is consistent with IAC 5-2-9(2)

Response 61:

All references to NiSource and Praxair have been corrected in the permit

IDEM believes that the permit language regarding any increased discharge of Mercury is in compliance with 327 IAC 2-1.3.

Part II.A of the permit has been completely revised to include updated language that should have been in the permit. The existing permit was erroneously copied and used as the draft permit which contains the outdated standard language.

The phrase "if possible" is found in Indiana rules but it is not found in the federal language at 40 CFR Part 122.41(n). EPA has made comments about this discrepancy on previous permits that IDEM must be a stringent as the federal regulations, so IDEM has removed the phrase "if possible" from the permit template language.

IDEM has agreed to add the following sentence to Part II.C.1 (b): However, this requirement does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

Comment 62:

Part III

Part B third paragraph: remove from the last sentence "fish retum alternatives must be evaluated" and continue to list the items required to avoid confusion on what is required.

B2 should be removed or reworded such that BP will comply with the final rule for 316 (b) and notify IDEM of the plans for compliance in accordance with the rule requirements.

Response 62:

The requested language has been included in the NPDES permit.

Comment 63:

Part IV

Part IV B annual reports: should provide a hard date such as April 1 each year

BP requests that Part IV.D.3-6 be removed. These activities already have been completed, and need not be included in the permit.

Response 63:

The SMV annual reports will now be due on April 1st of each year. Items 3 through 6 in Part IV.D of the permit have been removed from the permit as requested.

Comment 64:

FACT Sheet Corrections/Comments:

BP also requests that IDEM indicate in the Fact Sheet that the SMV, including the PMPP, has been reviewed and approved by both IDEM and EPA.

p3, paragraph 7: Typo on Canadian Extra Heavy Crude.

p4, paragraph 6: Eliminate Whiting Clean Energy (they no longer send us any waste water as of November 2007 they send their waste water to City of Whiting).

p5, paragraph 11: IDEM did not revise the sulfide sampling to "grab," Done

p5, paragraph 14: IDEM did not include retreatment of off-spec WWTP effluent in the description of waste streams for Outfall 005 in the permit as it is included in the fact sheet.

p11, section 2.3, second paragraph: Add Clarifier as part of WWTP, remove Grit Chamber (it is out of service) also delete the sentence with NiSource Whiting Clean Energy and Ineos and add new sentence in place as follows: "BP also accepts and treats stormwater from Ineos at the wastewater treatment plant and the retreatment of off-spec WWTP effluent". Note that as of 2012 Ineos plant is permanently shut down only stormwater is routed to BP WWTP.

p12: Modify paragraphs on Whiting Clean Energy and Ineos. Add last sentence to

Whiting Clean Energy paragrpah as follows : "This has now been permitted to discharge to the City of Whiting and not to BP". Add last sentence to Ineos as follows : "As of 2012 the Ineos plant has since shutdown, but has only stormwater that drains directly to our WWTP". Delete Whiting Clean Energy from third paragraph under Ineos.

P15: There is an updated WWTP flow diagram (July 2012) that was submitted to IDEM when the final filters were replaced. This flow diagram should be used.

p18: The final filters are already installed. Replace the words "will be replaced" with "have been replaced"

p18: New/Upgrade Dissolved Air Flotation (DAF): paragraph should be modified to state "...installation of a new DAF or DNF to replace the existing DAF unit by Dec 31,2015."

p. 8: The PH limit of 9.0 exceeded in Jan 2010 is from Outfall 004 not 005. Create a separate note for Outfall 004 exceedances.

p22: Typo on first paragraph TEBLS should be TBELS.

p29, section 5.4: IDEM did not include how and why an acute value was added or justification for including a second test species. Please expand on that.

p30, section 5.6: Need to add the rest of 327 IAC 2-1.3 to end of sentence a: "...that causes a significant lowering of water quality."

p32, section 5.7: We do not agree that technology-based effluent requirements are needed for stormwater at Outfall 005, except to the extent of the limits included for Outfalls 003 and 004. These requirements in the permit and the Fact Sheet discussion should be deleted.

p32, 5th paragraph: Something appears to be missing in the last sentence describing the new stormwater equalization tank. "As with existing equalization/stormwater tanks,a 10 million gallon tank with an internal roof domed tank." Suggest delete the sentence, not needed.

p35, 4th paragraph: "it could be" should be deleted from the last sentence.

p37, WET: IDEM provided no justification for inclusion of an acute limit in the absence of RPE, or for adding another test species. Please clarify.

p43, 5th paragraph: Typo. "frazzle" should be "frazil"

p48, 1st standalone paragraph: IDEM has failed to explain why fish return alternatives must be evaluated when it has made a determination that the existing

structures represent the best technology available to minimize adverse environmental impact. There is a concern that new rules may not even require this

p50, Section 6.3: It is recommended that IDEM include the fact that both IDEM and EPA reviewed and approved BPs mercury variance application and pollutant minimization plans.

p55, It should be noted that items 3, 4 and 5 need of the PMPP have been completed .

Response 64:

Changes to the Fact Sheet have been made.as appropriate.

Comment 65: Submitted by Mr. Don Wilson on June 14, 2013

Zorbtech Environmental Solutions would like to submit a request to be participate in the trials now being implemented at Whiting Refinery. Mr. Bill Purves will be emailing you our results from some of our previous field work.
Zorbtech has developed one of the most efficient adsorbents on the market for the removal of dissolved mercury and in our last set of tests was able to reduce the level of mercury from 20ppt to 3.91ppt in 3 mins

I have also included a article outlining the project we conducted at the PPG Chlor Akali plant in WV. I look forward to meeting you and your team in the very near future and demonstrate our technology to you. I firmly believe this is the most efficient adsorbent on the market today for the removal of soluble mercury.

Response 65:

Thank you for making IDEM aware of your product designed to remove dissolved mercury from wastewater using adsorption. The Purdue/Argonne studies included an evaluation of mercury adsorption technology on the effluent from BP. Most of the mercury in the BP wastewater was found to be in particulate form and very little mercury (<1.0 ng/l) was found to be in the dissolved form. Researchers found that removal of particulate mercury by filtration was sufficient to meet the 1.3 ng/l WQBEL for mercury.

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

SEP 23 2013

REPLY TO THE ATTENTION OF:

WN-16J

Mr. Paul Higginbotham
Chief, Permits Branch
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: U.S. Environmental Protection Agency Review of NPDES Permit, BP Whiting Refinery, Whiting, IN, Permit No. IN0000108

Dear Mr. Higginbotham:

The U.S. Environmental Protection Agency has reviewed the draft proposed National Pollutant Discharge Elimination System Permit, fact sheet, and supporting documents for the BP Whiting Refinery referenced above and submitted to EPA on September 19, 2013. Based on our review to date, EPA does not intend to object to the issuance of the proposed permit. However, our position could change if modifications are made to the draft proposed permit that EPA has reviewed, there is a change in applicable law prior to IDEM's issuance of the final permit, or EPA learns of new information that causes EPA to reconsider its position.

When the proposed permit is issued, please forward one copy to this office at the above address, attention David Soong, NPDES Programs Branch, along with a summary of any modifications made to the draft proposed permit IDEM submitted to EPA on September 19, 2013. If you have any technical questions related to EPA's review, please contact David Soong of my staff. Mr. Soong can be reached by telephone at (312) 886-0136 or by Email at soong.david@epa.gov.

Thank you for your cooperation during the review process.

Sincerely,

Kevin M. Pierard, Chief
NPDES Programs Branch

cc: Steve Roush, IDEM

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

PUBLIC NOTICE NO. 2013 – 9I -F

DATE OF NOTICE: September 25, 2013

The Office of Water Quality issues the following **MAJOR INDUSTRIAL NPDES PERMIT RENEWAL:**

BP Products North America, Inc., NPDES Permit No. IN0000108, LAKE COUNTY, Whiting, Indiana 46394. The BP Products North America, Inc. is a petroleum refinery located within the boundaries of Whiting, East Chicago, and Hammond, Indiana. BP Products North America, Inc. is authorized to discharge treated process wastewater from normal refinery operations including maintenance, turnaround activities, excavation, dewatering, construction activities, tank cleaning, and temporary flows from upsets or downtime and storm water from Ineos, and process wastewater from Praxair, recovered ground water, and other related offsite facilities, such as pipelines and terminals wastewater as well as most of the storm water from the site and re-treatment of off spec WWTP effluent. This industrial facility discharges to Lake Michigan and the Lake George Branch of the Indiana Harbor Ship Canal via existing permitted outfalls. The refinery discharges, as a long-term average, 15.7 million gallons per day (MGD) of treated effluent through Outfall 005 into Lake Michigan. The maximum monthly average is 19.9 MGD. The refinery discharges, as a long-term average, 73.7 MGD of once-through non-contact cooling water through Outfall 002, into Lake Michigan. The refinery intermittently discharges the balance of its storm water through Outfalls 003 and 004 into the Lake George Branch of the Indiana Harbor Ship Canal.

As part of this NPDES permit renewal, IDEM has approved the continuation of alternate thermal effluent limitations in accordance with Section 316(a) of the Clean Water Act and 327 IAC 5-7. The Streamlined Mercury Variance has also been renewed in accordance with 327 IAC 5-3.5. Permit Writer: Steve Roush at (317) 233-5747 or sroush@idem.in.gov

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APPEAL PROCEDURES FOR FINAL PERMITS

The Final Permit (which includes the Fact Sheet, Response to Comments and other pertinent documents) is available for review & copies at IDEM/Office of Water Quality, IGCN 1255, 100 N Senate Ave, INDPLS, IN - from 9 – 4, M - F (copies 10¢ per page). To request an E mail copy, send to Damita Ivey at divey@idem.in.gov. The Permit also available at the Lake County Health Department, the IDEM Northwest Regional Office, and it is also posted on IDEM's web site at http://www.in.gov/idem/5338.htm. **Please tell others whom you think would be interested in this matter.** For information concerning your rights and responsibilities, go to http://www.in.gov/idem/5474.htm; Citizen Guide: http://www.in.gov/idem/5903.htm.

Appeal Procedure: Any person affected by the issuance of the Final Permit may appeal by filing a Petition for Administrative Review with the Office of Environmental Adjudication **within** eighteen (18) days of the date of this Public Notice. Any appeal request must be filed in accordance with IC 4-21.5-3-7 and must include facts demonstrating that the party requesting appeal is the applicant; a person aggrieved or adversely affected or is otherwise entitled to review by law.

Timely filing: The Petition for Administrative Review must be received by the Office of Environmental Adjudication (OEA) **within** 18 days of the date of this Public Notice; either by U.S. Mail postmark or by private carrier with dated receipt. This Petition for Administrative Review represents a request for an Adjudicatory Hearing, therefore must:

- state the name and address of the person making the request;
- identify the interest of the person making the request;
- identify any persons represented by the person making the request;
- state specifically the reasons for the request;
- state specifically the issues proposed for consideration at the hearing; and
- identify the permit terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES Permit.

If the person filing the Petition for Administrative Review desires any part of the NPDES Final Permit to be stayed pending the outcome of the appeal, a Petition for Stay must be included in the appeal request, identifying those parts to be stayed. Both Petitions shall be mailed or delivered to the address listed here:

Environmental Law Judge
Office of Environmental Adjudication
IGC – North Building- Room 501
100 N. Senate Avenue
Indianapolis, IN 46204

Stay Time frame: If the Petition (s) is filed **within** eighteen (18) days of the mailing of this Public Notice, the effective date of any part of the permit, within the scope of the Petition for Stay is suspended for fifteen (15) days. The Permit will become effective again upon expiration of the fifteen (15) days, unless or until an Environmental Law Judge stays the permit action in whole or in part.

Hearing Notification: Pursuant to Indiana Code, when a written request is submitted, the OEA will provide the petitioner or any person wanting notification, with the Notice of pre-hearing conferences, preliminary hearings, hearing stays or orders disposing of the Petition for Administrative Review. Petition for Administrative Review must be filed in compliance with the procedures and time frames outlined above. Procedural or scheduling questions should be directed to the OEA at the following telephone number: (317) 232-8591.

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

MAR - 5 2013

REPLY TO THE ATTENTION OF:

WN-16J

Mr. Paul Higginbotham
Chief, Permits Branch
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: U.S. Environmental Protection Agency Review of NPDES Permit, BP Whiting Refinery, Whiting, IN, Permit No. IN0000108

Dear Mr. Higginbotham:

The U.S. Environmental Protection Agency has reviewed the pre-public notice draft National Pollutant Discharge Elimination System Permit (Permit), fact sheet, and supporting documents for the BP Whiting Refinery submitted to EPA on February 28, 2013. Based on our review to date, EPA would not object to issuance of the permit. However, our position could change if the following occurs.

a. Prior to the actual date of issuance of a Proposed Permit, an effluent guideline or standard is promulgated which is applicable to the permit and which would require revision or modification of a limitation or condition set forth in the Draft Permit;

b. A variance is granted and the Permit is modified to incorporate the results of that variance;

c. There are additional revisions to be incorporated into the Permit which have not been agreed to by EPA; or

d. EPA learns of new information, including as the result of public comment, that causes EPA to reconsider its position.

Subject to the above conditions, the permit may be issued in accordance with the Memorandum of Agreement and pursuant to the Clean Water Act.

When the draft Permit is public noticed, please forward one copy of the public notice to this office at the above address, attention David Soong, NPDES Programs Branch. Please also

forward the permit that IDEM ultimately decides to issue with an indication as to whether that permit differs in any way from the February 28, 2013, draft Permit IDEM submitted to EPA, along with any significant comments received during the public comment period, to the same address. If you have any technical questions related to EPA's review, please contact David Soong of my staff. David Soong can be reached by telephone at (312) 886-0136 or by Email at soong.david@epa.gov.

Thank you for your cooperation during the review process.

Sincerely,

Kevin M. Pierard, Chief
NPDES Programs Branch

cc: Steve Roush, IDEM

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE OF DRAFT PERMIT RENEWAL WITH ALTERNATE THERMAL EFFLUENT LIMITS.

PUBLIC NOTICE NO. 2013 – 3K – RD/ATEL
NOTICE DATE: MARCH 28, 2013
RESPONSE DATE DUE: APRIL 29, 2013

MAJOR – RENEWAL

BP PRODUCTS NORTH AMERICA, INC., Permit No. IN0000108, LAKE COUNTY, Whiting, IN, a petroleum refinery located within the boundaries of Whiting, East Chicago, and Hammond, Indiana. The refinery produces a variety of petroleum products, including gasoline of all grades, diesel fuel, heating fuel, jet fuel, asphalt, and petroleum coke. The refinery also produces petroleum intermediates.

BP Products North America, Inc. is authorized to discharge treated process wastewater from normal refinery operations including maintenance, turnaround activities, excavation, dewatering, construction activities, tank cleaning, and temporary flows from upsets or downtime and from Ineos and NiSource Whiting Clean Energy, recovered ground water and most of the storm water from the site. This industrial facility discharges to Lake Michigan and the Lake George Branch of the Indiana Harbor Ship Canal via existing permitted outfalls. BP Products North America, Inc. discharges three types of wastewater: treated effluent; once-through non-contact cooling water; and storm water. BP Products North America, Inc. withdraws its water from Lake Michigan. The refinery discharges, as a long-term average, 15.7 million gallons per day (MGD) of treated effluent through Outfall 005 into Lake Michigan. The maximum monthly average is 19.9 MGD. The refinery discharges, as a long-term average, 73.7 MGD of once-through non-contact cooling water through Outfall 002, into Lake Michigan. The refinery intermittently discharges the balance of its storm water through Outfalls 003 and 004 into the Lake George Branch of the Indiana Harbor Ship Canal. The permittee has requested renewal of the permit. Published in the Post-Tribune & The Times

Thermal Effluent Limitations

1. The thermal component of the discharge (non-contact cooling water) is subject to effluent limitations under Clean Water Act (CWA), Section 301 or 306.

In the absence of a 316(a) thermal variance, the following temperature limitations apply for direct discharge to Lake Michigan based on the Indiana Water Quality Criteria found at 327 IAC 2-1.5-8(c)(4)(D):
At any time and at a maximum distance of a one thousand (1,000) foot arc inscribed from a fixed point adjacent to the discharge or as agreed upon by the commissioner and federal regulatory agencies, the following shall apply:

(A) The receiving water temperature shall not be more than three (3) degrees Fahrenheit (one and seven-tenths (1.7) degrees Celsius) above the existing natural water temperature.

(B) Thermal discharges to Lake Michigan shall not raise the maximum temperature in the receiving water above those listed in the following table, except to the extent the permittee adequately demonstrates that the exceedance is caused by the water temperature of the intake water:

Month	Temp (°F)	Temp (°C)
Jan	45	7
Feb	45	7
Mar	45	7
Apr	45	7
May	55	13
Jun	60	16
Jul	70	21
Aug	80	27
Sep	80	27
Oct	65	18
Nov	60	16
Dec	50	10

2. Section 316(a) of the CWA applies to point sources with thermal discharges. It authorizes the NPDES permitting authority to impose alternative effluent thermal limitations for the control of the thermal component of a discharge in lieu of the effluent limits that would otherwise be required under Section 301 or 306 of the CWA.

The NPDES permit for BP Products North America, Inc. contains alternate thermal effluent limits established in accordance with 327 IAC 5-7 and Section 316(a) of the Clean Water Act. The alternate limits of a net daily average of 1.7 million BTU/Hour and a net daily average maximum of 2.0 million BTUs/ Hour were developed as part of the 316(a) approval given to the previous owner of this facility (Amoco Oil Company) on June 16, 1975 by the U.S. EPA. The alternate limits were continued in the permit renewals that occurred prior to this renewal with the last renewal occurring on June 21, 2007.

A thermal impact study was completed in 2010 as a condition of renewing the alternate thermal limits. IDEM has reviewed the results of this study and the application for alternate thermal effluent limits in accordance with 327 IAC 5-7. IDEM proposes to allow BP Products North America, Inc. to continue using the existing alternate thermal effluent limitations at Outfall 002 because the alternate effluent limitations will continue to ensure the protection and propagation of the balanced and indigenous population of fish, shellfish and wildlife in and on the water body.

PROCEDURES TO FILE A RESPONSE

Draft documents are available for inspection at IDEM, Office of Water Quality, 100 N. Senate Av, Indianapolis, IN 46204 - 12th floor (east end elevators) from 9 – 4, M - F, (copies 10¢ per page). A copy of the Draft Permit is on file at the local County Health Department and is posted on IDEM's website at http://www.in.gov/idem/5338.htm. Please tell others you think would be interested in this matter. See these sites for your rights & responsibilities: http://www.in.gov/idem/5474.htm; Public Participation: http://www.in.gov/idem/4172.htm; Citizen Guide: http://www.in.gov/idem/5803.htm.

Response Comments: The proposed decision to issue a permit is tentative. Interested persons are invited to submit written comments on the Draft permit. All comments must be postmarked no later than the Response Date noted to be considered in the decision to issue a Final permit. Deliver or mail all requests or comments to the attention of Steve Roush at the above address, (mail code 65-42 PS). Comments will also be accepted via email, and should be sent electronically to sroush@idem.in.gov.

To Request a Public Hearing: Any person may request a public hearing. A written request must be submitted to the above address on or before the Response Date noted. The written request shall include: the name and address of the person making the request, the interest of the person making the request, persons represented by the person making the request, the reason for the request and the issues proposed for consideration at the hearing. The Department will determine whether to hold a public hearing based upon the comments and the rationale for the request. Public Notice of such a hearing will be circulated in at least one newspaper in the geographical area of the discharge and to those persons submitting comments and/or on the mailing list at least 30 days prior to the hearing.

in fact, develop nutrient management plans – and waste application rates – that comply with all applicable effluent limitations and standards.

399 F.3d at 500. Concerning the lack of public access to the BMP plans, the court held that the rule "deprives the public of the opportunity for the sort of regulatory participation that the Act guarantees because the Rule effectively shields the nutrient management plans from public scrutiny and comment." Id. at 503. It emphasized that the failure to provide public access to the BMP plans not only "prevents the public from calling for a hearing about – and then meaningfully commenting on – NPDES permits before they issue," but also "impermissibly compromises the public's ability to bring citizen suits, a 'proven enforcement tool' that 'Congress intended [to be used. . .] to both spur and supplement government enforcement actions.'" Id. (citations omitted).

Federal and state law governing NPDES permit issuance thus require that the *complete* permit – which, pursuant to Environmental Defense Center and Riverkeeper, includes the SWP3 – be formally reviewed by IDEM and made available to the public upon issuance of notice of issuance of the permit, so that it can be reviewed in connection with the public hearing and comment process. 40 C.F.R. § 124.10(d), 326 IAC 2-1.1-6(c).[2] The Draft Permit completely fails, by its own admission in the Fact Sheet, to comply with this requirement. The Draft Permit contains no indication that IDEM has reviewed the current SWP3 to determine whether it complies with Draft Permit and applicable law, and no requirement that the Department make any such findings concerning future iterations of the SWP3. It is plainly not sufficient to invite public comment only on the underlying BMPs, as the Department has done here, and leave to the permitee to its own unscrutinized devices in implementing those BMPs on site. Nor is it any help, as a legal matter, that the permit requires the SWP3 to be "certified by a qualified professional" (Draft Permit at 26). While we appreciate IDEM's informal assurance that subsequent iterations of the SWP3 will be posted on the Department's web site, this posting does not meet the requirements of the CWA as defined in Environmental Defense Center and Riverkeeper.

B. IDEM Should at Minimum Require Submittal of the SWP3

We are mindful of the concern expressed by IDEM that SWP3s must be flexible, and should not be inhibited by overly rigid public comment or agency review procedures. However, this concern is not grounds to simply ignore altogether the legal requirements applicable to SWP3s. IDEM could, at minimum and as a gesture of good faith, take steps to address the underlying concerns that prompted the judicial rulings concerning SWP3s described in the

[2] Texas Independent Producers and Royalty Owners Association v. United States Environmental Protection Agency, 410 F.3d 964 (7th Cir. 2005), addressed the issue of the availability of NOIs and SWP3s to the public in the general permitting process, but is inapplicable here. The court in that case held (declining to follow Environmental Defense Center on this point) that the CWA public notice procedures need not be read to encompass NOIs and the accompanying SWP3s submitted in the general permitting process within the definition of a "permit." Here, however, the SWP3 is not being submitted as part of a general permit process, but is expressly incorporated into BP's individual permit as a set of requirements. Thus, there is no question, as there was in Texas Independent Producers, that the SWP3 is part of the "permit" for which public notice and comment needs to be provided pursuant to 33 U.S.C. §§ 1342(j) and 1342(1)(a). We note also that Texas Independent Producers does not address at all the issue of agency review of the SWP3.

previous section, while still maintaining flexibility for amendment of SWP3s as necessary. While such action would not bring the Permit into compliance with the CWA, it would at least be a step in the right direction.

If IDEM took even the modest step of requiring that BP provide it with a current copy of the SWP3, the public would at least be able to submit a Public Records Act request for the document and review it. Commenters understand that SWP3s may potentially be updated with some frequency (although we do not know that to be the case with respect to BP's SWP3, as none of us has seen it). Although it would be ideal if each such iteration were submitted to IDEM and available to the public, even periodic reporting of an updated version of the SWP3 would at least provide the public with a sense of what specific steps are being taken onsite, and how those steps may have evolved over time.

We note, in this regard, that U.S. Steel readily agreed in 2009, despite IDEM's resistance, to make its SWP3 public. In an agreement executed shortly after the final permit was issued, U.S. Steel agreed not only to provide the citizens with a copy of its SWP3, but agreed to promptly provide them with updates to the SWP3 as well. Clearly, the company did not consider this limited requirement to be an undue burden, or a constraint on its flexibility in amending the SWP3. IDEM should mandate the same here, as the public's ability to view the SWP3 – a minimal portion of a much broader set of legal requirements concerning SWP3s – should not depend on any particular permittee's goodwill and agreement.

Finally, IDEM's assertion in the Fact Sheet that the SWP3 maintained at the Refinery can be made available on request to IDEM is not consistent with past practice in Commenters' experience. The Fact Sheet states,

> Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and it must be immediately available, at the time of an onsite inspection or upon request, to IDEM. Additionally, interested persons can request a copy of the SWPPP through IDEM. By requiring members of the public to request a copy of the SWPPP through IDEM, the Agency is able to provide the permittees with assurance that any Confidential Business Information contained within its SWPPP is not released to the public.

Commenters filed two public records requests with IDEM prior to submitting these comments, both requesting disclosure of Applicant's SWPPP for the subject facility. Neither of these requests was granted by IDEM, and the facility's SWPPP was never disclosed to Commenters.

C. The SWP3 Suffers from Technical Deficiencies

1. Condition I.D.1 Undermines the Required BAT/BCT/BPT Stringency of Non-Numeric Stormwater Effluent Limitations and Monitoring Requirements

The statutory basis for the required effluent limitations for stormwater control are found in the Act's requirements for technology-based effluent limitations ("TBELs") and in IDEM's rules for applying those requirements. When determining what level of effluent control

limitation should be achieved by the non-numeric stormwater effluent limitations and monitoring requirements, Applicant is bound by the CWA regulatory provisions and Indiana rule requirements on what stringency constitutes BAT/BCT/BPT.

Condition I.D.1 is an unsatisfactory description of the statutory level of required BAT/BCT/BP-level control of stormwater effluent, for two reasons. First, the condition language focuses the inquiry on what stormwater control measures are "technically available" rather than on what measures are "technically achievable" in addressing the technology-forcing aspects of BAT/BCT/BPT effluent limitation control. Second, it introduces the phrase "in light of industry practice." Since selection of BAT/BCT/BPT effluent limitation control stringency already considers alternative control methods in the determination of the required stringency of controls, restricting consideration of available controls only to the petroleum refining industry as articulated in a 'best industry practice' is a restriction on the scope of application of all available controls on stormwater that is inconsistent with a properly carried out BAT/BCT./BPT effluent limitation control stringency determination.

2. BAT/BCT/BPT-Compliant Stormwater Non-Numeric Effluent Limitation Controls as Required Work Practices are Not Enforceable in the Absence of Work Practice Record- Keeping Requirements

IDEM's Draft Permit contains no work practice record keeping requirements in association with the non-numeric stormwater effluent limits contained in Section I.D. of the Draft Permit. When BAT/BCT/BPT stormwater effluent limitations are stated as required work practices, such effluent limitations are not enforceable when no 'monitoring' in the form of record keeping requirements are imposed in carrying out the mandatory work practices stated in the stormwater control effluent limitations section.

II. Technology-Based Effluent Limitations

A. IDEM Must Require Best Available Technology for Nonconventional and Toxic Pollutants as Determined by Best Professional Judgment Review

Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 & 1342, require IDEM to establish numeric effluent limitations based on BAT for non-conventional and toxic pollutants discharged by the Refinery before issuing any NPDES permit that authorizes such discharges. *See* 33 U.S.C. § 1311(b)(2)(A)(i) (point sources "shall" achieve "effluent limitations" that "shall require application of" BAT to reduce pollutant discharges to the maximum extent "technologically and economically achievable," including "elimination of discharges of all pollutants" if it is achievable); *id.* § 1342(a)(1) (requiring that NPDES permits may only be issued "upon condition that" they ensure that, *inter alia*, the requirements in 33 U.S.C. § 1311 are met).

Federal regulations promulgated by USEPA likewise require that "[t]echnology-based treatment requirements under Section 301(b) of the [CWA] represent the minimum level of control that *must be imposed*" in a NPDES permit. 40 C.F.R. § 125.3(a) (emphasis added). BAT is a stringent treatment standard that has been held to represent "a commitment of the maximum

resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 74 (1980).[3]

Because USEPA's applicable Effluent Limitation Guidelines ("ELGs") for Petroleum Refineries[4] do not yet include BAT limits for specific pollutants discharged by Applicant's petroleum refinery facility, USEPA regulations require IDEM to use its best professional judgment ("BPJ") to set BAT TBELs for these discharges. 40 C.F.R. § 125.3(c)(2), (d) ("to the extent that EPA-promulgated effluent limitations are inapplicable," NPDES permit writers "*shall apply* the appropriate factors listed in § 125.3(d)" to set case-by-case technology-based effluent limitations based on BPJ) (emphasis added); *see also* 327 IAC 5-5-2.[5]

The Refinery was an existing source as of the date of the 1972 passage of the CWA amendments creating the BAT requirement for such existing sources, including the required case by case BAT effluent limitations determined through BPJ for nonconventional and toxic pollutants. Under these provisions, IDEM was required to bring the Applicant into compliance with BAT-BPJ requirements through imposition of effluent limitations in permits by a date not later than March 31, 1989.[6]

IDEM itself acknowledges in the Fact Sheet its obligation to establish BAT TBELs based on BPJ under Clean Water Act § 301, and that this obligation is separate and independent from its obligation to establish water quality based effluent limitations ("WQBELS") under Act § 302. The Department stated as follows:

> Two categories of effluent limitations exist for NPDES permits: Technology-Based Effluent Limits (TBELs) and; Water Quality-Based Effluent Limits (WQBELs). TBELs are developed by applying the National Effluent Limitation Guidelines (ELGs) established by USEPA for specific industrial categories TBELs are the primary mechanism of control and enforcement of water pollution under the Clean Water Act (CWA). Technology based treatment requirements under section 301(b) of the CWA represent the minimum level of control/treatment using available technology that must be imposed in a section 402 permit [40 CFR 125.3(a)].

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[1] Technology-based effluent limitations are a necessary minimum requirement for a permit "regardless of a discharge's effect on water quality." *Am. Petroleum Inst. v. EPA*, 661 F.2d 340, 344 (5th Cir. 1981); *see also PUD No. 1 Jefferson County v. Wash. Dep't of Ecology*, 511 U.S. 700, 704 (1994) (state water quality standards are "supplementary" to required individual TBELs) (citing *EPA v. Calif.* ex. rel. *Water Res. Control Bd.*, 426 U.S. 200, 205 n.12 (1976)); *Hooker Chems. & Plastics Corp. v. Train*, 537 F.2d 620, 623 (2d Cir. 1976) (CWA "predicate[s] pollution control on the application of control technology on the plants themselves rather than on the measurement of water quality.").

[4] See EPA regulations at 40 C.F.R. Part 419, Subchapters A-E.

[3] The use of the word "shall" in both the federal statute and regulations does not leave IDEM with any discretion as to whether technology-based effluent limitations should be established. *See Bennett v. Spear*, 520 U.S. 154, 172 (1997) (the imperative "shall" makes clear that the agency action specified is obligatory, not discretionary); *see also Alabama v. Bozeman*, 533 U.S. 146, 153 (2001) ("The word 'shall' is ordinarily the language of command.") (internal quotations and citations omitted).

[6] See 33 U.S.C. §1311(b)(2)(A), (C), (D) & (F)

> In the absence of ELGs, effluent limits can also be based upon Best Professional Judgment (BPJ). Accordingly, every individual member of a discharge class or category is required to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. This means that TBELs based upon a BPJ determination are applied at end-of-pipe and mixing zones are not allowed [40 CFR 125.3(a)]. Similarly, since the statutory deadlines best practicable technology (BPT), best available technology economically achievable (BAT) and best conventional control technology (BCT) have all passed; compliance schedules for these TEBLs are also not allowed. WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology.

Fact Sheet at 21-22. This statement was specifically made with respect to mercury, but IDEM presents no reason – because none exists – why this law does not apply equally to other pollutants covered by 33 U.S.C. § 1311(b)(2)(A)(i).

B. IDEM's Failure to Set BAT-BPJ Limits Leaves Multiple Pollutants with No Limits at All

IDEM was required to ensure Applicant's refinery wastewater discharges complied with BAT-BPJ emission limitations contained in an issued NPDES permit for non-conventional and toxic pollutants [for which no effluent limitations guidance was published] by 1989. However, Applicant's currently effective 2007 NPDES Permit shows IDEM failed to comply with required BAT-BPJ effluent-limitation-setting requirements for several pollutants known to be discharged by Applicant's facility and many other petroleum refineries.

The obligation applies regardless of the fact that IDEM has deferred applicability of the WQBELs in BP's 2007 permit based on construction of the diffuser.[7] The Act does not allow the timetable for applicability of these WQBELs to impact or diminish he obligation to set TBELs. The statutory authority for establishing WQBELs in NPDES permits provides:

"(c) Delay in application of other limitations.

[7] Under the terms of the existing 2007 NPDES Permit, Outfall #001 effluent limitations applied to the facility during the initial term of the permit, except in the event that the Applicant chose to construct and operate the diffuser apparatus in Lake Michigan. The Applicant did take that option under the terms of the 2007 permit and then became subject to Outfall #005 effluent limitations and monitoring requirements under the 2007 permit. The 2007 Outfall #001 & #005 tables of effluent limitations and monitoring requirements are provided in Exhibit 1. The 2007 Outfall #001 table contained monitoring requirements applicable to pollutant effluents of the non-ELG pollutants benzo(a)pyrene, chloride, total copper, total dissolved solids, fluoride, total lead, total mercury, total selenium, total strontium, sulfate and vanadium. The 2007 Outfall #001 table also contained "final" water WQBELs for the same pollutants which would be necessary for the Applicant to meet with its older Outfall #001 effluent limits (at the end of the compliance period) in order to keep from violating such Indiana water quality standards. However, because of the planned construction of the diffuser, the 2007 permit gave Applicant the opportunity to proceed with the end-of-discharge-pipe diffuser and alternate mixing zone approval under significantly fewer and less stringent limitations provided in the 2007 Permit Outfall #005 table, with removal of all of the subject final WQBELs previously provided as final effluent limitations in the Outfall #001 effluent limitation table.

> The establishment of effluent limitations under this section shall not operate to delay the application of any effluent limitation established under section 1311 of this title."

33 U.S.C. §1312(c). IDEM's delay in setting WQBELs, and ultimate determination not to do so, therefore may not "...operate to delay the application of any effluent limitation established under section 1311." IDEM's determinations concerning WQBELs do not alter the fact that the Department has to date imposed no TBELs for the subject pollutants.[8]

By implementing the diffuser, the Applicant was effectively allowed to free itself of *all* limits – not only WQBELs, but also any TBELs, since IDEM has expressed no intention (in 2007 or now) to establish them. Specifically, removal of the WQBELs and the effluent monitoring requirements for benzo(a)pyrene, chloride, total copper, total dissolved solids, fluoride, total lead, total selenium, total strontium and sulfate meant no effluent limitations at all – neither WQBELs or TBELs – as well as no monitoring requirements were in place for these pollutants.

Commenters note, in addition, that the diffuser cannot be considered BAT providing the basis for a TBEL determination. EPA rules provide that "(e) Technology-based treatment requirements are applied prior to or at the point of discharge." 40 C.F.R. 125.3(e).

C. TBEL Requirements Must Be Established Notwithstanding the Refinery ELG

The Refinery Effluent Limitation Guideline issued in 1979 for petroleum refineries ("Refinery ELG"), while it purported to regulate certain metals through indicator pollutants, made very clear that permitting agencies retain the authority and the duty to regulate unlisted pollutants. It stated in the preamble to the draft ELG (Exhibit 2),

> [T]he fact that these regulations do not control a particular pollutant does not preclude the permit issuer £rom limiting such pollutant on a case-by-case basis, when necessary to carry out the purposes of the Act. In addition, to the extent that state water quality standards or other provisions of state or Federal law reql1ire limitation of pollutants not covered by the regulations or require more stringent limitation on covered pollutants, such limitations *must* be applied by the permit issuing authority.

44 Fed. Reg 74525, 74536 (December 21, 1979) (emphasis in original). The preamble further made clear,

> It should be noted that the limitations in this regulation has been developed to cover the general case for this industry. In specific cases, it may be necessary for the NPDES permitting authority to establish permit limits on toxic pollutants which are not subject to limitations in this regulation.

[8] As discussed *infra*, Commenters consider the delay and ultimate inapplicability of the WQBEL limits to be inappropriate.

Id. Clearly, such regulation is required here, where the Refinery has specifically been shown to be discharging the pollutants at issue notwithstanding the controls on the purported indicators. In any event, the ELG preamble was silent as to the ability of controls on pollutants covered in the ELG to collaterally control several of the pollutants listed above. Although it asserts that U.S. EPA "believes that the technology upon which BAT effluent limitations for phenol . . . and chromium are based will effectively control the organic and metallic toxic pollutants listed in Appendix D," Appendix D does not include chloride, fluoride, strontium, or sulfate.

D. IDEM Failed to Set BAT-BPJ Effluent Limitations for Non-Effluent-Limitation-Guidance-Listed Toxic and Nonconventional Pollutants as Required

The Public Notice, Draft Permit and Fact Sheet contain no TBELs based on BAT-BPJ for non-ELG-listed pollutants of concern. Specifically, Outfall #005 of the Draft Permit contains no BAT-BPJ effluent limitations for selenium, sulfate, total dissolved solids, chlorides, arsenic, lead, manganese, strontium, copper and arsenic.[9]

Additionally, the Draft Permit contains no BAT-BPJ effluent limitation for nitrates. As discussed *supra,* while Applicant implausibly claims to discharge no nitrates, it is evident that Applicant likely discharges over 300,000 lbs. of nitrates per year.

The Draft Permit also contains no BAT-BPJ effluent limitation for total residual chlorine on Outfall #005. Applicant claims it as "believed absent" in the August 2012 permit application. However, Applicant submitted a pre-expansion water flow diagram showing 7.56 MGD of inlet flow which has previously been chlorinated before introduction to the refinery supply main. Under such circumstances the Applicant should be at least required to monitor total residual chlorine on a regular basis unless there is a valid process-related reason for considering that all such reactive chlorine reacts with wastewater hydrocarbons to form other toxicant species within the wastewater system.[10]

Finally, the effluent limitation table of Outfall #005 contains no thermal limitations or thermal monitoring requirements

III. Mercury

Commenters appreciate all of the effort that BP has made, in collaboration with Argonne National Laboratory and the Purdue-Calumet Water Institute ("Argonne"). We are pleased to see that the evaluated technologies succeeded in removing mercury down to the applicable water quality standard of 1.3 µg/L at both the bench-scale and pilot-scale levels.

At the same time, we are concerned that the renewed NPDES permit issued to BP fully reflect the results achieved by Argonne, and require that they be implemented as soon as possible. Specifically, the re-opener provision must clarify the parameters for determining when the control technology is sufficiently developed so as to require that it be implemented to meet a

[9] Mercury is addressed separately *infra.*

[10] IDEM should require Applicant to carry out analytical work on Outfall #005 total addressing Total Organic Halides (TOX) / Adsorbable Organic Halides (AOX)

TBEL. Compliance with this requirement is particularly urgent give that the streamlined mercury variance ("SMV") granted to BP, pursuant to applicable regulations, allows a mercury discharge an order of magnitude higher than the WQBEL limit. The permit must make clear that BP cannot be allowed to indefinitely study the problem if technology is available to reduce its mercury discharge. Additionally, the language describing the next phase of pilot testing should incorporate the specific recommendations from the Argonne research.

A. The Argonne Research Identified Mercury Control Technology on the Cusp of Availability, and Made Specific Recommendations for Further Study

The Argonne researchers looked predominantly at two potential technologies for mercury removal: ultrafiltration ("UF") and reactive filtration ("RF"). Both technologies successfully removed mercury down to 1.3 µg/L. However, UF removed it more consistently than the RF, and there were only minimal technical issues identified with respect to UF that require further exploration.

Regarding the UF technology, the researchers determined,

> [T]he UF membrane pilot unit consistently provided permeate that was less than 0.5 ppt Hg, which met and exceeded the treatment target of 1.3 ppt of Hg. This permeate quality was consistently produced at all tested operating conditions and was independent of the feed water characteristics and feed Hg concentration. This confirms the bench-scale Module 3 findings that there is no fundamental physical or chemical barrier in achieving < 1.3ppt Hg in the tested refinery wastewater at the pilot-scale at least under these testing conditions of little dissolved mercury in the pre-ETL (<0.5—1.05 ppt).

Emerging Technologies and Approaches to Minimize Discharges into Lake Michigan, Phase 2, Module 4 Report ("Pilot Test Report") at iv (Joint Executive Summary), attached as Exhibit 3. Argonne provided a full-scale cost estimate that varied between $39 and $174 million for a 40 MGD design capacity process (varying with criteria used in cost calculations).[11] *Id.*

The RF technology (called Blue PRO), by contrast, was found to meet the 1.3 µg/L goal 92.7% of the time during the pilot test; and after 46 days of operation experienced "mercury breakthrough" in the effluent which reduced its quality. The researchers were able to restore effluent quality after the breakthrough by adding a chemical, Nalmet 1689, to each filter's influent. The researchers noted that the brevity of test conditions limits their ability to draw conclusions regarding this fix. They also noted that mercury accumulation was seen in the filter sand during Nalmet addition, suggesting a potential long-term efficacy problem. Pilot Test Report at iv-v. The Pilot Test Report also noted that adding the Nalmet before the sand filters was an additional potential option that had not been explored in the pilot study. *Id.* at v. The cost estimate for the RF technology (including Nalmet added to the influent) ranged from approximately $21 million to $38 million. *Id.*

[11] The Outfall #005 discharge is 15.7 mgd, *see* Fact Sheet at 11

Based on these results, the Pilot Test Report specified the additional research that was necessary concerning UF and RF. The only additional research identified as necessary for UF, aside from a longer-term pilot study to confirm the initial pilot results, was additional testing "to determine options for the full scale reject stream which collects and concentrates the mercury removed from the effluent." *Id.* at iv. However, with respect to RF, the researchers specifically recommended, in addition to the reject stream evaluation, additional testing of Nalmet addition. Argonne National Laboratory and Purdue-Calumet Water Institute disagreed as to the order in which this testing should proceed, with Argonne researcher recommending long-term testing of adding Nalmet prior to the sand filters before any further testing of the RF (Blue PRO) technology, but Purdue recommending testing the RF process together with Nalmet addition. *Id.* at vi. The researchers also noted more generally the representative wastewater samples were difficult to obtain through grab sampling, possibly due to the variability of wastewater composition, and suggested using supplemental composite sampling. *Id.*

On August 16, 2012, pursuant to the PMPP associated with its SMV, BP submitted to IDEM a report summarizing the pilot study and its recommendations. *See* Letter dated August 16, 2012 to Paul Higginbotham, IDEM, from Linda J. Wilson, BP (Exhibit 4) ("August 16 Letter"). BP's summary was consistent with the description provided above. In terms of its next steps, BP agreed to perform the longer-term UF pilot study recommended by Argonne, including evaluation of options for the reject stream, as well as addition of the composite samples. BP stated that the UF testing would commence August 1, 2013 and conclude March 1, 2015. With respect to RF, however, BP's plans were framed less clearly. It appears from the August 16 Letter that the company is generally willing to conduct additional RF tests, but the Letter does not specify whether it will adopt Argonne's recommendation to test the Nalmet addition before the filters in advance of further testing of the Blue PRO technology, or Purdue's recommendation to test the two technologies in tandem. BP also notes that it will test the efficacy of the Brine Treatment Unit in mercury removal.

B. The Draft Permit Fails to Adequately Incorporate the Argonne Research Findings

The Draft Permit fails to adequately incorporate these detailed findings and recommendations from the Pilot Test Report. The Draft carries over more or less unchanged the provisions concerning mercury removal testing that were included in the revised NPDES permit incorporating the SMV, even though that revised permit (issued February 2012) predated the publication of the pilot test results (March 2012) and BP's subsequent report concerning them (August 2012). As a result, the Draft Permit does not set forth a coherent plan for ensuring both that further pilot testing follows a well-defined plan consistent with the Argonne research, and that the results of the research be used within a reasonable timeframe to establish a TBEL for mercury regardless of whether the WQBEL of 1.3 µg/L can be met. Commenters are very concerned that the Draft Permit in its current form would allow BP to study the issue of mercury control indefinitely, without ever committing to implement available technology.

1. Incorporation of Argonne Findings into the PMPP

The Draft Permit adds the following requirement to the PMPP:

1. a. BP will begin operation of such pilot demonstration unit of similar size as the Purdue/Argonne pilot within eighteen (18) months of the NPDES permit modification incorporating the SMV (August 17, 2013).
   b. Complete the pilot demonstration and submit a final report to IDEM within thirty-six (36) months of the NPDES permit modification incorporating the SMV (February 17, 2015). The pilot demonstration evaluation will include at least the following: performance under varying weather and process conditions, evaluation of options for waste streams, and reliability, operability, and feasibility. The report to IDEM shall summarize the results of the pilot demonstration, including reliability and feasibility of the piloted mercury removal technology, and recommendations for the next phase of review.

(The Draft Permit also adds a requirement, which Commenters support, that BP test mercury removal at the Brine Treatment Unit.[12]) The above language tracks essentially word for word the comparable requirement in BP's pre-existing PMPP, without incorporating any of the specific recommendations by Argonne concerning future pilot testing. Commenters therefore recommend the following language for Part IV.D.1. to capture the Argonne recommendations, as acknowledged by BP in the August 16 Letter (added language underlined):

1. a. BP will begin operation of such pilot demonstration unit of similar size as the Purdue/Argonne pilot within eighteen (18) months of the NPDES permit modification incorporating the SMV (August 17, 2013).
   b. Complete the pilot demonstration and submit a final report to IDEM within thirty-six (36) months of the NPDES permit modification incorporating the SMV (February 17, 2015). The report to IDEM shall summarize the results of the pilot demonstration, including reliability and feasibility of the piloted mercury removal technology, and recommendations for the next phase of review. <u>The pilot demonstration evaluation shall follow the recommendations of the pilot testing report issued in March 2012 by Argonne National Laboratory and Purdue-Calumet Water Institute (Argonne) except as described below, and shall include at minimum the following:</u>

   (i) <u>An evaluation of ultrafiltration technology (using GE ZeeWeed® Technology, 0.04 μm pore size and made up of PVDF) for</u>

[12] As discussed in Section VII, Commenters advocate establishing internal outfall points. Internal outfall monitoring would be particularly appropriate at the brine treatment unit, as the brine unit treatment process will also reduce other metal toxicants which should be measured at that location.

particulate mercury removal, lasting at least 6 months, and using the protocols and methods employed by Argonne.

(ii) An evaluation of the Blue PRO® reactive filtration process for both particulate and dissolved mercury removal, lasting at least 6 months.

(iii) An evaluation of the use of Nalmet® in conjunction with Blue PRO, including but not limited to addition of Nalmet® before BP's sand filters. Such testing shall be conducted either prior to further evaluation of Blue PRO or in conjunction with such evaluation; and BP shall explain in detail in its final report to IDEM the basis for its determination whether to conduct the Nalmet® testing before or in conjunction with further Blue PRO evaluation.

(iv) An evaluation of options for handling of mercury-containing full scale reject and backwash streams.

(v) Use of grab samples supplemented by composite sampling for rapid preliminary assessment of pilot performance.

(vi) Evaluation of performance under varying weather and process conditions, evaluation of options for waste streams, and reliability, operability, and feasibility.

Setting forth this level of specificity will ensure that BP proceeds in its research down a path that is likely to lead to a determination in the reasonably near term concerning permanent installation of mercury control technology. The language above does not create new or restrictive requirements, but merely reiterates the Argonne recommendations acknowledged by BP. To the extent BP may have reason not to follow the Argonne recommendations, it should be required to explain to IDEM and the public their reasoning and basis for an alternative approach.

That said, Commenters remain open to discussing the recommended wording above with IDEM and BP to the extent there are any specific issues raised concerning it. In particular, there are several mercury removal technologies evaluated in the USEPA Draft Report (*see infra* next subsection) that were not considered by Argonne, that USEPA considers to be fully available. To the extent any of those technologies could potentially be deployed at the Refinery to treat its particular effluent, those technologies should be evaluated as well. (Commenters understanding is that the Argonne researchers focused on the UF and RF technologies as particularly appropriate to BP's waste stream.)

2. Incorporation of Argonne Findings into the Re-opener Provision

The discharge limit in the current permit and Draft Permit is extraordinarily high. While commenters recognize that it is based up the SMV criteria set forth in applicable regulations, the fact remains that this limit – 23.1 µg/L – is close to twenty times higher than the applicable WQBEL. What is more, this limit is an annual average, with no daily maximum limit.

This situation is untenable past the short term as both an environmental and a legal matter. Regardless of the legality of granting the SMV initially (Commenters' concerns with the Indiana SMV regulations are beyond the scope of these comments), the Clean Water Act is clear

– and IDEM has acknowledged – that, regardless of applicable WQBEL requirements and any variance that may be granted from them, the discharger has a separate, independent obligation to impose a TBEL based on a BPJ determination of BAT. *See supra* Section II. In this regard, Commenters note that the 1979 Refinery ELG is silent concerning control of mercury discharges, leaving no indication that technology-based mercury controls – which are only emerging three decades later in the Argonne research – were ever considered. *See* Exhibit 2. Additionally, the Refinery ELG, which was last amended in 1985, did not consider and could not have considered today's prevalence of tar sand crude feedstocks with considerably higher levels of toxic metal constituents than conventionally produced crude. Refineries processing conventional crude were the overwhelming subject of the original Refinery ELG.

It is therefore imperative that mercury control technology be required as a TBEL as soon as it is available. It is not relevant to BAT-BPJ analysis whether that technology is capable of consistently achieving the WQBEL limit, since the WQBEL requirement is wholly separate from the TBEL requirement. Thus, to the extent any technology is determined capable of reducing BP's mercury discharge – whether to the WQBEL level or above it – BP must be required to implement that technology if it meets the criteria set forth in 40 C.F.R. § 125.3(d)(3) for a determination of best available technology.

It is clear from the Argonne research that at least one form of mercury control, UF, is capable substantially reducing the effluent in BP's mercury, and is on the cusp of being ready to deploy at the Refinery. As discussed above, the UF technology consistently achieved a level of mercury in the refinery's discharge that exceeded the quality necessary to meet the WQBEL, and Argonne found "no fundamental physical or chemical barrier" to meeting that standard. Pilot Test Report at iv. The only significant research required to be done at this point to confirm the suitability of this technology is a 6 month pilot test, and an evaluation of options for addressing the reject stream. The RF technology, by contrast, removed mercury less effectively (achieving the WQBEL level only 92.7% of the time), and its efficacy deteriorated over time so as to require the addition of NALMET. The NALMET addition requires further study, and the Argonne National Laboratory researchers have recommended an extended two-phase time frame for such study (study of NALMET addition before the sand filters; and if that testing is successful the subsequent testing of Blue PRO together with NALMET). The RF technology thus appears farther from becoming available than the UF technology.

The RF technology also appears to be potentially less expensive than the UF technology. There is no legal basis, however, for allowing indefinite delay to allow a new, less costly technology to emerge rather implementing a technology that is immediately available. Pollution removal technology prices frequently decline over time, but the Clean Water Act does not define "best available technology" as what may be "best" in the future, but rather as what is "available" now to make progress toward the Act's goals. *See* 33 U.S.C. § 1311(b)(2)(A)(i) (point source pollutant discharge "shall require application of the best available technology economically achievable for such category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants"). While cost may be considered as one of several factors in the BPJ determination of BAT, *see* 40 C.F.R. § 125.3(d)(3), the test is a stringent one. BAT has been held to represent "a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l*

Crushed Stone Ass'n, 449 U.S. 64, 74 (1980). Thus, the relevant question in determining BAT is not whether the RF technology may ultimately prove less expensive than the UF technology, but whether the UF technology is available, most effective, and capable of being deployed using the "maximum resources economically possible."

In this regard, we note that it is particularly imperative here that new economic analysis of mercury control technology in the context of a BAT determination be conducted as soon as possible given that the economic analysis upon which the Indiana SMV program is predicated is woefully outdated. In adopting its SMV procedures, Indiana purported to comply with the requirement in 40 C.F.R. § 132 Appendix F it consider the cost criterion for a variance ("substantial and widespread economic and social impact") by making a one-time determination that, given the cost of mercury control technology, that criterion would apply. The State concluded that costs of compliance with the mercury water quality standard would be prohibitive, and relies regulated community comments in support of that conclusion. Those comments rely on a 2002 report by the Association of Metropolitan Sewage Agencies, and a 1997 report by the Ohio Environmental Protection Agency ("OEPA Report") (attached as Ex. 5). The OEPA Report, in turn, relied upon analysis of then-current technology including biologically activated sludge, chemical precipitation, ion exchange, and reverse osmosis in concluding that the cost of mercury removal would be prohibitive. Clearly, as the Argonne research has demonstrated, an entirely new set of technologies now exists with very different economics. The OEPA Report calculation also did not evaluate the economic feasibility of mercury removal in a particularly meaningful or readily applicable manner, setting forth only a cost per pound of mercury removed rather than, as did Argonne, a capital cost for a system sized for the Refinery.

Additionally, USEPA is currently conducting its own analysis of mercury removal technologies to update the OEPA Report, and issued a draft report in April, 2012 (attached as Ex. 6) ("USEPA Draft Report"). That report evaluates in detail the technical and cost-effectiveness of the technologies that have emerged since 1997 to control mercury (including those evaluated by Argonne), and provides a detailed cost assessment of each. With respect to UF technology, the USEPA Draft Report concludes that for a discharge of less than 20 mgd (the discharge from Outfall 005, for which mercury limits are imposed, is 15.7 mgd, *see* Fact Sheet at 11), UF costs are "relatively low." *Id.* at v (Executive Summary).

For all of these reasons, Commenters are pleased that a reopener provision was included in the Draft Permit, requiring that if a mercury technology is determined to be "available and economically viable," the Permit must be re-opened to require that such technology be implemented. Draft Permit at 28. However, this reopener provision provides no specifics as to how and when BP is to make such a determination of availability and viability, once again raising the specter of a research process that will continue indefinitely without the need for action as soon as possible. The reopener should be revised to clarify what is meant by "available and economically viable," and how such determination will be guided by the pilot tests that BP is required to conduct.

Accordingly, Commenters recommend the following language for the reopener concerning mercury (changes underlined):

If a treatment technology for the removal of mercury from wastewater is identified and is determined by IDEM to meet the criteria in 40 C.F.R. § 125.3(d)(3) for a determination of best available technology, and/or be capable of meeting the water quality based effluent limit set forth in Part I.A.1, then BP must install and fully operate that treatment technology as soon as possible. In making such determination, IDEM shall specifically determine whether the Final Report submitted by BP pursuant to Part IV.D.1.b. reflects that any technology evaluated was effective in reducing the mercury in BP's waste stream beyond the levels of removal currently being achieved by the PMPP, in which case IDEM shall require that BP implement such technology unless it does not meet the 40 C.F.R. § 125.3(d)(3) criteria for a determination of best available technology.

Within 6 months after IDEM's determination or the final disposition of any appeal of such determination, whichever is later, BP shall submit a schedule, subject to IDEM approval, for the installation and operation of the identified treatment technology that is as expeditious as possible. Any such determination shall be considered final agency action, which BP may appeal. Upon completion of 12 months of operation, IDEM should modify the permit in accordance with 327 IAC 5-3.5-8 to revise the effective effluent limits for mercury at Outfall 005.

Commenters are aware that IDEM and BP engaged in discussion with USEPA Region 5 during the course of drafting the SMV NPDES modification concerning the reopener provision. However, those discussions pre-dated that March 2012 Pilot Test Report, which produced extremely positive results with respect to UF technology, providing reason to believe that it may be considered available following the next round of pilot tests. It is therefore important that the reopener provision be revised to reflect that new reality.

Finally, Commenters note the possibility that has been raised that a TBEL developed in accordance with the re-opener provision could temporarily co-exist in the permit with the existing WQBEL developed in accordance with the SMV process, with the TBEL being the more stringent of the two. As discussed above, the TBEL and WQBEL requirements exist independently from one another. There is no legal or logical reason why the existence of a WQBEL that has been relaxed through a variance should obviate the need for a TBEL. The requirement for a WQBEL is triggered when a TBEL proves insufficient to meet water quality standards, 33 U.S.C. § 1312, and that continuing requirement is reflected in the final WQBEL of 1.3 µg/L that remains in the permit. *See* Permit Section I.A.1. No reasonable reading of the statute could allow that the TBEL requirement be rendered a nullity simply because the more stringent WQBEL has been temporarily raised above the level that BAT could effectively meet. It is clear that the TBEL would be the controlling standard until and unless the WQBEL of 1.3 µg/L can be met, at which point the SMV will no longer be operative. In any event, it appears likely based on the Argonne research that the technology being developed through pilot testing is capable of meeting the WQBEL, so the question may well turn out to be moot.

IV. Cooling Water Intake

Applicant's two cooling water intake structures ("CWIS") in Lake Michigan have long been subject to non-discretionary requirements of the Clean Water Act binding on IDEM to evaluate whether the intake structures and cooling water practices utilized at the Refinery comply with the following statutory criteria set forth in Act § 316(b):

> "(b) Cooling water intake structures
>
> Any standard established pursuant to section 1311 of this title or section 1316 of this title and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structure reflect the Best Technology Available for minimizing adverse environmental impact."[13]

Applicant's CWIS are existing structures which are not subject to the Phase II rules at 40 C.F.R. §125.90 implementing § 316(b), but they are nevertheless subject to the following requirement of a BPJ determination:

> "(b) Existing facilities that are not subject to requirements under this or another subpart of this part must meet requirements under section 316(b) of the CWA determined by the Director on a case-by-case, best professional judgment (BPJ) basis."[14]

IDEM is thus required to make a determination addressing Applicant's CWIS, and as whether the design, operation and monitoring of such equipment as shown in Applicant's submittal constitutes Best Technology Available ("BTA") for "minimizing adverse environmental impact" under 33 U.S.C. §1326(b). The design, operation, performance and monitoring of the CWIS are all indisputably considered as elements of the required professional engineering determination reflecting scientifically defensible BTA-BPJ findings and decisions addressing whether Applicant's present CWIS performance accomplishes a BTA level of "minimizing adverse environmental impact."

In considering its CWIS BTA decision, IDEM must also consider and address the fundamental purpose of the Clean Water Act "...to restore and maintain the chemical, physical and biological integrity of the Nation's waters."[15] The determination IDEM must make under 33 U.S.C. §1326(b) as to adverse environmental impact must necessarily address the remedial and restorative goals of the Act as to the biological integrity of Lake Michigan as the navigable waters in which Applicant operates their CWIS.

In this section, Commenters address both Applicant's submittal addressing the CWIS matter, and IDEM's findings and determinations on the BTA determination addressing Applicant's cooling water intake structures. As demonstrated below, Applicant has completely failed to demonstrate that its primitive intake system even approaches BTA for minimizing aquatic life impacts. These structures lack even inlet screens to reduce aquatic life mortality –

[13] 33 U.S.C. §1326(b)
[14] 40 C.F.R. §125.90(b)
[15] 33 U.S.C. §1251

which is 100% for organisms entrained within the CWIS. Such intake screens – as well as many other types of protective measures – are widely available and considered part of BTA. Yet IDEM's analysis failed entirely to consider such technology or the possibility that it might be BTA. Its purported BPJ determination did not even assess the aquatic life harm being caused by BP's current CWIS structure, such as an evaluation current fish mortality levels; and included no analysis as to whether improvements in that structure could mitigate harm.

A. Applicant's August 2012 Cooling Water Intake Structure Documentation is Insufficient to Support a BTA-BPJ Determination

1. Applicant's CWIS Documentation Contains No Demonstration that the of Compliance with §316(b) Requirements

In August 2012, Applicant submitted documentation to IDEM addressing the cooling CWIS being utilized at the Refinery site. See Exhibit 7 for Applicant's CWIS documentation submittal.

While the documentation acknowledged that IDEM was to conduct a Best Technology BTA determination determined by BPJ, no part of the Applicant-submitted documentation contains any specific claims and/or demonstrations by the Applicant that their CWIS equipment actually complies with CWA Section 316(b), or that the subject CWIS equipment as presently used at the refinery meets a BTA-commensurate level of protectiveness for "...minimizing adverse environmental impact..." and for restoring the biological integrity of Lake Michigan in which Applicant operates its CWIS. Commenters are not aware of any documents from the Applicant that clearly and unambiguously state Applicant's conclusion whether the present design and operational practices for its two Lake Michigan CWIS intakes (as shown in the August 2012 CWIS Documentation) comply with the objectives and provisions of 33 U.S.C. §1326(b) read together with the Act's purposes in restoring the biological integrity of Lake Michigan.

Applicant's brief CWIS documentation consists solely of physical and operational descriptions of the cooling water intakes structures, the flumes and tunnels to Lake Michigan, the pumping station physical features and the results of a diver inspection to determine intake facial inlet plane orthogonal velocities, along with supporting schematic diagrams showing Applicant's current CWIS installations. This documentation contains no quantitative or qualitative information addressing the present breadth and extent of biological damages and impairment to fish and aquatic organisms caused as a result of Applicant's CWIS operations in Lake Michigan. IDEM Office of Water Quality (OWQ) permitting staff have verified that Applicant has never submitted any information addressing the present or historical levels of Applicant-CWIS-caused biological damage to aquatic life from Lake Michigan and that IDEM has not requested such information from Applicant.[16]

[16] IDEM OWQ permitting staff confirmed this during an April 11, 2013 meeting/conference call with Commenters.

2. Applicant's CWIS Documentation Fails to Include Information Addressing the Manner in Which Applicant's Present CWIS Causes or Contributes to Aquatic Mortality Impingement and Entrainment Losses

While the Applicant provides a large amount of physical information about the CWIS in question, none of the information or analysis describes any of the modalities for fish and aquatic biological damage that is caused or created by the physical and operational elements of Applicant's CWIS intake processes and operations. In a proper determination and demonstration of compliance with 33 U.S.C. §1326(b), IDEM must properly consider the manner and modality of impingement and entrainment mortality losses caused by the present physical configuration of Applicant's CWIS equipment and operations because such biological damages are a part of the process of 'minimizing adverse environmental impacts in the form of fish and aquatic fauna mortalities.

Because an IDEM BTA-BPJ determination must be reviewed as to whether it is a properly articulated and scientifically defensible exercise in environmental engineering, such a determination must necessarily consider the degree and manner in which the physical elements and operational features of CWIS equipment cause or contribute to impingement and entrainment aquatic mortality. No part of Applicant's CWIS documentation provides the information needed for a proper engineering judgment and determination on Applicant's CWIS in meeting the requirements of 33 U.S.C. §1326(b) and the required BPJ review.

3. Applicant's Failure to Operate Continuous Volumetric Flow Monitoring Devices Sufficient is Not Compatible with a Proper BTA-BPJ Determination

Applicant's CWIS documentation indicates that no direct-stream CWIS volumetric flow monitoring is done at the facility.[17] Its methodology of monitoring the flow in the intakes is to do so by using two general groups of calculations rather than direct continuous physical parameter monitoring in intakes and tunnels. The first group of calculations addresses discharge effluent flow monitoring together with calculated water losses within the refinery and back calculates the total intake flow rate from both intakes combined. The CWIS documentation does not disclose or indicate such calculations and how they were carried out.

The second group of calculations addresses flow proportioning ratios that apportion the total combined intake flow rate from the first group of calculations between the 1911 and 1942 intake tunnels. The results of the second group of calculations lead to Applicant's depiction of a generally applicable operational assumption that the flow rate apportions 67 percent to the 1942 flume and 33 percent to the 1911 flume under all conditions. No justification or calculations support Applicant's claim that the stated flow proportioning stays constant between the two tunnels.

Applicant's intake flume flow monitoring approach is not acceptable because a non-demonstrated, unapproved and undisclosed total volumetric flow calculation methodology and tunnel volumetric flow rate proportioning assumption does not demonstrate a 'best'

[17] See Attachment #1, p. 3, last paragraph.

technology approach to intake process monitoring to address "minimizing adverse environmental impacts." Nothing about Applicant's calculated tunnel volumetric rate determination and monitoring methods demonstrates that Applicant's procedures and calculation methods are the "best" technology available and a basis for rejecting demands on the Applicant that continuous volumetric parameter monitoring equipment be installed in both intake tunnels to Lake Michigan. Nothing in the CWIS documentation can be considered as an Applicant showing that such individual flume flow monitoring is either technically or economically infeasible.

As part of permit-required monitoring measures necessary for Applicant's compliance, IDEM should require the Applicant to install continuous volumetric flow rate monitoring equipment in each CWIS intake flume and to maintain such a requirement as a permit-specified effluent limitation for CWIS operational monitoring. In addition, IDEM should require a showing and demonstration of how flume volumetric monitoring is related to keeping the maximum CWIS intake facial plane orthogonal flow velocity below any required, recommended and/or pre-determined velocity thresholds for fish and aquatic biological protection.

4. Applicant's Supporting Calculations and Methodologies in the CWIS Documentation are Undisclosed, Unsupported, and/or Inadequate

As noted in the prior sections, Applicant carried out two groups of calculations in support of its CWIS Documentation, but Applicant did not submit or disclose any such calculations or methodologies it used in making its determination. The entire theory of IDEM's determination of Applicant's CWIS compliance with BTA for the present facility depends on the process operational guarantee that acceptable intake facial plane orthogonal velocities will be maintained through Applicant's discharge flow-based back-calculation methodology and individual tunnel flow apportionment of the total flow based on a fixed calculated assumption.

Commenters thus object to IDEM's finding that Applicant's CWIS documentation is part of a complete and approvable application when none of the underlying calculations and methodologies were submitted for review and BTA determination by the Applicant. Commenters further object to the speculative nature of Applicant calculation approaches and Applicant's failure to show, consider or explain how Applicant's overall approach to volumetric intake rate determination constitutes an accurate assessment method.

a. Applicant Failed to Submit CWIS Documentation Drawings and a Detailed Showing of the Physical Configuration of its Intake Chlorination System on the 1942 Flume CWIS and Information Necessary to Determine that Heated Chlorinated Solutions are Not Discharged to Lake Michigan

Applicant's CWIS Documentation the 1942 intake configuration indicates as follows:

> In the early 1980s, a frazzle ice and biological fouling prevention system was put in place. Hot water and chlorine solution are pumped out to manifolds running the circumference of the intake in order to reduce ice and biological growth.[18]

[18] See Attachment #1, p. 3, second paragraph

However, the Applicant did not provide any drawings or other technical information showing the exact location and placement of the hot water/chlorine solution 'manifold' and its placement geometry with respect to the facial openings in the 1942 flume CWIS intake as shown on either Figure 3 or 5 of Applicant's submitted CWIS documentation (Exhibit 7). No information was provided on the volumetric rate of feed of the heated, chlorinated water delivered to chlorination manifold for release on the 1942 CWIS facial intake openings. In the absence of a specific drawing addressing the placement of the subject manifold and detailed information showing such information as the rate of heated, chlorinated water addition and the relationship between flow rates of chlorinated water and the relative rates of intake volume, there can be no assurance that the manifold will not cause a discharge of total residual chlorine to Lake Michigan as receiving waters.

In addressing the potential for the anti-fouling chlorinated solution discharge, Applicant must also simultaneously address and conform its claims that the design and operation of its intakes will not also entrain fish and aquatic life at the facial plane of the intake inlet openings.

In making any showing by Applicant that the design and placement of the chlorinated hot water solution injection manifold does not discharge to Lake Michigan in a manner that escapes the CWIS, Applicant should also be required to show and address what effect the chlorinated solution injection apparatus has on fish that are in or near the edges of the facial plane of the CWIS intake opening. Applicant must not be allowed to operate an anti-fouling system having the effect of impairing the ability of fish to escape entrainment flow at or near the CWIS facial plane intake opening.

IDEM's Fact Sheet indicates the Applicant plans to maintain a 0.25-0.5 mg/l total residual chlorine concentration within the refinery water supply system.[19] The upper bound concentration is 26 times the present Indiana CMC (Maximum) water quality standard of 19 µg/L for total residual chlorine.[20] Because the anti-fouling solutions used by the Applicant will be acutely toxic to fish and aquatic life it is essential that the Applicant be required to provide absolute clarity as to whether or not any portion of the flow of anti-fouling solutions at the 1942 CWIS will be discharged to Lake Michigan at the facial intake surfaces. The draft permit should not issue without providing such information for review and verification that Applicant's intake chlorination manifold is not operating as a de facto additional outfall for a total residual chlorine contaminated discharge stream discharged to Lake Michigan.

Applicant's documentation also did not mention any intake chlorination on the 1911 flume. IDEM's Fact Sheet mentions zebra mussel control on p. 42, but does not say that such activities are carried out on the 1911 intake. The intake chlorination status of the smaller intake should be clarified on the record during IDEM's subsequent consideration of Applicant's permit.

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[19] Commenters note that the IDEM Fact Sheet mention of these target internal water system and CWIS internal water concentration targets were not provided or disclosed in the Applicant's August 2012 BP Whiting Refinery CWIS Documentation.

[20] 327 IAC 2-1.5-8(b)(3), Table 8-1

b. Applicant's Single Day Diver Inspection and Measurement of Facial Plane Orthogonal Flow Velocities Does Not Constitute a Continuous, Direct & Real Time Volumetric Parameter Monitoring and Verification Method

Applicant's CWIS Documentation contains the results of a diver inspection and measurement of the facial plane orthogonal intake flow velocities during a single day of refinery operation when the combined total flume flow rate for the 1911 and the 1942 CWIS was indicated as 85 MGD.[21] As part of its single day demonstration and CWIS documentation, the Applicant also calculated (and did not measure) the flow proportioning between the two CWIS intake flumes. Applicant calculated the flow proportioning at 33% for the 1911 tunnel/intake and 67% for the 1942 tunnel/intake, but no such calculations and methodologies were provided by Applicant in the documentation.

The CWIS documentation contains the results of the diver intake inlet facial plane orthogonal intake velocity measurements, and shows these on page 4 and in figure 5. Applicant's submitted diver inspection and velocity measurements portray the two CWIS intakes with a specific level of performance that Applicant intrinsically claims as being acceptable when measured on November 13, 2009 while operating at a calculated combined total intake rate of 85 MGD. However, nothing about this submitted information and inspection assures that the intakes will operate at all times with maximum and/or average facial intake velocities less than those observed on November 13, 2009 at the respective two Lake Michigan intakes.

For example, the average combined flow reported for 2009-2001 is 92 MGD. Non-firewater pumping unit capacity is 117.8 MGD for No. 1 Water Station and 146.3 MGD for No. 2 Water Station. Nothing about the submitted diver inspection information ensures that Applicant will be able to maintain the same or similar CWIS facial plane intake velocities under all facility operating and plant production rate conditions. Applicant is *not* accepting a limit of 85 MGD per day for total CWIS intake daily volumes.

Specifically, nothing about Applicant's submittal ensures that the facility will have the same or similar CWIS intake facial plane velocities while the facility is operating at the maximum physical pumping process rates for both non-firewater and firewater pumps. Nothing in Applicant's submittal establishes a functional relationship between CWIS intake facial plane normal velocities and hourly volumetric intake process rates in both the 1911 and 1942 intake tunnels. Without direct tunnel volumetric flow measurement as parameter monitoring for CWIS operation for intake facial plane orthogonal velocity flow control and without a clear mathematical relationship between refinery water demand and such facial velocities, nothing about Applicant's CWIS documentation provides a basis for ensuring that CWIS operations do not have unacceptable facial plane orthogonal velocities under all water intake tunnel volumetric

[21] No direct measurement of refinery intake flow was taken to determine the 85 MGD flow rate, which was determined by Applicant with a non-disclosed calculation method based on discharge outfall flow monitoring and back-calculation which allegedly considered refinery evaporative losses and stormwater inputs. Nothing in Applicant's submittal indicates whether such a method of intake flow determination is executable on a real time and short term averaging time basis.

rates and typical rate variability.

c. Applicant's CWIS Documentation Fails to Identify and Quantify the Total Intake Facial Plane Area for the 1911 and 1942 CWIS

A key and important parameter for evaluating CWIS physical configurations is the total intake facial plane area for each of the 1911 and 1942 CWIS. Applicant should be required to specifically state the total inlet area for each of the two intake units.

d. Review of Applicant's November 13, 2009 CWIS Intake Facial Plane Orthogonal Velocities and Assumed Volumetric Flow Rates and Flow Proportioning Shows Inconsistency and Implausibility on Applicant's Calculated Combined Intake Daily Flow Volumes and Flow Proportioning Percentages Ratios

Applicant calculated an 85 MGD combined total intake volumetric flow rate for the day of the diver inspection and intake facial plane velocity measurements on November 13, 2009. Applicant's unmeasured but calculated[22] flow proportioning result is 33% of combined total flow rate for the 1911 intake and 67% of combined total flow rate for the 1942 intake. At this flow rate proportioning, the 1911 inlet volume would be 28 MGD and the 1942 inlet volume would be 57 MGD for the November 13, 2009 day of operations when diver measured intake facial plane orthogonal velocities were determined on both of Applicant's CWIS inlets.

To check this calculation, Commenters used Applicant's measured CWIS facial velocity data to estimate by calculation the volumetric flow rate at each intake implicit to the facial velocity detected in the diver inspection on November 13, 2009. See Exhibit 8 for Commenters determination of the total CWIS facial inlet area for both intakes and for Commenters' volumetric calculations. Commenters determined the 1911 intake facial plane opening area as 55 square feet. At the 1911 intake inlet facial plane normal velocity of 0.56 ft/sec, Commenters calculate an estimate of the 1911 intake volumetric rate on November 13, 2009 to be 19.9 MGD. Commenters additionally determined the total 1942 intake facial plane inlet opening area as 480 square feet. At the November 13, 2009 average 1942 intake inlet facial plane normal velocity of 0.26 ft/sec, Commenters calculate an estimate of the 1942 intake volumetric rate on November 13, 2009 to be 80.7 MGD. These conclusions are summarized in the table below:

	1911 Intake	1942 intake
Applicant's determination of volumetric rates on 11/13/2009 using 85 MGD combined total and Applicant's calculated 33-67 proportioning ratio	28 MGD	57 MGD

[22] Applicant did not disclose the flow proportioning calculation methodology used to obtain the 33/67 split approach.

Commenters' calculated estimate of 11/13/2009 intake volumetric rates based on diver-measured CWIS intake inlet velocity determination and Commenters' determination of total inlet facial plane area	19.9 MGD	80.7 MGD

As shown in the table, Commenters' calculated estimates demonstrate volumetric rates that are considerably less than Applicant's volumetric rate determination for the 1911 intake and considerably greater than Applicant's volumetric rate determination for the 1942 intake. There is thus good reason to question Applicant's calculation methods and the potential of such methods to propagate erroneous determination of intake inlet volumetric rates.

e. Applicant's CWIS Documentation Contains No Information, Review or Narrative Addressing Efforts at Intake Flow Reduction

While the Applicant's NPDES application mentions two new cooling towers as part of the facility expansion and modifications, nothing in the CWIS documentation addresses Applicant's obligation to consider alternatives to reduce or mitigate intake fish damages by increasing the use of closed cycle cooling towers at the Whiting Refinery. There is no demonstration or adequate showing provided of existing cooling tower use and potential future cooling tower use for a portion or all of the facility's cooling water needs.

The present level of mitigation through inlet flow reduction through existing cooling towers should have been included in a demonstration of compliance with § 316(b), along with information and narratives addressing why further cooling tower use should or should not be implemented as part of a BTA-BPJ determination carried out under § 316(b).

f. Applicant's CWIS Documentation Contains Misleading and Erroneous References to Screens Associated with its CWIS Intakes and Water Stations and to Nominal Volumetric Flow Depictions

Applicant states in its introduction to the CWIS documentation as follows:

> "Therefore, IDEM is requesting that the BP Whiting Business Unit provide a description of the CWIS that **includes the average velocity of the inflow through the intake screens**, as well as engineering drawings of the CWIS. The following sections present the CWIS configuration, water station description, and **average through screen velocity.**"[23] (emphasis added)

Applicant then states:

> "Although grating exists on the intake system to exclude large debris, **no intake screen system exists.**"[24] (emphasis added)

[23] August 2012 BP Whiting Refinery Cooling Water Intake Structure Documentation, p. 1, 1st paragraph.
[24] ibid, p. 1, 2nd paragraph

Next, Applicant states as to the 1911 intake:

> "....**the central pipe is now an open pipe receiving vertical water flow. This intake provides a small proportion of the total design intake flow** and is located approximately 1,330 feet offshore."[25] (emphasis added)

However, the express conclusion of this statement conflicts with Applicant's own analysis on page 4 of the relative proportional flows between the 1942 and 1911 intakes. While an average 1911 intake volumetric flow of 30.3 MGD [and 33% of the total combined intake tunnel flow] can be validly described as "smaller" than the stated 1942 intake volumetric flow, as a matter of comparison, to Applicant's statement that a intake flow of 30.3 MGD means that "....this intake provides a **small proportion** of the total design intake flow"[26] is an plainly not accurate. It is merely an unsuccessful effort to minimize the impact of Applicant's continued use of a primitive intake system having no little or no mitigation of fish and aquatic losses.

Additionally, Commenters note that Applicant states that "**Average through screen velocity** was measured on November 13, 2009 during a routine intake inspection." However, Applicant has previously explained that the facility's CWIS *do not have inlet screens at all.* at all. Applicant should therefore not have referred to the diver's intake inlet facial plane orthogonal velocity measurements as determinations of "average through-screen velocity." Use of such terms suggests that Applicant is somehow mitigating biologically damaging conduct from intake operation with either inlet screens which do not exist, or screens within the Water Stations which cannot protect fish that have become entrained and trapped in Applicant's primitive 100% fish mortality CWIS intake systems.

Finally, Commenters note IDEM's reliance on Applicant's submitted monthly average intake volumetric data in the publication of the Fact Sheet when the agency never obtained or reviewed Applicant's calculation methodology in detail. IDEM's uncritical and non-evaluative approach to accepted Applicant's calculation model is not appropriate.

B. IDEM's Review of Applicant's CWIS Submittal Does Not Reflect a BAT-BPJ Determination that is Sufficient Under § 316(b)

IDEM purports to have made a determination based on BPJ that Applicant's existing cooling water intake structures represent BTA to minimize adverse environmental impact in accordance with § 316(b) as shown on p. 47-48 of the IDEM Fact Sheet. However, major portions of the IDEM's BTA determination findings and determinations are published and taken as direct verbatim adoption of the text and analysis of Applicant's CWIS documentation. Additionally, IDEM improperly treated the application as complete notwithstanding the severe deficiencies documented in the previous section.[27]

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[25] Ibid, p. 2,

[26] Emphasis added

[27] Commenters regard the IDEM determination as both an implicit and explicit finding by the agency that Applicant's submitted CWIS documentation was complete and that Applicant's NPDES permit application for renewal was also thus deemed as complete.

As discussed above, § 316(b) requires IDEM as part of the NPDES permit issuance process to use BPJ to set binding permit effluent limitations. A case by case analysis carried out in the present matter of Applicant's facility must necessarily examine relevant features of Applicant's CWIS intakes pertinent to making a professional judgment concerning the BTA decision.

The BPJ process of determining compliance with § 316(b) cannot act as a *de facto* variance process from the requirements of that section. In carrying out a BTA determination, IDEM must produce a result which would provide a similar level of protectiveness for fish and aquatic resources that would be provided in a national rulemaking on CWIS intakes. It is not sufficient for IDEM to defer or to allow the Applicant to defer required elements of minimization of aquatic biological damage until a time when a national binding rule is published. BPJ review necessarily involves scientific inquiry and assessment of what specific "adverse environmental impacts" in the form of fish and aquatic fauna mortalities are presently caused by the present design and operation of Applicant's present CWIS intake equipment in Lake Michigan.

A valid BPJ determination is not possible when no information exists and no inquiry is made to the present level of biological damage being caused by the facility's present CWIS intakes, as inquiry on "adverse environmental impacts" must necessarily focus on biological damage in the form of aquatic mortalities for fish and aquatic fauna in all life stages. Such an inquiry should provide a quantitative basis for decision-making in the form of a biological identification of the amount, the rate and the flow-relatedness of fish and aquatic fauna mortalities from operation of the two intake in Lake Michigan. A valid inquire further involves physical identification, analysis and narrative review showing each element of Applicant's present CWIS intake design and operation and a review of how and whether each of these physical and operational CWIS elements mitigates "adverse environmental impacts" in the form of biological damage caused by Applicant's CWIS intakes. A scientifically defensible BTA-BPJ review must also not merely review the impact of existing CWIS equipment, but must necessarily consider and evaluate potential use of alternative intake physical configurations and techniques having the potential to control, limit or eliminate impingement and entrainment losses, including intake flow reductions, fish return systems, alternate internal and inlet opening screen systems, use of adjacent fine mesh nets, and other intake mitigation and control techniques. As a matter of law and logic, consideration of such alternative technologies for mitigating adverse environmental impacts is part and parcel of determining whether the technology the Applicant is using is actually the "best technology available." That determination simply cannot be made if the limits its analysis to only those technologies presently in use by Applicant.

It should not have taken IDEM from the time of Applicant's first renewal application submittal in February 2012 until April of 2012 to arrive at the conclusion that the Applicant should have addressed fish return systems in their application renewal narrative and demonstration. IDEM should have informed the Applicant back in February 2012 that its application was incomplete because it did not incorporate a fish return system. If IDEM had taken such an action in February, 2012, then at the present time the Applicant would have been getting a final approval on a specific plan to comply at an earlier rather than a later time. IDEM's failure to diligently require the implementation of 33 U.S.C. §3126(b) requirements can

potentially lead to 3-5 years of additional delay before the Applicant is in final compliance with what IDEM deems to be appropriate fish protection and aquatic mortality mitigation measures.

The sections below describe in detail how IDEM failed to adhere to these requirements, and failed to conduct the analysis necessary for a scientifically defensible BTA-BPJ determination.

1. IDEM Failed to Adequately Assess Current Aquatic Life Impacts

Applicant's August 2012 Cooling Water Intake Document contained no information at all addressing impingement and entrainment mortalities of fish and aquatic fauna from the present design and operation of Applicant's two Lake Michigan CWIS intakes. IDEM Office of Water Quality ("OWQ") has also not collected information quantifying biological damages and aquatic mortalities from Applicant's two Lake Michigan CWIS intakes. Accordingly, the OWQ inappropriately determined that Applicant's NPDES renewal submittal was complete IDEM staff have confirmed that Applicant has never been asked to document and quantify its present level of biological damages in the context of the duty to "minimizing adverse environmental impacts" during the past history of IDEM regulation of the facility.

Given that no information at all exists in the record about fish and aquatic fauna mortalities in all life stages caused by the existing design and operation of Applicant's CWIS intakes, IDEM's BTA-BPJ finding and determination that Applicant's CWIS intakes "minimize adverse environmental impacts" is plainly insufficient. IDEM's determination must be set aside because its finding that Applicant is minimizing "adverse environmental impacts" is not supported by scientific evidence of present and existing biological damages from Applicant's intake equipment.

2. IDEM Failed to Properly Identify, Analyze and Describe its Existing CWIS Intake Equipment Affects, Mitigates and/or Minimizes Biological Damage

Nothing in Applicant's August 2012 CWIS Documentation addresses or demonstrates how the physical and operational features of Applicant's CWIS intake equipment either cause, contribute to, mitigate and/or minimize "adverse environmental impacts" in the form of fish and aquatic fauna mortality, which as described above is an essential part of BTA-BPJ analysis.For example, both the Applicant and IDEM give no reason at all why the reported "average through-screen velocity" as determined by diver inspection ought to be considered as parameter values demonstrating measures deemed or considered to reduce or minimize fish and aquatic life damage A scientifically defensible review would need to show how, why, whether and to what extent the Applicant-submitted single-day-diver-measured "through-screen" velocities as a demonstration of claimed protectiveness should be considered as a demonstration of "minimizing adverse environmental impacts" or otherwise as a mitigation measure to limit or reduce entrainment and/or impingement losses.

3. IDEM's Acceptance of a Demonstration of Measured "Through Screen Velocities" Based on an 85 MGD Flow Rate Cannot be Considered as a Demonstration that § 316(b) Requirements are Met

From an operational evaluation standpoint, both Applicant and IDEM portray the intake velocity performance that occurred on November 13, 2009 in the diver-measured inspection during a portion of that day as being characteristic of facility operations for decision-making purposes. However, the diver-measured facial velocities depicted in the IDEM Fact Sheet and in Applicant's CWIS August 2012 Documentation can only be considered as characteristic of intake operations at the claimed 85 MGD flow rate occurring on November 13, 2009 or at a lesser rate. Since monthly average calculated actual intake flow rates up to 114.8 MGD occurred as recently as September, 2011, a proper determination of CWIS intake protectiveness must necessarily consider the performance of the intake as to inlet facial velocity matters occurring at the *maximum* refinery water station pumping rates expected during normal present operations and during future refinery expansion operations. As discussed above, Commenters calculated an estimate of 1942 intake flow of over 80 MGD from this inlet during the diver-inspection facial velocity measurements, while Applicant predicted a 67% flow equal to 57 MGD at the 1942 intake during the inspection. Nothing in Applicant's August 2012 CWIS Documentation or in IDEM's Fact Sheet explains or addresses why a monthly average of daily actual intake values (as calculated and not directly measured) should be considered to be an appropriate quantitative intake physical operations indicator parameter sufficient to inform decision-making to assure compliance with intake facial plane orthogonal velocity performance that must be maintained on a very short term basis to maintain biological damage reduction and mitigation under all circumstances. At the very least, IDEM should have addressed short term variability in the refinery's CWIS intake facial plane orthogonal velocity rates and the effect of such short term variability on the expected protectiveness of intake performance at both Lake Michigan intakes.

a. IDEM's Should Not Have Accepted Applicant's Calculated Actual Intake Flow Data in the Absence of Applicant's Disclosure of its Intake Flow Calculation and Flow Proportioning Algorithms and Calculation Methodology

IDEM should not have accepted the Applicant's method of calculating combined total inlet flows on the basis of discharge flow monitored values and calculated flow proportioning factors between the two inlet tunnels without first performing an engineering review of Applicant's inlet flow calculations and without a public showing in the record of such calculations. IDEM's acceptance of Applicant's calculated intake flow rates based on discharge outfall flow monitoring and 'back calculating' intake rate value means that no public record exists which can be used to verify Applicant's calculated intake volumetric rates. Such verification is necessary to ensure that the BTA decision is made in a defensible scientific manner according to a standard of Best Professional Judgement (BPJ) review.

b. Applicant's Outfall 005 and 002 Effluent Flow Characterization Raises Questions as to Whether IDEM's BTA-BPJ Review Properly Considered Maximum Potential Intake Volumetric Rate Variability on Intake Facial Velocity Performance

Applicant's NPDES Application contained the following volumetric flow specifications for Outfalls 002 and 005:

[Flow in MGD]	Maximum Daily Flow	Maximum 30 day average of Daily Flow	Long Term Average
Outfall #002	98.7	86.2	73.7
Outfall #005	27.4	19.9	15.7
TOTAL	126.1	106.1	89.4

An additional application data element shows in a Water Flow Diagram contained in Applicant's NPDES renewal submittal and shown as Exhibit 9. This sheet identifies a maximum monthly average of daily flow to be 111.14 MGD.

This volumetric rate data raises questions again about the potential variability of the intake flow in light of these combined discharge numbers. IDEM's implicit assumption that a depiction of diver measured intake inlet facial plane orthogonal flow velocities at a combined total tunnel intake flow rate of 85 MGD as occurred during the diver inspection can be considered characteristic of performance at expected higher daily intake flow rates which will occur frequently at Applicant's facility was inappropriate.

c. IDEM's BTA Demonstration Erroneously Concludes that Calculated Intake Inlet Volumetric Rate Determinations and Theoretical Calculations for Flow Proportioning Between Intakes is BTA and that Direct Continuous Volumetric Flow Rate Monitoring Technology in Both Intakes is Not

As discussed above, Applicant does not operate flow rate monitoring devices on the two CWIS intake tunnels to the two Lake Michigan intakes. Such continuous monitoring of intake tunnel flow rates is a technically feasible and available technology for parameter monitoring to help ensure and guarantee that intake inlet facial plane orthogonal velocity performance of intakes will reflect performance in compliance with 33 U.S.C. §3126(b) in minimizing adverse environmental impacts.

However, in IDEM's BTA demonstration and review of how the Applicant considers or monitors performance IDEM relies only on what the Applicant has proposed for intake system monitoring in general and for intake tunnel volumetric flow rate monitoring specifically. IDEM did not consider other techniques of monitoring and specifically did not consider requiring the Applicant to do direct flow rate monitoring in each of Applicant's two tunnels to Lake Michigan.

IDEM's BTA demonstration thus fails from an intake process monitoring standpoint. IDEM's decision considered as "best" a combined total intake volumetric calculation method based on outfall flow rates and 'back calculation' of intake flow rates together with an unverified/undisclosed calculated theoretical flow rate proportioning ratio method between the two intakes. IDEM's BTA intake monitoring decision preferring Applicant's calculated results over the use of actual continuous volumetric rate monitoring in Applicant's two intake tunnels is therefore in error.

4. Applicant's and IDEM's Description of "Through-Screen Velocity" Obscures the Fact that Both of Applicant's Lake Michigan Intakes Will Cause 100% Mortalities as Entrainment Trapping Losses

Applicant and IDEM do not disclose or explain that the stated intake facial plane "through-screen velocities" as articulated on page 44 have nothing to do with screens and nothing to do with avoiding impingement losses at the facial plane of the intake inlet openings. In fact, fish and aquatic life that become entrained in Applicant's intake flow will be subjected to chlorination at concentrations well above Indiana water quality standards. Fish and aquatic organisms that survive inlet tunnel chlorination but remained trapped in the tunnel will not survive Water Station and refinery water main process-related screening operations, pumping operations and thermal loads.

IDEM and Applicant should have acknowledged the mortality effects and the 100% fish entrainment losses in the present and existing system with few if any measures to reduce such damages or to address exclusion from intake entrainment.

5. IDEM's Best Technology Available Determination Fails to Address the Effect of Intake Chlorination on Fish and Aquatic Mortalities in Applicant's Intake System

Determination of what intake technologies should be deemed to be BTA for minimizing adverse environmental impacts must necessarily consider the effects of intake chlorination for zebra/quagga mussel control on fish and aquatic fauna as an inextricably intertwined factor. However, IDEM's analysis and review of the intake matter fails to show and address the effect of intake chlorination on all features of intake-related aquatic biological protection and the 33 U.S.C. §1326(b) decision. For example, IDEM failed to conduct or require Applicant to provide an analysis of what effect intake chlorination practices will have on the performance and efficacy of a potential fish return system at Applicant's CWIS water intake system. Realistic assessment of intake chlorination practices on fish return systems and fish survival inside of Applicant's intake tunnels may mitigate for installation of entrainment exclusion controls and intake inlet screens rather than a fish return system at this facility in a revised BTA demonstration addressing Applicant's intake equipment.

6. IDEM Failed to Require Applicant to Fully Vet Alternative Intake Technology for Intake Flow Reduction

Neither IDEM's BTA demonstration nor Applicant's CWIS documentation provide complete vetting and appropriate consideration of alternative intake flow reduction technology. IDEM's BTA determination contains no consideration of alternative flow reduction through use of additional closed cycle cooling tower units beyond the two additional units Applicant is installing as part of the Whiting Refinery expansion. Nothing in IDEM's determination indicates the extent and magnitude of Applicant's existing commitments to existing cooling tower units, including a complete description of the heat dissipation load carried by the existing cooling tower units as compared to the total refinery heat load and the proportion discharged through single pass cooling water systems. Such analysis should have included, at minimum, evaluation of intake flow reductions, fish return systems, alternate internal and inlet opening screen systems, use of adjacent fine mesh nets, and other intake mitigation and control techniques.

V. Effluent Characterization

A. Applicant's Permit Application Effluent Characterization Shows that Certain Pollutant Aqueous Concentrations are Increasing

Commenters examined aqueous pollutant concentration effluent data for Outfall #005 in Applicant's February 2012 NPDES permit renewal application and similar data for Outfall #001 contained in the 2006 NPDES permit application. That examination shows that Applicant's pollutant effluent concentrations increased from the time of the 2006 permit application to the filing of the February 2012 NPDES permit renewal application in the manner shown in the table below:

Outfall 005 Pollutant	**Maximum Daily Effluent Concentration (mg/l)**			**Monthly Average Effluent Concentrations (mg/l)**		
	2006	2012	Factor of increase - 2012 / 2006	2006	2012	Factor of increase - 2012 / 2006
Selenium	0.034	0.038	1.1	0.0215	0.035	1.6
Sulfate	370	868	2.3	315	701	2.2
Tot Dissolved Solids	980	2143	2.2	905	1721	1.9
Chlorides	424	611	1.4	263	392	1.5
Arsenic	0.0077	0.014	1.8	0.0071		

Lead	0.021	0.043	2.0	0.0077	0.005	
Manganese	0.089	0.12	1.3	0.073		
Strontium	0.78	0.90	1.2	0.53	0.61	1.2
Copper	0.0058	0.019	3.3	0.0029	0.0047	1.6
Arsenic	0.0077	0.014	1.8	0.0071		
Vanadium	0.63	0.84	1.3	0.37	0.55	1.5

All of the pollutants listed in the table above were subject to monitoring requirements and final water quality based effluent limitations in the pre-diffuser Outfall #001 2007 NPDES permit. However, the final water quality based effluent limitations for 2007 permit Outfall #001 never went into effect because the Applicant chose to install a diffuser regulated under Outfall #005 in the 2007 permit. Once the outlet diffuser was installed in Lake Michigan, Applicant as permit-holder became permanently subject to Outfall #005 effluent limitations in the 2007 permit which did not include the previous water quality based effluent limitations and monitoring requirements applicable to the pollutants regulated through Outfall #001 under the terms of the 2007 NPDES permit.

Only vanadium remains regulated under Outfall #005 in IDEM's Draft 2013 permit renewal. However, the 2013 permit vanadium allowed effluent limitations are significantly higher than what would have been allowed under final vanadium limits in the 2007 permit Outfall #001 effluent limit table.

Commenters request that IDEM locate historical flow rate information in order to determine if the Applicant increased its pollutant loadings to Lake Michigan as a result of these reported increases in aqueous pollutant concentrations in Outfall #005 during the term of the 2007 permit effectiveness. Once IDEM completes the task of determining whether the Applicant increased loading rates of the pollutants addressed, Commenters request that IDEM publish such findings for public review as part of the responsiveness summary in this matter. Further, Commenters request that IDEM clarify whether the Applicant caused such loading rate increases, when such increases occurred (including times before the diffuser went into operation) and whether any such loading increases triggered any aspect of regulatory concern.

B. Applicant's Nitrate Effluent Characterization in the August 2012 NPDES Permit Application Appears to be Inaccurate

Applicant's operations associated with processing increased amounts of tar sands synthetic crude is an activity that increases the flux of nitrogen as inputs to the Refinery wastewater system. In the ongoing Refinery expansion, Applicant is increasing capacity for sour water stripping which means additional loads of ammonia directed to the refinery's lakefront wastewater treatment plant.

In reviewing Applicant's August 2012 effluent characterization, Applicant indicated that nitrates were "believed absent" and a concentration value of <0.1 mg/l was listed. In addition to this data, Commenters reviewed Applicant's entire history of TRI reports on water effluents listed for nitrate compounds. Over the entire history that nitrate compounds have been reportable TRI compounds for water effluent reporting up to the most recent reporting year, Applicant has never submitted any such TRI water effluent reports for nitrate compounds to U.S. EPA.

However, Applicant's 2006 NPDES permit renewal application contains several indications the Whiting Refinery wastewater treatment plant discharges substantial nitrate compound effluents from its facility WWTP operations. All of these admissions are contained in Applicant's November, 2006 anti-degradation analysis.[28] Exhibit 10 includes relevant pages from that analysis addressing the presence of nitrate in Applicant's process wastewater discharge.

In the "Addendum" portion of Exhibit 10 on page 1 of that document, Applicant's consultant states:

> "The Lakefront WWTP is not specifically designed to degrade (nitrify) ammonia, however conditions do existing in the aeration tank that allow the growth of nitrifiers and the mass of these nitrifiers has been effective in degrading ammonia. The removal efficiency used for this Anti-Deg Analysis has been developed as follows ..... Ammonia removal efficiency % = 70%"

The original volume of the cited report contains 3 tables in Exhibit 10 showing high daily rates of nitrate effluent. Table 12 of the document is entitled "BP Whiting Lakefront WWTP CXHO Nitrogen Evaluation (Modified with 2001-=2002 Long Term Average)" and shows facility nitrate compounds calculated at 923 lbs per day, which is an annual rate of nitrate compound effluents of over 336,000 lbs/year.

These statements from 2006 contradict Applicant's own August 2012 NPDES permit application characterization of nitrate effluents. Applicant acknowledged in 2006 that nitrification bacteria colonized their aeration wastewater treatment unit and Applicant used and assumed the bacterial nitrification activity in their treatment units as a key strategy in their method for reducing ammonia effluents. Given such admissions from 2006, Applicant cannot credibly state on their NPDES application that nitrate effluents are believed absent.

At a nominal loading rate of 923 lbs. of nitrates per day and at the present flow rate of 19.9 MGD, aqueous concentrations of nitrate would nominally be expected to be about 5.6 mg/l, which is higher than the <0.1 mg/l concentration listed by the Applicant in the August 2012 NPDES permit application.

Commenters further note that Applicant's purported lack of nitrates in its effluent, if true, would be extremely unusual for the petroleum refinery industry, as the vast majority of large, existing refineries in the United States report over 10,000 lbs of TRI nitrate compound aqueous

[28] Case by Case Antidegradation Analysis, November, 2006; prepared for BP Whiting Refinery by Advent Environ

effluents annually. The Applicant should be required to provide further evidence to support an anomalous lack of nitrate, particularly in light of its 2006 statements.

C. IDEM Should Reject Applicant's Operational and Monitoring Method Interpretation of the Outfall #005 Effluent Limitation for Phosphorus

Applicant's 2007 NPDES Permit and the present IDEM Draft Permit both contain effluent limitation and monitoring requirements for phosphorus. Applicant's February, 2012 NPDES application contains an effluent characterization report for Outfall #005 showing a title legend of "Phosphorus (as P), Total." However, the note at the bottom of the page states:

> "Note: As per NPDES Permit, Ortho Phosphorus analysis is substituted for Total Phosphorus analysis"

However, Commenters have diligently searched both the existing 2007 permit and IDEM's Draft Permit, but can find no provision of either document which authorizes the Applicant to substitute the analytical method for ortho phosphorus instead of using the analytical method for total phosphorus.

Clearly, the absolute magnitude of reported phosphorus when using the analytical method for ortho phosphorus will be less than the absolute magnitude of an analytic result for reported phosphorus as total phosphorus on the same wastewater sample. IDEM must therefore clarify that the total phosphorus analytical method is required for compliance evaluation monitoring on the phosphorus effluent limitation. IDEM must determine if Applicant's use of the ortho phosphorus analytical method instead of the total phosphorus analytical method constitutes a long term violation of permit monitoring requirements since using the ortho-phosphorus method has the effect of deregulating that portion of total phosphorus effluents that are compounds which have not been oxidized to phosphate ion.

D. Applicant Failed to Address Mercury Organo-Metallic Compounds

Applicant's wastewater characterization fails to address and/or identify organo-mercury compounds in the Refinery effluent. Compounds such as methyl mercury, ethyl mercury, and phenyl mercury are likely to be contained if Applicant's effluent because of inherent chemical and biological processes taking place in Applicant's facility. These compounds must be evaluated for aquatic toxicity and environmental fate if they are present in the facility's industrial process wastewater from Outfall #005.

IDEM should additionally clarify on the record whether reported total mercury analytical determinations using EPA Method 1631 Revision E reflect or do not reflect the amount and presence of methyl mercury, ethyl mercury and phenyl mercury contained in industrial wastewater samples analyzed under this EPA reporting method.

VI. Water Quality-Based Effluent Limitations

A. Applicant Failed to Submit the Ambient Lake Michigan Receiving Water Quality Data to Support the Permit Application

IDEM binding regulations at 327 IAC 5-2-3 on permit applications requires Applicant as a party seeking permit re-issuance to submit "valid, representative receiving water body monitoring data for every metal monitored or limited in the applicant's existing permit." Applicant failed to submit the required ambient Lake Michigan water quality data necessary for a complete application under 327 IAC 5-2-3.

B. Neither the Applicant nor IDEM Submitted, Published or Produced a Current PEQ/PEL Analysis

Commenters have diligently searched materials disclosed by IDEM, including the NPDES permit application and the IDEM Fact Sheet, and none of these materials contains a current review of Projected Effluent Quality and Preliminary Effluent Limitations (PEQ/PEL analysis). Such analysis is necessary under 327 IAC 5-2-11.5 to justify the determination and setting of WQBELs contained in the permit as issued; or to justify excluding pollutants contained in Applicant's Refinery wastewater effluents from consideration for WQBEL development.

Commenters object to any IDEM reliance for purposes of WQBEL determination and permit issuance decision-making on the previously produced 2006-2007 PEQ/PEL table for use in the present permitting matter. In the context of the present agency decision-making matter, the 2006-2007 PEQ/PEL analysis is out of date and cannot be relied upon as a valid analysis to reflect present effluent concentrations. This is particularly the case given that Applicant's present effluent in 2012-2013 is considerably degraded compared to its previous 2006 effluent characterization for selenium, sulfate, chlorides, arsenic, lead, manganese, strontium, copper, arsenic and vanadium. See section V, *supra,* for a table that shows the quantified effluent quality degradation for these pollutants.

Commenters further object to IDEM's use of the 2006-2007 PEQ/PEL analysis, and IDEM's ongoing failure to produce more current analysis, for the reasons set forth in subsection C, *infra.* The 2006-2007 PEQ/PEL table implicitly relies on a dilution ratio at the edge of the alternate mixing zone provided as an artifact of the operation of the diffuser apparatus. However, as discussed in subsection C, the dilution strategy decision allowing that revised mixing zone edge dilution ratio was a decision not properly vetted or authorized under 40 C.F.R. §125.3 (f).

C. The Diffuser Was Used as a Basis to Meet Water Quality Standards Without the Necessary Analysis

The Applicant and IDEM failed – in both the 2007 NPDES permit and now in the Draft Permit – to properly vet the diffuser as a dilution method and the primary strategy to address water quality standard violations. EPA rules provide:

(f) Technology-based treatment requirements cannot be satisfied through the use of ''non-treatment'' techniques such as flow augmentation and in-stream mechanical aerators. However, these techniques may be considered as a method of achieving water quality standards on a case-by-case basis when:

(1) The technology-based treatment requirements applicable to the discharge are not sufficient to achieve the standards;

(2) The discharger agrees to waive any opportunity to request a variance under section 301 (c), (g) or (h) of the Act; and

(3) The discharger demonstrates that such a technique is the preferred environmental and economic method to achieve the standards after consideration of alternatives such as advanced waste treatment, recycle and reuse, land disposal, changes in operating methods, and other available methods."[29]

40 C.F.R. 125.3(f). Because the installation of a diffuser was a non-treatment technique for meeting water quality standards, IDEM was required to use decision-making standards under 40 C.F.R. 125.3 (f) during the issuance of the 2007 permit to allow the dilution strategy to meet Indiana water quality standards in Lake Michigan receiving waters and to allow the alternate mixing zone intrinsic to the use of the end-of-pipe diffuser.

However, IDEM never required Applicant – either in 2007 or in the Draft Permit -- to submit a proper demonstration meeting all parts of the three criteria of the rule and no aspect of IDEM's 2007 permit issuance decision can be considered as a declaration and agency explanation that IDEM complied with all requirements of 40 C.F.R. 125.3(e) and (f) or that this issue was properly vetted and explained in the public notice or that it was otherwise an element of IDEM decision-making in the 2007 permit issuance.

As a practical matter neither IDEM nor Applicant could properly address all three factors so as to allow such a pollution effluent dilution scheme with the diffuser under the plain meaning of the provisions of 40 C.F.R. §125.3 (f). Neither IDEM nor Applicant made any inquiry into, or determined what level of effluent limitation control reflected BAT-BPJ for the non-ELG pollutants, so it would have been impossible to address the first factor with no issued BAT-BPJ effluent limitation or determination. On 40 C.F.R. §125.3(f)(2) evaluation, there is no evidence that the Applicant ever certified that it would give up the variance application rights articulated in that specific provision.

On 40 C.F.R. §125.3(f)(3) evaluation, Applicant and IDEM considered a portion of the issues articulated in the criteria for decisionmaking, but no complete demonstration addressing all aspects of the required criteria was carried out in the 2007 permit issuance. In particular, a proper inquiry for good faith determination under 40 C.F.R. §125.3(f)(3) mitigates that alternatives such as considering what effect that refinery feedstocks have on effluents and water quality compliance is a valid and needed exercise.

[29] 40 C.F.R. §125.3(e) & (f)

As a result, no portion of the 2007 permit issuance matter addressing the use of non-control dilution methods to meet water quality standards can be considered as having been lawfully authorized by IDEM under 40 C.F.R. §125.2(f). Because the 2007 Permit matter and submittal were not properly authorized under 40 C.F.R. §125.2(f), IDEM cannot allow or use the 2007 decision as basis for the required 40 C.F.R. §125.2(f) demonstration in the present matter. Present issuance of an IDEM decision allowing a dilution strategy to meet water quality standards along with continued allowed use of a diffuser and alternate mixing zone must be considered in the present matter as a *de novo* agency decision based on the present permit application. Allowance of such continued dilution strategy practices that were previously authorized must be considered as being re-authorized in a permit re-issuance matter. Indeed, Applicant explicitly recognizes that its primary dilution strategy allowance to meet water quality standards with the diffuser must be re-authorized and justified in a permit re-issuance matter, as shown in Item #4 on page 4 of the Fact Sheet ("BP Whiting requests the continuation of the alternate mixing zone for the Outfall 005 high rate multiport diffuser, including the application of a 37.1:1 mixing ratio for water quality based effluent limit (WQBEL) development. Per part I.H.1 of the existing permit, BP submitted the diffuser operation and maintenance plan to IDEM (current revision = 8/22/2011").

Although the Applicant requested renewal of the dilution strategy, the diffuser and the mixing zone, nothing in Applicant's submittal is or can be construed as a demonstration that complies with 40 C.F.R. §125.3(e) & (f) (and notably the 3 criteria under (f)) for continuing to allow a non-control dilution method. On review of IDEM's present matter and authorization under 40 C.F.R. §125.3(f)(2), Commenters can find no evidence of the required Applicant certification necessary to approve a request for allowance of a non-control dilution method. Commenters can find no clearly articulated demonstration under 40 C.F.R. §125.3(f)(3) that justifies the renewal decision allowing the dilution strategy, diffuser operation and alternate mixing zone. It is thus evident that IDEM has not adequately considered the decision to allow the continued dilution strategy, diffuser operation and alternate mixing zone in a manner in compliance with the decision standards of 40 C.F.R. §125.3 (f).

D. The Permit Lacks Whole Effluent Toxicity Limitations

In issuing the Outfall #005 effluent limitations and monitoring table in the Draft Permit, IDEM eliminated both the acute and chronic Whole Effluent Toxicity ("WET") effluent limitations of 1.0 TUa and 1.0 TUc that were present in the existing permit Outfall #001 effluent limitations table. In addition, IDEM eliminated all acute WET testing in the Outfall #005 effluent limitations and monitoring table. Both of these changes are unacceptable for a facility effluent which contains increased amounts of toxicants and nonconventional pollutants with the advents of Applicant's increased utilization of tar sands crude feedstocks containing more metals, dissolved solids, sulfate and chlorides.

Neither the permit application nor the IDEM Fact Sheet contain a current PEQ/PEL determination on Whole Effluent Toxicity that was produced in association with the decision to issue the Draft Permit and to publish the IDEM Fact Sheet. As a result, IDEM's decision to terminate all WET effluent limitations and to terminate acute WET monitoring impermissibly depends on an analysis carried out in 2006-2007 of WET testing results on an effluent at that

time whose quality is markedly degraded presently compared to the 2006-2007 time frame when the WET PEQ/PEL analysis was carried out.[30]

E. The Draft Permit Materials Contain No Showing that Applicant Will Not Cause Acute Toxicity from Excessive Concentrations of WET Acute Toxic Units Inside of the Mixing Zone

Indiana Water Quality Standards prohibit effluent source discharges that cause acutely toxic concentrations of pollutants, including WET Acute Toxic Units, inside of discharge mixing zones pursuant to 327 IAC 2-1-6(a)(1)(E). The effect of these requirements is that dilution assumptions concerning the effluent after it leaves any portion of the diffuser apparatus must not be used in addressing whether the any portion of the diffuser effluent causes immediate acute toxicity inside the mixing zone.

Nothing in the IDEM Fact Sheet, the underlying file or in permit application is a demonstration or showing that Applicant's discharge of acute WET Toxic Units will not cause unacceptable and prohibited amounts of acute toxicity inside the approved mixing zone and directly adjacent to diffuser effluent discharge ports for the Outfall #005 discharge in violation of Indiana Water Quality Standards at 327 IAC 2-1-6(a)(1)(E).

Additionally, the failure of the Draft Permit to include both acute WET water quality based effluent limitations and acute WET monitoring requirements means that no effluent limitations and monitoring requirements on the end of pipe discharge protect and ensure compliance with the Indiana Water Quality Standard prohibition on acutely toxic amounts of WET discharged at any point inside of Applicant's approved alternate mixing zone.

VII. Monitoring

A. IDEM Should Establish Internal Outfall Monitoring Points

In order to ensure proper and thorough monitoring, IDEM should reformat Applicant's permit in order to establish multiple internal outfalls for the sampling points for purposes of ongoing, permit-required technology-based effluent limitation compliance measurement and determination. For example, IDEM should establish internal outfalls, monitoring requirements for those outfalls and technology-based effluent limitations specific to those internal outfalls covering sour water processing sewers and the brine treatment unit discharge points. Mercury and mercury compounds should be addressed at the internal monitoring points.

Internal outfalls and monitoring points are advantageous for wastewater treatment stewardship, regulatory accountability and individualized treatment process efficacy monitoring in the control of toxic and hazardous industrial wastewater constituents. The reason for this advantage of internal outfalls and sampling points is that direct monitoring at the treatment unit

[30] Commenters would have provided a detailed review of all recent WET testing for purposes of this comment, but cannot provide such a narrative because IDEM failed to disclose any WET testing reports or data at all to Commenters despite two clear public record requests for the subject information.

outlet of a treatment unit allows process-individualized toxicant detection and monitoring of the specific internal monitoring point in question. A second important benefit of internal monitoring points for Applicant's facility is that wastewater analytical method detection and quantification limits pose much less of a problem for internal monitoring points when flows at such internal outfalls are not diluted by other process, cooling water and stormwater flows as they are at the point of final effluent discharge.

Additionally, the Outfall #002 annual total organic carbon monitoring frequency is too infrequent to be able to ensure that applicant can ensure regular compliance with effluent limitations. The Outfall #002 effluent limitation table contains an effluent limitation on the net total organic carbon concentration but only requires one analytical sample annually. Such limited monitoring cannot be used by Applicant to ensure that its effluent complies with the stated effluent limitation. More regular monitoring should be required and the frequency and internal monitoring point locations should be established in the cooling water system for the refinery so that cooling water TOC monitoring can detect the process group location of any leaking heat exchangers which may allow petroleum hydrocarbons to enter the cooling water circuit.

B. Various Aspects of the Monitoring Requirements Need to be Strengthened and Clarified

IDEM should revise and amend the format of its permit effluent limitation tables or supplement the presentation of such information in a manner so that each monitoring requirement provided in the permit indicates the specific EPA analytical method or other specific technical method the Applicant is required to use in carrying out its effluent monitoring activity. In addition to listing the specific analytical method for each pollutant, IDEM should also list what Limit of Detection ("LOD") and Limit of Quantification ("LOQ") for each monitored pollutant that Applicant is expected to demonstrate in carrying out the EPA or other technical analytical method for wastewater characterization.

For all of the monitored pollutants that are subject to 24-hour composite sampling requirements, IDEM should publish a determination in the Fact Sheet that such 24 hour composite sampling collection and methods are compatible and consistent with maximum sample holding time requirements of the specific technical analytical method for the specific pollutant in question.

Footnote #4 for the Outfall #002 is too vaguely stated to be enforceable in practice. "Net temperature" is not defined, and this term is not a unit or a valid physical description of the effluent limitation shown in the table as maximum heat release in BTU's per hour. References to 'appropriate conversion factor' are similarly vague. Footnote #4 should be replaced with a clearly stated method of calculating the hourly heat released from calculation of intake and outfall energy rates using equations and defined variables as stated in the calculation methodology.

Since the aquatic toxicity of ammonia depends on temperature and pH in addition to the ammonia concentration, IDEM should publish a Fact Sheet declaration on how compliance with

Indiana Water Quality Standards addressing ammonia is maintained both inside of the mixing zone and at the edge of the mixing zone without requiring continuous measurement of both temperature and pH to support assurance of maintenance of WQS for ammonia.

Thank you for the opportunity to submit these comments. If you have questions or would like to discuss further, please contact Ann Alexander (312-651-7905, aalexander@nrdc.org), Lyman Welch ((312) 939-0838 X230, lwelch@greatlakes.org), or Nicole Barker ((219) 879-3937, nicole@savedunes.org). These comments were prepared with extensive assistance from the Alliance's consultant Alexander Sagady. The Alliance can include Mr. Sagady in any further discussions if need be.

Respectfully submitted,

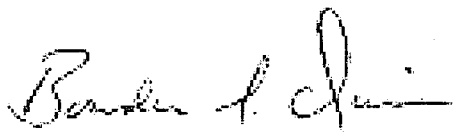
Nicole Barker
Executive Director
Save the Dunes

Ann Alexander
Senior Attorney, Midwest Program
Natural Resources Defense Council

Lyman Welch
Water Quality Program Director
Alliance for the Great Lakes

Thomas R. Anderson
Vice President, Porter County Chapter
Isaak Walton League

Kim Ferraro
Director of Agriculture and Water Policy
Hoosier Environmental Council



Bowden Quinn
Conservation Director
Hoosier Chapter of the Sierra Club

bp

E-Mail: sroush@idem.in.gov
Fed Ex: Overnight

BP Products North America Inc.
2815 Indianapolis Blvd.
P.O. Box 710
Whiting, IN 46394-0710
USA

April 29, 2013

Mr. Steve Roush
Industrial NPDES Permits Section
Office of Water Quality, MC 65-42PS
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

Re: BP Products North America Inc. - Whiting Business Unit
NPDES Permit - IN0000108 Public Notice Comment

Dear Mr. Roush,

Thank you for the opportunity to review and comment on IDEM's draft BP NPDES Permit. We have attached an itemized list of comments for your review as well as a red lined copy of the draft permit corresponding to these comments. If you have any questions or need any further information, please feel free to contact Ms. Rose Herrera, Environmental Engineer at (219) 473-3393 or e-mail herrerrm@bp.com.

Sincerely,

James W Keating for Linda Wilson

Linda J. Wilson
Whiting Business Unit
Environmental Superintendent

Attachments:

Itemized Comments
Red Line of Draft Permit

CC: Stan Rigney, Industrial NPDES Permit Supv IDEM
Paul Higgenbothem, Chief Permits Branch IDEM

Comments to Draft Permit IN0000108 April 2013

Proposed Changes Part IA1
Outfall 005

- Update the description of Outfall 005 to match the language in the fact sheet on page 4 paragraph 6. IDEM should delete NiSource Whiting Clean Energy (we no longer take their wastewater as of November 2007) and should include Praxair and other related offsite facilities such as pipelines and terminals.

- Typo for Phenolics: We believe it should be 24 hour composite. Same as previous permit. We have an acceptable compositor for this sampling.

- Typo for Sulfide. Sulfide was requested to be a grab sample so preservation can be done properly. BP requested this in response to an EPA recommendation concerning sampling procedures. We believe IDEM inserted "Grab" for Phenols mistakenly instead of Sulfide

- A notation should be added to the table under footnote (5) clarifying that BP should use EPA Method 1631, Revision E or the most current version of that method, if later revisions are approved.

Part 1A2
Outfall 002

- We now have continuous temperature indicators for our intake and discharge. See proposed language changes in redline permit to reflect the appropriate monitoring and calculation.

Part IA3
Outfall 003/004

- Typo on Description of Outfall : delete extra quote mark

Section B, C

- Section B typo. Should be Section C Monitoring and Reporting

Section D

- Section D needs to be reworded or deleted. The inclusion of Outfall 005 in the stormwater requirements is not appropriate here. See attached redline copy of permit language changes needed if section D not deleted.
- Please also find below additional justification to remove this language.

Part I.D. Storm Water Monitoring and Non-Numeric Effluent Limits (pp12-21 of 51)

BP requests that IDEM remove this part of the Draft Permit in its entirety. Stormwater monitoring and numeric effluent limits already are provided for Outfalls 003 and 004 in part I.A and I.E. As a result, there is no need for extensive monitoring or non-numeric effluent limits such as those proposed here. BP's stormwater performance is exemplary. Given only one exceedance in the past five years at a stormwater outfall, there are no significant problems that would require such a substantial revision to the stormwater portion of the Draft Permit.

In addition, the industrial activities occurring in the areas contributing to Outfalls 003 and 004 are minimal; these areas consist of tank farms and containment dikes only. Further, BP already has instituted sufficient control measures for these areas. In addition to its SWPPP, BP has the ability to retain stormwater in the tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if anoil sheen is present. See Draft Fact Sheet at p. 8. As a result, the proposed Part I.D. requirements are either inapplicable or unnecessary. The stormwater provisions contained in the current Permit, along with the monitoring and numeric effluent limitations imposed at Outfalls 003 and 004, are more than sufficient to ensure that BP's stormwater discharges comply with all applicable Clean Water Act (CWA) requirements.

The Fact Sheet describes the proposed stormwater requirements as follows:

> According to 40 CFR 122.26(b)(14)(ii), facilities classified as Standard Industrial Classifications 24 (except 2434), 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373 are considered to be engaging in 'industrial activity' for purposes of 40 CFR 122.26(b). Therefore, the permittee is required to have all storm water discharges associated with industrial activity permitted. Treatment for storm water discharges associated with industrial activities is *[sic]* required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to BPT/BAT/BCT for storm water associated with industrial activity.

Draft Fact Sheet at 30 (emphasis added). EPA's determination, however, fails to consider that no such minimum requirements are necessary where a stormwater discharge already is controlled by numeric effluent limits and existing control measures that will provide complete treatment at the facility's wastewater treatment plant if necessary to prevent any non-compliant discharge. In addition, EPA's determination appears to require incorporation of many provisions taken directly from its own Multi-Sector General Permit (MSGP). Application of such provisions is both premature and inappropriate, because IDEM has not adopted the MSGP into its Rule 6 permits or any replacement general permit for stormwater discharges associated with industrial activity. IDEM has no authority to adopt the federal MSGP on a case-by-case basis in NPDES permits, without the benefit of a formal rulemaking process.

Further, a number of the stormwater provisions proposed in Part I.D. of the Draft Permit are not authorized by the CWA. Certain provisions attempt to regulate stormwater flow and velocity. The CWA and applicable regulations, however, only authorize the control of pollutant discharges

to waters of the state. Stormwater flow is not a pollutant. *See, e.g., Virginia DOT v EPA*, No. 1:12-CV-775 (E.D. Va. Jan. 3, 2013). Other provisions attempt to control activities occurring on the BP facility that do not result in pollutant discharges. As noted above, BP's stormwater discharges are sufficiently controlled by application of the numeric effluent limits applied at Outfalls 003 and 004, the stormwater provisions contained in the current Permit, and the existing control measures noted in the Draft Fact Sheet that allow BP to retain stormwater in tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if needed. No further measures are necessary or authorized. Therefore, BP requests that Part I.D. be removed from the Draft Permit. All statements concerning this part should be removed from the Fact Sheet.

In the event that IDEM does not remove Part I.D., BP has additional comments, as follows:

Part I.D. Storm Water Monitoring and Non-Numeric Effluent Limits (p12 of 51)

BP requests that the following language from the current permit be added at the end of the first paragraph to clarify that all stormwater requirements apply only to activities related to the discharge at Outfalls 003 and 004:

> Notwithstanding any other provision of this permit, the Storm Water Monitoring and Non-Numeric Effluent Limits and SWP3 are not required to address storm water discharges that are routed to treatment and then discharged through Outfall 005.

Part I.D.1 Control Measures and Effluent Limits (p12 of 51)

The definition of the term "minimize" as set forth in this section is too vague to allow BP to determine what is necessary to achieve compliance, and should be removed.

Part I.D.2 Control Measures (p13 of 51)

As noted above, the non-numeric effluent limits proposed in this section are unnecessary and unauthorized. The BP stormwater discharges are sufficiently controlled through application of numeric effluent limits at Outfalls 003 and 004, the stormwater provisions contained in the current Permit, and existing control measures that allow BP to retain stormwater in tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if needed. The industrial activities that contribute stormwater to Outfalls 003 and 004 consist of tank farms and retention dikes only. As a result, no further control measures are necessary. BP requests that IDEM add language to this subpart to acknowledge the sufficiency of existing control measures.

In addition, BP requests that the provisions concerning stormwater run-on be removed. As indicated in the Fact Sheet at p9, run-on does not mix with stormwater from industrial activity at the facility. Further, BP should not be responsible for controlling pollutants in flows that it has no control over, and that are not associated with BP's industrial activities.

Part I.D.3 Control Measure Selection and Design Considerations (p13 of 51)

Provisions containing general guidance or advice rather than enforceable terms or conditions should be removed from the body of the Permit and contained in the Fact Sheet only. IDEM has authority to regulate the discharge of pollutants in the Permit, and should not attempt to regulate

how stormwater may or may not contact materials on site. Further, evaluation of such elaborate considerations should not be required for areas in which very limited industrial activities (tank farm storage) occur.

Part I.D.4.a. Minimize Exposure (p14 of 51)

The minimization requirements contained in this section are too vague to allow BP to determine what is necessary to achieve compliance, and should be removed. Further, evaluation of such elaborate considerations should not be required for areas in which very limited industrial activities (tank farm storage) occur. In addition, provisions containing general guidance or advice rather than enforceable terms or conditions should be removed from the body of the Permit. If necessary, that guidance can be provided in the Fact Sheet. BP requests that IDEM add language to this subpart or acknowledge the sufficiency of existing control measures, and to require additional measures only if existing measures are not working, and only as necessary to control stormwater discharged from tank storage areas. BP also requests language clarifying that this subpart does not apply to any discharges that are routed to treatment and discharged through Outfall 005.

Part I.D.4.b. Good Housekeeping (p15 of 51)

These provisions are inapplicable to tank storage areas, and should be removed.

Part I.D.4.d. Spill Prevention and Response Procedures (p15 of 51)

Labeling, spill response, and reporting requirements are governed by other laws, and are outside the authority granted to IDEM under the CWA and applicable state laws and regulations. BP will comply with such requirements under other applicable laws, and should not be subject to potential liability under its NPDES Permit as well.

Part I.D.4.e. Erosion and Sediment Controls (pp15-16 of 51)

IDEM has no authority over "onsite" erosion that does not discharge to waters of the state, nor does it have authority to regulate stormwater flow. BP requests that this provision be removed. BP already has instituted an SWP3 and existing control measures sufficient to ensure compliance with all CWA requirements. In addition, provisions containing general guidance or advice (such as "you are encouraged to check out information from both the State and EPA websites") rather than enforceable terms and conditions should be removed from the body of the permit. If necessary, that guidance can be provided in the Fact Sheet.

Part I.D.4.f. Management of Runoff (p16 of 51)

IDEM has no authority to regulate stormwater flow or mandate infiltration, reuse, or other flow restrictions. In addition, BP already has instituted control measures that provide for infiltration and evaporation or treatment as necessary to prevent non-compliant discharges. However, such measures should not be required unless necessary. BP requests that this provision be removed.

Part I.D.4.g. Salt Storage Piles or Piles Containing Salt (p16 of 51)

BP requests that this subpart be removed as inapplicable to the tank farm areas that contribute stormwater to Outfalls 003 and 004.

Part I.D.6. Corrective Actions – Conditions Requiring Review (pp17-18 of 51)

This provision is too vague to allow BP to determine what is necessary to achieve compliance, and improperly attempts to regulate activities already governed by other parts of the CWA and other regulations. BP requests that this provision be removed.

Part I.D.7. Corrective Action Deadlines (p18 of 51)

This section should be removed because the corrective actions that it references are too vague to allow BP to determine what is necessary to achieve compliance, and attempts to regulate activities already governed by other parts of the CWA and other regulations. In addition, many of the provisions are inapplicable to the tank storage activities occurring in the areas contributing stormwater to Outfalls 003 and 004.

Part I.D.8. Corrective Action Report (p18 of 51)

This section should be removed because the corrective actions that it references are too vague to allow BP to determine what is necessary to achieve compliance, and attempts to regulate activities already governed by other parts of the CWA and other regulations.

Part I.D.9. Inspections (pp19-21 of 51)

The provisions contained in the current Permit are sufficient to ensure adequate inspections. These provisions are overly restrictive and attempt to govern activities outside IDEM's NPDES authority, which already are governed by other legal and regulatory requirements. In addition, many of the provisions are inapplicable to the tank storage activities occurring in the areas contributing stormwater to Outfalls 003 and 004. BP requests that this provision be removed.

Part I.E. Storm Water Pollution Prevention Plan (pp21-27 of 51)

For the reasons described above, BP requests that this provision be removed and replaced with the SWP3 provisions contained in the current Permit. The current Permit conditions, as well as the numeric effluent limits imposed at Outfalls 003 and 004, and BP's existing control measures are more than sufficient to ensure BP's continued compliance with all applicable CWA requirements. All statements contrary to the SWPPP provisions contained in the current Permit should be removed from the Fact Sheet. In the event that IDEM does not revert to the SWP3 requirements contained in the existing permit, BP has the following additional comments:

Section E

- E1 needs edits to language: "... the permittee is required to revise and update the current Storm Water Pollution Prevention Plan (SWP3) for storm water outfalls 003 and 004 for the permitted facility". Outfall 005 is a process waste water discharge not storm water. All stormwater from the refinery areas is collected and commingled in the process sewers and fully treated as process wastewater. IDEM should revise the language consistent with the current permit.

- Add to section E1 line "d" to be the same as the current permit language.

"d. Not withstanding any other provision of this permit, the SWP3 is not required to address stormwater that is routed to treatment and then discharged through Outfall 005."

- Remove all provisions in E2b, c, and d that are inconsistent with or unnecessary to control of stormwater discharges from tank storage areas, where very limited industrial activities occur.

- E2d3 edit language to be consistent with annual basis, or within one year (not 365 days)

Section F and G

- Typo on F5 : non0vandium, delete 0
- Section G 1c (1): BP requests that IDEM add "from time of last aliquot."
- Section G now has Acute Toxicity value of 11 TUa. BP requests that IDEM explain in the Fact Sheet the basis for inclusion of this trigger value, including that there is no reasonable potential for the BP discharge to exceed that value and no other toxicity concerns at this time.
- BP also requests that IDEM explain the basis for inclusion of two test species for biomonitoring, when the facility already has determined that the flathead minnow is the most sensitive species.

Part II

- Part II A4: Delete second paragraph last part "and NiSource..." and add Praxair.

- Part II A17a include ... "that causes significant lowering of water quality" to complete the sentence as in the rule (327 IAC 2-1.3-3(c)(1)). The rule does not prohibit all new or increased discharges of BCCs other than mercury, but only those that cause a significant lowering of water quality.

- Part II B 3c1 Upset Conditions. Include "if possible" same as previous language, consistent with 327 IAC 5-2-8(12).

- Typo II C 1b delete comma and add "d" to discharge.

- Typo II C 10b add "However, this requirement does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions." This will ensure that the permit is consistent with IAC 5-2-9(2)

Part III

- Part B third paragraph: remove from the last sentence "fish return alternatives must be evaluated" and continue to list the items required to avoid confusion on what is required.

- B2 should be removed or reworded such that BP will comply with the final rule for 316 (b) and notify IDEM of the plans for compliance in accordance with the rule requirements.

- See redline word document for suggested alternative language

Part IV

- Part IV B annual reports: should provide a hard date such as April 1 each year

- Part IV C SMV Renewal: We believe IDEM means not less than 180 days which is then consistent with a permit application for renewal. Not within 180 days.

- BP requests that Part IV.D.3-6 be removed. These activities already have been completed, and need not be included in the permit.

- BP also requests that IDEM indicate in the Fact Sheet that the SMV, including the PMPP, has been reviewed and approved by both IDEM and EPA.

FACT Sheet Corrections/Comments:

p3, paragraph 7: Typo on Canadian Ex1ra Heavy Crude.

p4, paragraph 6: Eliminate Whiting Clean Energy (they no longer send us any waste water as of November 2007 they send their waste water to City of Whiting).

p5, paragraph 11: IDEM did not revise the sulfide sampling to "grab,"

p5, paragraph 14: IDEM did not include retreatment of off-spec WWTP effluent in the description of waste streams for Outfall 005 in the permit as it is included in the fact sheet.

p11, section 2.3, second paragraph: Add Clarifier as part of WWTP, remove Grit Chamber (it is out of service) also delete the sentence with NiSource Whiting Clean Energy and Ineos and add new sentence in place as follows: "BP also accepts and treats stormwater from Ineos at the wastewater treatment plant and the retreatment of off-spec WWTP effluent". Note that as of 2012 Ineos plant is permanently shut down only stormwater is routed to BP WWTP.

p12: Modify paragraphs on Whiting Clean Energy and Ineos. Add last sentence to Whiting Clean Energy paragrpah as follows: "This has now been permitted to discharge to the City of Whiting and not to BP". Add last sentence to Ineos as follows: "As of 2012 the Ineos plant has since shutdown, but has only stormwater that drains directly to our WWTP". Delete Whiting Clean Energy from third paragraph under Ineos.

P15: There is an updated WWTP flow diagram (July 2012) that was submitted to IDEM when the final filters were replaced. This flow diagram should be used.

p18: The final filters are already installed. Replace the words "will be replaced" with "have been replaced"

p18: New/Upgrade Dissolved Air Flotation (DAF): paragraph should be modified to state "...installation of a new DAF or DNF to replace the existing DAF unit by Dec 31,2015."

p.18: The PH limit of 9.0 exceeded in Jan 2010 is from Outfall 004 not 005. Create a separate note for Outfall 004 exceedances.

p22: Typo on first paragraph TEBLS should be TBELS.

p29, section 5.4: IDEM did not include how and why an acute value was added or justification for including a second test species. Please expand on that.

p30, section 5.6: Need to add the rest of 327 IAC 2-1.3 to end of sentence a: "...that causes a significant lowering of water quality."

p32, section 5.7: We do not agree that technology-based effluent requirements are needed for stormwater at Outfall 005, except to the extent of the limits included for Outfalls 003 and 004. These requirements in the permit and the Fact Sheet discussion should be deleted.

p32, 5th paragraph: Something appears to be missing in the last sentence describing the new stormwater equalization tank. "As with existing equalization/stormwater tanks, _____ a 10 million gallon tank with an internal roof domed tank." Suggest delete the sentence, not needed.

p35, 4th paragraph: "it could be" should be deleted from the last sentence.

p37, WET: IDEM provided no justification for inclusion of an acute limit in the absence of RPE, or for adding another test species. Please clarify.

p43, 5th paragraph: Typo. "frazzle" should be "frazil"

p48, 1st standalone paragraph: IDEM has failed to explain why fish return alternatives must be evaluated when it has made a determination that the existing structures represent the best technology available to minimize adverse environmental impact. There is a concern that new rules may not even require this.

p50, Section 6.3: It is recommended that IDEM include the fact that both IDEM and EPA reviewed and approved BPs mercury variance application and pollutant minimization plans.

p55, It should be noted that items 3, 4 and 5 need of the PMPP have been completed.

STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), Title 13 of the Indiana Code, and regulations adopted by the Water Pollution Control Board, the Indiana Department of Environmental Management (IDEM) is issuing this permit to

BP PRODUCTS NORTH AMERICA, INC.
WHITING REFINERY

is authorized to discharge from a petroleum refinery located at 2815 Indianapolis Blvd., Whiting Indiana to receiving waters named Lake Michigan and the Lake George Branch of the Indiana Harbor Ship Canal in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III and IV hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date:_____

Expiration Date:_____

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Signed on _____ for the Indiana Department of Environmental Management.

_____
Paul Higginbotham, Chief
Permits Branch
Office of Water Quality

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 005 (The discharge from the diffuser located in Lake Michigan). The discharge is limited to treated process wastewater from normal refinery operations including maintenance, turnaround activities, excavation, dewatering, construction activities, tank cleaning, and temporary flows from upsets or downtime and from Ineos stormwater, Praxair process waste water, recovered ground water, and other related offsite facilities such as pipelines and terminals wastewater as well as most of the storm water from the site and re-treatment of off spec WWTP effluent. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

Deleted: and NiSource Whiting Clean E

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Comment [h1]: See fact sheet description p4 paragraph 6 for complete description.

DISCHARGE LIMITATIONS OUTFALL 005 [1][3][8]
Table 005-1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
BOD_5	4,161	8,164	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
TSS	3,646	5,694	lbs/day	Report	Report	mg/l	2 x Weekly	24 Hr. Comp.
COD	30,323	58,427	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Oil and Grease	1,368	2,600	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Phosphorus	Report	Report	lbs/day	1.0	Report	mg/l	1 x Weekly	24 Hr. Comp.
Phenolics (4AAP)	20.33	73.01	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Deleted: Grab
Ammonia as N	1,030	2,060	lbs/day	Report	Report	mg/l	5 x Weekly	24 Hr. Comp.
Sulfide	23.1	51.4	lbs/day	Report	Report	mg/l	1 x Weekly	Grab Deleted: 24 Hr. Comp.
Total Chromium [2]	23.9	68.53	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hr. Comp.
Hex. Chromium [4]	2.01	4.48	lbs/day	Report	Report	mg/l	1 x Weekly	24-Hr. Comp.
Vanadium [2]	50	100	lbs/day	0.28	0.56	mg/l	1 x Monthly	24-Hr. Comp.
Total Mercury [5][7]								
Final Limits	0.00022	0.00053	lbs/day	1.3	3.2	ng/l	6 x Yearly	Grab
Interim Variance Limits	Annual Average = 23.1				Report	ng/l	6 x Yearly	Grab
Whole Effluent Toxicity [6]								
Chronic	-	-	-	Report	-	TUc	2 x Yearly	

Table 005-2

Parameter	Quality or Concentration Daily Minimum	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
pH	6.0	9.0	s.u.	3 x Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 005 that are greater than the dosage rate identified in the permit application, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The permittee shall measure and report the identified metals as total recoverable metals. One year after the Sulfur Recovery Unit (SRU) Beavon Stretford Solution blowdown (vanadium-based technology) has been replaced with the non-vanadium based Shell Claus Off-gas Treatment (SCOT), the permittee may request, in writing, a review of the effluent limits and monitoring requirement for Total Vanadium at Outfall 005.

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] Hexavalent Chromium shall be measured and reported as dissolved metal. If test results from the analysis performed for total chromium reveal that the concentration is less than the limitations for hexavalent chromium, then the test for hexavalent chromium may be eliminated for that day and reported as the same concentration as total chromium for that day.

[5] Mercury monitoring shall be conducted bi-monthly in the months of February, April, June, August, October, and December using EPA Test Method 1631, Revision E. If EPA Test Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to utilize the most current version of the method as soon as possible after approval by EPA but no later than the second monitoring event after the revision. The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Mercury	1631, Revision E* (*or the most current approved version)	0.2 ng/l	0.5 ng/l

[6] The permittee shall conduct Whole Effluent Toxicity tests in accordance with Part I.G. of this permit.

[7] For the term of this permit, the permittee is subject to the variance discharge limit developed in accordance with 327 IAC 5-3.5-8. The permittee applied for, and received, a variance from the

water quality criterion used to establish the referenced mercury WQBEL under 327 IAC 5-3.5. Compliance with the interim discharge limit will demonstrate compliance with mercury discharge limitations of this permit for Outfall 005. **The permittee shall report both a daily maximum value and an annual average for Mercury.** The annual average value shall be calculated as the average of daily maximum values from the most recent twelve-month period. Compliance with the variance discharge limit for Mercury will be achieved when the annual average value is less than the interim discharge limit. Mercury monitoring shall be conducted bi-monthly in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E. If EPA Test Method 1631, Revision E is further revised during the term of this permit, the permittee and/or its contract laboratory is required to utilize the most current version of the method as soon as possible after approval by EPA but no later than the second monitoring event after the revision. The calculating and reporting of the annual average value for mercury is only required for the months when samples are taken for mercury. See Part IV of the permit for the Mercury Pollution Prevention Management Plan Requirements.

[8] The weekly sampling period is from Monday through Sunday.

2. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfall 002. The discharge is limited to non-contact cooling water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Lake Michigan. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS OUTFALL 002 [1][3][2]
Table 002-1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC (Intake)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Discharge)	-	-	-	Report	Report	mg/l	1 x Yearly	Grab
TOC (Net)	-	-	-	Report	5.0 [5]	mg/l	1 x Yearly	Grab
Total Residual Chlorine [6][7]	20.0	60.0	lbs/day	0.01	0.02	mg/l	1 x Weekly	Grab
Oil & Grease	-	-	-	Report	5.0	mg/l	1 x Monthly	Grab
Temperature [4]								
Intake	-	-	-	Report	Report	F°/Hour	5 x Weekly	Hourly
Discharge	-	-	-	Report	Report	F°/Hour	5 x Weekly	Hourly
Net (daily ave)	-	-	-	1.7×10^9	2.0×10^9	BTU/Hour	5 x Weekly	Daily

Deleted: Hourly¶

Table 002-2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	3 x Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives including dosage rates contributing to Outfall 002 that are greater than the dosage rate identified in the permit application, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives or dosage rates shall not cause the discharge from any permitted outfall to exhibit chronic or acute toxicity. Acute and chronic aquatic toxicity information must be provided with any notification regarding any new or changed water treatment additives or dosage rates.

[2] The weekly sampling period is from Monday through Sunday.

[3] See Part I.B. of the permit for the Narrative Water Quality Standards.

[4] The net temperature shall be calculated by subtracting the average 24 hour temperature value of the intake water from the average 24 hour temperature value of the gross discharge converting to BTU/hr by multiplying the temperature difference by the 24 hour average discharge flow and the appropriate conversion factor. BP uses instrumentation to continuously measure temperature on a continuous basis except for periods of downtime, maintenance, repair, or upset,

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[5] Total Organic Carbon (TOC) shall be limited on a net basis. The net result shall be calculated by subtracting the concentration value of the intake water from the concentration value of the discharge from Outfall 002.

[6] The monthly average water quality based effluent limit (WQBEL) for total residual chlorine is less than the limit of quantitation (LOQ) as defined below. Compliance with the monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. Daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.

[7] The daily maximum WQBEL for total residual chlorine is equal to the LOD but less than the LOQ specified in the permit. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 60.0 lbs/day.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

3. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge from Outfalls 003 and 004. The discharge is limited to stormwater associated with industrial activity from the J&L and Lake George areas of the refinery. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Lake George Branch of the Indiana Harbor Ship Canal. Such discharge shall be limited and monitored by the permittee as specified below:

Comment [h2]: Typo delete".
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DISCHARGE LIMITATIONS OUTFALLS 003 and 004 [1][3][4]
Table 003/004-1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	----	----	Daily	24-Hr. Total
TOC	-	-	-	Report	110	mg/l	1 x Weekly[2]	Grab
Oil & Grease	-	-	-	Report	15	mg/l	1 x Weekly[2]	Grab

Table 003/004-2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	1 x Weekly[2]	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Standards.

[2] The permittee shall sample TOC, Oil & Grease, and pH during the first discharge of each week. If there is no discharge during any particular week, then the permittee shall report No Discharge for that week on the monthly DMR.

[3] The Storm Water Pollution Prevention Plan (SWP3) requirements can be found in Part I.D. and I.E. of this permit.

[4] The weekly sampling period is from Monday through Sunday.

B. NARRATIVE WATER QUALITY STANDARDS

1. In accordance with 327 IAC 2-1.5-8, all waters at all times and at all places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil, or scum attributable to the discharge that do any of the following:

   a. That will settle to form putrescent or otherwise objectionable deposits;

b. That are in amounts sufficient to be unsightly or deleterious;

c. That produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

d. Which are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans

e. Which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

2. At all times, all waters outside the mixing zone shall be free of substances in concentrations which on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

Comment [h3]: Should be section C

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1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge.

2. Discharge Monitoring Reports

a. For parameters with monthly average water quality based effluent limitations (WQBELs) below the LOQ, daily effluent values that are less than the limit of quantitation (LOQ) may be assigned a value of zero (0).

b. For all other parameters for which the monthly average WQBEL is equal to or greater than the LOQ, calculations that require averaging of measurements of daily values (both concentration and mass) shall use an arithmetic mean. When a daily discharge value is below the LOQ, a value of zero (0) shall be used for that value in the calculation to determine the monthly average unless otherwise specified or approved by the Commissioner.

c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.

d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.

e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.

f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous month which shall be postmarked no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective.

The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit.

3. Definitions

a. Monthly Average

(1) Mass Basis - The "monthly average" discharge means the total mass discharge during a calendar month divided by the number of days in the month that the production or commercial facility was discharging. Where less than daily samples is required by this permit, the monthly average discharge shall be determined by the summation of the measured daily mass discharges divided by the number of days during the calendar month when the measurements were made.

(2) Concentration Basis - The "monthly average" concentration means the arithmetic average of all daily determinations of concentration made during a calendar month. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Daily Discharge"

(1) Mass Basis – The "daily discharge" means the total mass discharge by weight during any calendar day.

(2) Concentration Basis – The "daily discharge" means the average concentration over the calendar day or any twenty-four (24) hour period that reasonably represents the calendar day for the purposes of sampling.

c. "Daily Maximum"

(1) Mass Basis – The "daily maximum" means the maximum daily discharge mass value for any calendar day.

(2) Concentration Basis – The "daily maximum" means the maximum daily discharge value for any calendar day.

(3) Temperature Basis – The "daily maximum" means the highest temperature value measured for any calendar day.

d. A 24-hour composite sample consists of at least twenty four (24) individual aliquots of wastewater by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis

e. Concentration -The weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

f. The "Regional Administrator" is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.

h. "Limit of Detection or LOD" means a measurement of the concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix. The LOD is equivalent to the method detection level or MDL.

i. "Limit of Quantitation or LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit quantification or quantification level.

j. "Method Detection Level or MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

k. "Toxic Unit–Acute (TU_a)" is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

l. "Inhibition concentration 25" or "IC_{25}" means the toxicant concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant that would cause a twenty-five percent (25%) reduction in mean young per female or in growth for the test population.

m. "Toxic Unit–Chronic (TU_c)" is defined as 100/NOEC or 100/LC_{25}.

n. "No Observed Effect Concentration (NOEC)" is the highest tested concentration of an effluent or test sample whose effect is not different from the control effect, according to the statistical test used. The NOEC is usually the highest tested concentration of an effluent or toxic that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls).

4. Test Procedure

The analytical and sampling methods used shall conform to the current version of 40 CFR 136. Multiple editions of Standard Methods for the Examination of Water and Wastewater are currently approved for most methods, however, 40 CFR Part 136 should be checked to ascertain if a particular method is approved for a particular analyte. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency.

a. Standard Methods for the Examination of Water and Wastewater
18^{th}, 19^{th}, or 20^{th} Editions, 1992, 1995, or 1998, American Public Health Association, Washington, D.C. 20005.

b. A.S.T.M. Standards, Parts 23, Water; Atmosphere Analysis
1972 American Society for Testing and Materials, Philadelphia, PA 19103.

c. Methods for Chemical Analysis of Water and Wastes
June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The person(s) who performed the sampling or measurements;

c. The dates the analyses were performed;

d The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of all required analyses and measurements.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant listed in Part I.A at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. STORM WATER MONITORING AND NON-NUMERIC EFFLUENT LIMITS

Within twelve (12) months of the effective date of this permit BP Products North America shall implement the non-numeric permit conditions in this Section of the permit for the J&L and Lake George areas as it relates to storm water associated with industrial activity from Outfalls 003 and 004. Notwithstanding any other provision of this permit, the Storm Water Monitoring and Non-Numeric Effluent Limits and SWP3 are not required to address storm water discharges that are routed to treatment and discharged through outfall 005.

1.

2. Control Measures

Deleted: entire site

Deleted: regardless which outfall the storm water is discharged from.

Deleted: Control Measures and Effluent Limits¶
¶
In the technology-based limits included in Part D.2-4., the term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part D.3 to meet the non-numeric effluent limits in Part D.4. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer's specifications. Any deviation from the manufacturer's specifications shall be documented. BP's existing control measures, which allow retention of stormwater in tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if necessary should be sufficient to satisfy the storm water monitoring and non-numeric effluent limits. However, if the existing control measures are not achieving their intended effect in minimizing pollutant discharges, the control measures must be modified as expeditiously as practicable.

3.

4. Technology-Based Effluent Limits (BPT/BAT/BCT): Non-Numeric Effluent Limits

a. Minimize Exposure

BP's existing control measures, which allow retention of stormwater in tank dikes for infiltration and evaporation, or removal via vacuum trucks or manual pumping to the refinery process sewer system if necessary should be sufficient to satisfy the storm water monitoring and non-numeric effluent limits. However, if existing control measures are not meeting the non-numeric effluent limits, additional control measures should be developed as appropriate for control of stormwater discharged from tank storage areas:

Note: Industrial materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged to receiving waters.

Notwithstanding any other provision of this permit, the non-numeric effluent limits described here are not required to address storm water discharges that are routed to treatment and discharged through Outfall 005.

c. Maintenance

Maintain all control measures which are used to achieve the effluent limits required by this permit in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If control measures need to be replaced or repaired, make the necessary repairs or modifications as expeditiously as practicable.

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Deleted: Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility.

Deleted: Control Measure Selection and Design Considerations¶
¶
When selecting and designing control measures consider the ¶
following:¶
¶
a. preventing stormwater from coming into contact with ¶
polluting materials is generally more effective, and cost-¶
effective, than trying to remove pollutants from ¶
stormwater;¶
¶
b. use of control measures in combination is more effective ¶
than use of control measures in isolation for minimizing ¶
pollutants in stormwater discharge; ¶
¶
c. assessing the type and quantity of pollutants, including ¶
their potential to impact receiving water quality, is critical ¶
to designing effective control measures that will achieve ¶
the limits in this permit;¶
¶
d. minimizing impervious areas at your facility and ¶
infiltrating runoff onsite (including bioretention cells, ¶
green roofs, and pervious pavement, among other ¶ ... [1]

Deleted: Minimize the exposure of raw, final, or waste materials to ¶
rain, snow, snowmelt, and runoff. To the extent ¶
technologically available and economically practicable and ¶
achievable, either locate industrial materials and activities ¶
inside or protect them with storm resistant coverings in ¶
order to minimize exposure to rain, snow, snowmelt, and ¶
runoff (although significant enlarg ... [2]

Deleted: b. Good Housekeeping¶
¶
Keep clean all exposed areas that are potential sources of ¶
pollutants, using such measures as sweeping at regular ¶
intervals, keeping materials orderly and labeled, and ¶
stowing materials in appropriate containers. ¶
¶
As part of the developed good housekeeping program, include a ... [3]

h. Waste, Garbage, and Floatable Debris

Ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.

i. Employee Training

Train all employees who work in areas where industrial material or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team. Training must cover the specific control measures used to achieve the effluent limits in this part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit.

j. Non-Stormwater Discharges

You must determine if any non-stormwater discharges not authorized by an NPDES permit exist. Any non-stormwater discharges discovered must either be eliminated or modified and included in this permit.

The following non-stormwater discharges are authorized and should be documented when they occur in accordance with Part I.E.2.c. of the permit:

Discharges from fire-fighting activities;
Fire Hydrant flushings;
Potable water, including water line flushings;
Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
Irrigation drainage;
Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
Pavement wash water where no detergents are used and no spills or leaks of toxic or hazardous material have occurred (unless all spilled material has been removed);
Routine external building washdown that does not use detergents;
Uncontaminated ground water or spring water;

k. Dust Generation and Vehicle Tracking of Industrial Materials

Deleted: d. Spill Prevention and Response Procedures¶
¶
You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, you must implement:¶
¶
(1) Procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;¶
¶
(2) Preventive measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;¶
¶
(3) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect or respond to a spill or lead must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your storm water pollution prevention team: ¶ ... [4]

Deleted: e. Erosion and Sediment Controls¶
¶
Through the use of structural and/or non-structural control measures stabilize, and contain runoff from, exposed areas to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions to meet this limit, place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or ... [5]

Deleted: f. Management of Runoff¶
¶
Divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the discharge. ¶

Deleted: g. Salt Storage Piles or Piles Containing Salt¶
¶
Enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or cove ... [6]

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You must minimize generation of dust and off-site tracking of raw, final, or waste materials.

5. Annual Review

At least once per calendar year, you must review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limitations in this permit. You must document the results of your review in a report that shall be retained within the SWPPP. You must also submit the report to the Industrial NPDES Permit Section on an annual basis.

E. STORM WATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 12 months from the effective date of this permit, the permittee is required to revise and update the current Storm Water Pollution Prevention Plan (SWP3) for storm water outfalls 003 and 004 for the permitted facility. The plan shall at a minimum include the following:

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. Storm water associated with industrial activity (defined in 40 CFR 122.26(b)(14)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;

b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to storm water; and

c. Assure compliance with the terms and conditions of this permit.

d. Not withstanding any other provision of this permit, the SWP3 is not required to address stormwater that is routed to treatment and then discharged through Outfall 005.

2. Contents

The plan shall include, at a minimum, the following items:

a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan (SWP3) and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each storm water pollution prevention team member. Each member of the stormwater

Comment [h4]: Should read on an annual basis or at least annually, or annually or once per calendar year or no less than once per year etc. This can be done during the Annual Comprehensive Site Compliance Evaluation..

Deleted: every 12 months

Deleted: 6. Corrective Actions – Conditions Requiring Review¶
¶
a. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated:¶
¶
(1) an unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this NPDES permit) occurs at this facility;¶
¶
(2) it is determined that your control measures are not stringent enough for the discharge to meet applicable water quality standards;¶
¶
(3) it is determined in your routine facility inspection, an inspection by EPA or IDEM, comprehensive site evaluation, or the Annual Review required in Part D.5 that modifications to the control measures are necessary to meet the effluent limits in this permit or that your control measures are not being properly operated and maintained; or¶
¶
(4) Upon written notice by the Commissioner that the control measures prove to be ineffective in controlling pollutants in storm water discharges exposed to industrial activity.¶
¶
b. If any of the following conditions occur, you must review ¶
and revise the selection, design, installation, and ¶
implementation of your control measures to determine if ¶
modifications are necessary to meet the effluent limits in this permit:¶
¶
(1) construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharge.¶
¶
7. Corrective Action Deadlines¶
¶
You must document your discovery of any of the conditions listed in Part I.D.6 within thirty (30) days of making such discovery. Subsequently, within one-hundred and twenty (120) days of such discovery, you must document an ... [7]

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pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for storm water to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:

(1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.

(2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which contains a legend and compass coordinates, indicating, at a minimum, the following:

(A) All on-site storm water drainage and discharge conveyances, which may include pipes, ditches, swales, and erosion channels, related to a storm water discharge.

(B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.

(C) All on-site and known adjacent property water bodies, including wetlands and springs.

(D) An outline of the drainage area for each outfall.

(E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.

(F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.

(G) On-site injection wells, as applicable.

(H) On-site wells used as potable water sources, as applicable.

(I) All existing major structural control measures to reduce pollutants in storm water run-off.

(J) All existing and historical underground or aboveground storage tank locations, as applicable.

(K) All permanently designated plowed or dumped snow

storage locations.

(L) All loading and unloading areas for solid and liquid bulk materials.

(M) All existing and historical outdoor storage areas for raw materials, intermediary products, final products, and waste materials. Include materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities.

(N) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized materials, for example, in drums and totes.

(O) Outdoor processing areas.

(P) Dust or particulate generating process areas.

(Q) Outdoor assigned waste storage or disposal areas.

(R) Pesticide or herbicide application areas.

(S) Vehicular access roads.

(T) Identify any storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operation, etc., and could result in a discharge of pollutants.

(U) The mapping of historical locations is only required if the historical locations have a reasonable potential for stormwater exposure to historical pollutants.

(3) An area site map that indicates:

(A) The topographic relief or similar elevations to determine surface drainage patterns;

(B) The facility boundaries;

(C) All receiving waters; and

(D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate stormwater discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J) through (T) of this Part, and any other areas thought to generate storm water discharges exposed to industrial activity. The narrative descriptions for each identified area must include the following:

(A) Type and typical quantity of materials present in the area.

(B) Methods of storage, including presence of any secondary containment measures.

(C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of storm water to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.

(D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their reportable quantity, including the following:

i. The date and type of material released or spilled.

ii. The estimated volume released or spilled.

iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to storm water. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

(E) Where the chemicals or materials have the potential to be exposed to storm water discharges, the descriptions

for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

i. Toxicity data of chemicals or materials used within the area, referencing appropriate material safety data sheet information locations.

ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.

iii. Potential ways in which storm water discharges may be exposed to listed chemicals and materials.

iv. The likelihood of the listed chemicals and materials to come into contact with water.

(5) A narrative description of existing and planned management practices and measures to improve the quality of storm water run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(J) through (T) and any other areas thought to generate storm water discharges exposed to industrial activity. The description must include the following:

(A) Any existing or planned structural and nonstructural control practices and measures.

(B) Any treatment the storm water receives prior to leaving the facility property or entering a water of the state.

(C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.

(6) Describe areas that due to topography, activities, or other factors have a high potential for significant soil erosion.

(7) Document the location of any storage piles containing salt used for deicing.

(8) Information or other documentation required under subsection (d) of this plan.

(9) The results of stormwater monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWP3, the on-site location for storage of the information must be reference in the SWP3.

c. Non-Stormwater Discharges – You must document that you have evaluated for the presence of non-storm water discharges not authorized by an NPDES permit. Any non-stormwater discharges have either been eliminated or incorporated into this permit. Documentation of non-storm water discharges shall include:

(1) A written non-storm water assessment, including the following:

(A) A certification letter stating that storm water discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-stormwater contributions.

(B) Detergent or solvent-based washing of equipment or vehicles that would allow washwater additives to enter any storm water only drainage system shall not be allowed at this facility unless appropriately permitted under this NPDES permit.

(C) All interior maintenance area floor drains with the potential for maintenance fluids or other materials to enter stormwater only storm sewers must be either sealed, connected to a sanitary sewer with prior authorization, or appropriately permitted under this NPDES permit. The sealing, sanitary sewer connecting, or permitting of drains under this item must be documented in the written non-storm water assessment program.

(D) The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during the test.

d. General Requirements – The SWP3 must meet the following general requirements:

(1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding storm water control/treatment and monitoring, pollutant fate and transport, and drainage planning.

(2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request. IDEM may provide access to portions of your SWP3 to the public.

(3) The plan must be revised and updated as required. Revised and updated versions of the plan must be implemented within one year from the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.

Deleted: on or before three hundred sixty-five (365) days

(4) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWP3, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWP3 to meet those section requirements.

(5) The permittee may combine the requirements of the SWP3 with another written plan if:

(A) The plan is retained at the facility and available for review;

(B) All the requirements of the SWP3 are contained within the plan; and

(C) A separate, labeled section is utilized in the plan for the SWP3 requirements.

F. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

   a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. controls any pollutant not limited in the permit.

2. to incorporate any of the reopening clause provisions cited at 327 IAC 5-2-16.

3. This permit may be modified, or, alternately, revoked and reissued, to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act, if the standards, regulations and requirements so issued or approved contains different conditions than those in this permit.

4. If a treatment technology for the removal of mercury from wastewater is identified and is determined by IDEM to be available and economically viable,

then BP must install and fully operate that treatment technology as soon as possible. Within 6 months after IDEM's determination or the final disposition of any appeal of such determination, whichever is later, BP shall submit a schedule, subject to IDEM approval, for the installation and operation of the identified treatment technology that is as expeditious as possible. Any such determination shall be considered final agency action, which BP may appeal. Upon completion of 12 months of operation, IDEM should modify the permit in accordance with 327 IAC 5-3.5-8 to revise the effective effluent limits for mercury at Outfall 005.

5. One year after the Sulfur recovery Unit (SRU) Beavon Stretford Solution blowdown (vanadium-based technology) has been replaced with non-vanadium based Shell Claus Off-gas Treatment (SCOT), the permittee may request, in writing, a review of the effluent limits and monitoring requirements for Total Vanadium at Outfall 005.

Comment [h5]: typo
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G. CHRONIC BIOMONITORING PROGRAM REQUIREMENTS

The 1977 Clean Water Act explicitly states, in Section 101(3) that it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited. In support of this policy the U.S. EPA in 1995 amended 40 CFR 136.3 (Tables IA and II) by adding testing method for measuring acute and short-term chronic toxicity of whole effluents and receiving waters. To adequately assess the character of the effluent, and the effects of the effluent on aquatic life, the permittee shall conduct Whole Effluent Toxicity Testing. Part 1 of this section describes the testing procedures, Part 2 describes the Toxicity Reduction Evaluation (TRE) which is only required if the effluent demonstrated toxicity, as described in section 1.f.

1. Whole Effluent Toxicity Tests

The permittee shall continue with their current schedule of the series of bioassay tests described below to monitor the toxicity of the discharge from Outfall 005. If toxicity is demonstrated as defined under section f. below, the permittee is required to conduct a toxicity reduction evaluation (TRE).

a. Bioassay Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used shall be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms; Fourth Edition Section 13, Cladoceran (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0; and Section 11, Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test Method, (1000.0) EPA 821-R-02-013, October 2002, or most recent update.

(2) Any circumstances not covered by the above methods, or that required deviation from the specified methods shall first be approved by the IDEM's Permit Branch.

(3) The determination of effluent toxicity shall be made in accordance with the Data Analysis general procedures for chronic toxicity endpoints as outlined in Section 9, and in Sections 11 and 13 of the respective Test Method (1000.0 and 1002.0) of Short-term Methods of Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms (EPA-821-R-02-013), Fourth Edition, October 2002, or most recent update.

b. Types of Bioassay Tests

(1) The permittee shall conduct 7-day Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test and a 7-day Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test on samples of final effluent. All tests will be conducted on 24-hour composite samples of final effluent. All test solutions shall be renewed daily. On days three and five fresh 24-hour composite samples of the effluent collected on alternate days shall be used to renew the test solutions.

(2) If, in any control, more than 10% of the test organisms die in 96 hours, or more than 20% of the test organisms die in 7 days, that test shall be repeated. In addition, if in the *Ceriodaphnia* test control the number of newborns produced per surviving female is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow test if the mean dry weight of 7-day old surviving fish in the control group is less than 0.25 mg, that test shall also be repeated. Such testing will determine whether the effluent affects the survival, reproduction, and/or growth of the test organisms. Results of all tests regardless of completion must be reported to IDEM.

c. Effluent Sample Collection and Chemical Analysis

(1) Samples taken for the purposes of Whole Effluent Toxicity Testing will be taken at a point that is representative of the discharge, but prior to discharge. The maximum holding time for whole effluent is 36 hours for a 24 hour composite sample from the time of last aliquot. Bioassay tests must be started within 36 hours after termination of the 24 hour composite sample collection. Bioassay of effluent sampling may be coordinated with other permit sampling requirements as appropriate to avoid duplication.

(2) Chemical analysis must accompany each effluent sample taken for bioassay test, especially the sample taken for the repeat or confirmation test as outlined in section f.3. below. The analysis detailed under Part I.A. should be conducted for the effluent sample. Chemical analysis must comply with approved EPA test methods.

d. Testing Frequency and Duration

The chronic toxicity test specified in paragraph b. above shall be conducted at least once every six months for the duration of the permit. After three tests have been completed that indicate no toxicity as defined in paragraph f., the permittee may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent. In the absence of toxicity with either species in the monthly testing for three (3) months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past. If toxicity is demonstrated as defined under paragraph f., the permittee is required to conduct a toxicity reduction evaluation (TRE) as specified in Part 2 of this section.

e. Reporting

(1) Results shall be reported according to EPA 821-R-02-013, Section 10 (Report Preparation). Two copies of the completed report for each test shall be submitted to the Data Management Section of IDEM no later than sixty days after completion of the test.

(2) For quality control, the report shall include the results of appropriate standard reference toxic pollutant tests for chronic endpoints and historical reference toxic pollutant data with mean values and appropriate ranges for the respective test species Pimephales promelas and *Ceriodaphnia dubia*. Biomonitoring reports must also include copies of Chain-of-Custody Records and Laboratory raw data sheets.

(3) Statistical procedures used to analyze and interpret toxicity data including critical values of significance used to evaluate each point of toxicity should be described and included as part of the biomonitoring report.

f. Demonstration of Toxicity

(1) Acute toxicity will be demonstrated if the effluent is observed to have exceeded 11.0 TU_a (acute toxic units) based on 100% effluent for the test organism in 48 and 96 hours for *Ceriodaphnia dubia* or *Pimephales promelas*, respectively.

TU_a is defined as $100/LC_{50}$.

(2) Chronic toxicity will be demonstrated if the effluent is observed to have exceeded 38.0 TU_c (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas.*

(3) If toxicity is found in any of the tests as specified above, a confirmation toxicity test using the specified methodology and same test species shall be conducted within two weeks of the completion of the failed test to confirm results. During the sampling for any confirmation test, the permittee shall also collect and preserve sufficient effluent samples for use in a Toxicity Identification Evaluation (TIE) and/or a Toxicity Reduction Evaluation (TRE), if necessary. If any two (2) consecutive tests, including any and all confirmation tests, indicate the presence of toxicity, the permittee must begin the implementation of a Toxicity Reduction Evaluation (TRE) as described below. The whole effluent toxicity tests required above may be suspended (upon approval from IDEM) while the TRE is being conducted.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE (including any post-TRE biomonitoring requirements) is only required if toxicity is demonstrated as defined in Part 1, section f. above.

a. Development of TRE Plan

Within 90 days of determination of toxicity, the permittee shall submit plans for an effluent toxicity reduction evaluation (TRE) to the Compliance Data Section, Office of Water Quality of the IDEM. The TRE plan shall include appropriate measures to characterize the causative toxicants and the variability associated with these compounds. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications list below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characteristics Procedures, Second Edition (EPA/600/6-91/003, February 1991.

Phase II Toxicity Identification Procedures (EPA 600/R-92/080), September 1993.

Phase III Toxicity Confirmation Procedures (EPA 600/R-92/081), September 1993.

(2) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase l. EPA/600/6-91/005F, May 1992.

(3) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), (EPA/600/2-88/070), April 1989.

(4) Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatments Plants (EPA/833-B-99-022) August 1999.

b. Conduct the Plan

Within 30 days after the submission of the TRE plan to IDEM, the permittee must initiate an effluent TRE consistent with the TRE plan. Progress reports shall be submitted every 90 days to the Compliance Data Section, Office of Water Quality of the IDEM beginning 90 days after initiation of the TRE study.

c. Reporting

Within 90 days of the TRE study completion, the permittee shall submit to the Compliance Data Section, Office of Water Quality of the IDEM, the final study results and a schedule for reducing the toxicity to acceptable levels through control of the toxicant source or treatment of whole effluent.

d. Compliance Date

The permittee shall complete items a, b, and c from Section 2 above and reduce the toxicity to acceptable levels as soon as possible, but no later than three years after the date of determination of toxicity.

e. Post-TRE Biomonitoring Requirements (Only Required After Completion of a TRE)

After the TRE, the permittee shall conduct monthly toxicity tests with 2 or more species for a period of three months. Should three consecutive monthly tests demonstrate no toxicity, the permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent, (see section 1.d. above for more specifics on this topic), and conduct chronic tests quarterly for the duration of the permit.

If toxicity is demonstrated, as defined in paragraph 1.f. above, after the initial three month period, testing must revert to a TRE as described in Part 2 (TRE) above.

H. DIFFUSER MONITORING REQUIREMENTS

1. Biological Survey

a. During the first, third and fifth year of the permit, BP Products North America shall conduct a survey of the aquatic life found within a 200

feet radius of the diffuser. The results of this survey shall be submitted to IDEM's Office of Water Management, Industrial NPDES Permits Section.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all conditions of this permit in accordance with 327 IAC 5-2-8(1). Any permit noncompliance constitutes a violation of the Clean Water Act, and the Environmental Management Act, and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Penalties for Violations of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Water Pollution Control Board is liable for a civil penalty not to exceed twenty-five thousand dollars ($25,000) per day of any violation. Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation commits a class C infraction.

Pursuant to IC 13-30-6, a person who intentionally, knowingly, or recklessly violates any provision of this permit, the water pollution control laws or a rule or standard adopted by the Water Pollution Control Board commits a class D felony punishable by the term of imprisonment established under IC 35-50-2-7(a) (up to one year), and/or by fine of not less than five thousand dollars ($5,000) and not more than fifty thousand dollars ($50,000) per day of violation. A person convicted for a violation committed after a first conviction of such person under this provision is subject to a fine of not more than one hundred thousand ($100,000) per day of violation, or by imprisonment for not more than two (2) years, or both.

3. Duty to Mitigate

Pursuant to 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Permit Modification, Revocation, and Reissuance, and Termination

In accordance with 327 IAC 5-2-8(4)and 327 IAC 5-2-16(b), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

a. Violation of any term or condition of this permit;

b. Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts by the permittee in the application or during the permit issuance process; or

c. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by this permit.

The filing of a request by the permittee for a permit modification, revocation, and reissuance, or termination, or any information specified in Part II.A.5 of this permit does not stay or suspend any permit term or condition.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility including, Ineos and Praxair that:

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(1) could significantly change the nature of, or increase the quantity of, pollutants discharged; or

(2) the commissioner may request to evaluate whether such cause exists.

5. Duty to Provide Information Requested by the Commissioner

Pursuant to 40 CFR 122.41(h), the permittee shall furnish to the Commissioner, within reasonable time, any information which the Commissioner may request to determine compliance with this permit. Pursuant to 327 IAC 5-1-3, the permittee shall furnish to the Commissioner any reports or data necessary to carry out the provisions of 327 IAC 5 in such a manner as the Commissioner may reasonably prescribe.

6. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days in advance of the expiration date of this permit. The Commissioner may grant permission to submit an application less than 180 days in advance of the expiration date of this permit but no later than the permit expiration date.

7. Permit Transfer

In accordance with 327 IAC 5-2-6(c), this permit may be transferred to another person by the permit, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

a. The current permittee notified the commissioner at least thirty (30) days in advanced of the proposed transfer date.

b. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgement that the existing permittee is liable for violations up to the date, and that the transferee is liable for violations from that date on) is submitted to the commissioner.

c. The transferee certifies in writing to the commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the commissioner may allow a temporary transfer of the permit without the permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility.

d. The commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

8. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants injurious to human health are effective and must be compiled with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

9. Operator Certification

The permittee shall have the wastewater treatment facilities under supervision of an operator certified by the Commissioner as required by IC 13-18-11 and 327 IAC 5-22.

10. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

11. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal actions or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any application state law or regulation under authority preserved by Section 510 of the Clean Water Act.

12. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property right of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or an invasion of rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

13. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstances is held invalid, the application or such provision to other circumstances and the remainder of this permit shall not be affected thereby if such provisions can be given effect without the invalid provision or application.

14. Inspection and Entry

Pursuant to 327 IAC 5-2-8(7), the permittee shall allow the Commissioner, or an authorized representative (including an authorized contractor acting as a representative of the commissioner), upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a point source is located, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect, at reasonable times:

(1) any monitoring equipment or method;

(2) any collection, treatment, pollution management, or discharge facilities; or

(3) practices required or otherwise regulated under the permit.

d. Sample or monitor at reasonable time, any discharge of pollutants or internal wastestream (where necessary to ascertain the nature of a discharge of pollutants) for the purpose of evaluating compliance with this permit or as otherwise authorized.

15. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

The notice and design summary shall be sent to the Office of Water Quality - Mail Code 65-42, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

16. New or Increased Discharge of Pollutants

This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC into Lake George Channel of the Indiana Harbor Ship Canal unless one of the following is completed prior to the commencement of the action:

a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.

b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6.

17. New or Increased Discharge of Pollutants into Lake Michigan

This permit prohibits the permittee from undertaking any action that would result in the following in Lake Michigan:

a. A new or increased discharge of a bioaccumulative chemical of concern (BCC), other than mercury that causes a significant lowering of water quality.

b. A new or increased discharge of mercury or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

(1) Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the permittee to do the following:

(i) Submit an antidegradation demonstration in accordance with 327 IAC 2-1.3-5; and
(ii) Implement or fund a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

(2) An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6 and the permittee implements or funds a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(8).

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(11):

a. Terms as defined in 327 IAC 5-2-8(11)(A):

(1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. The permittee may allow a bypass to occur that does not exceed any effluent limitations contained in this permit, but only if it is essential maintenance to assure efficient operation. The permittee is not required to notify the Commissioner about bypasses that meet this definition. This provision will be strictly construed. These bypasses are not subject to the provisions of Part II.B.2.d and e of this permit.

c. Bypasses, as defined in (a) above, are prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, as defined above;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submitted notices as required under Part II.B.2.e; or

(4) The condition under Part II.B.2.b above is met.

d. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1.

e. The permittee must provide the Commissioner with the following notice:

(1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

(2) The permittee shall orally report an unanticipated bypass that exceeds any limitations in the permit within 24 hours of becoming aware of the bypass noncompliance. The permittee must also provide a written report within five (5) days of the time the permittee becomes aware of the bypass noncompliance. The written report must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the bypass event.

f. The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.c. The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(12):

a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.

c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:

(1) An upset occurred and the permittee has identified the specific cause(s) of the upset if possible,

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(2) The permitted facility was at the time being operated in compliance with proper operation and maintenance procedures; and

(3) The permittee complied with any remedial measures required under Part II.A.3;

(4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable.

d. In accordance with 40 CFR 122.41(n)(4), In any enforcement proceedings the permittee seeking to establish the occurrence of an upset has the burden of proof.

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(10)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned alterations or additions to the facility. In this context, permit facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as outlined in 327 IAC 5-1.5.

b. The alteration or addition could significantly change the nature of, or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject either to effluent limitations in Part I.A. or to notification requirements in Part II.C.9. of this permit.

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Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(9)and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Discharge Monitoring Reports", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(10)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the non-complying circumstances;

c. Any upset that causes an exceedance of any effluent limitation in the permit;

d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants: Phenolics, Total Chromium and Hexavalent Chromium.

The permittee can make the oral reports by calling (317)232-8670 during regular business hours or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively the permittee may submit a "Bypass Fax Report" or a "Noncompliance Notification Report", whichever is appropriate, to IDEM at (317) 232-8637. If a complete fax submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the fax report will satisfy both the oral and written reporting requirements.

4. Other Noncompliance

Pursuant to 327 IAC 5-2-8(10)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3;

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Emergency Repairs or Replacements to the Diffuser System

The permittee shall provide at least 10-day advance written notice to IDEM if it anticipates the need to discharge from Outfall 001 due to the need to perform emergency repairs or replacements to the diffuser system to Outfall 005.

6. Other Information

Pursuant to 327 IAC 5-2-8(10)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

7. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(14):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a responsible corporate officer defined as a president, secretary, treasurer, any vice-president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation or the manager of one or more manufacturing, production or operating facilities employing more than two hundred fifty (250) persons or having the gross annual sales or expenditures exceeding twenty-five million dollars ($25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a Federal, State, or local government body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The authorization is submitted to the Commissioner.

c. Certification. Any person signing a document identified under Part II.C.7., shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering in the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

8. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

9. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(14) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

10. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur which would result in the discharge of any pollutant identified as toxic, pursuant to Section 307(a) of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."

(1) One hundred micrograms per liter (100µg/l);

(2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitophenol; and one milligram per liter (1mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).

b. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant which was not reported in the permit application under 40 CFR 122.21(g)(9). However, this requirement does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

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This will ensure that the permit is consistent with IAC 5-2-9(2).

PART III
Additional Requirements

A. Thermal Effluent Requirements

Based on a favorable thermal demonstration study submitted by BP Products North America on June 19, 2012, the alternate thermal effluent limitations of 1.7×10^9 BTUs/Hour are being approved for continued use at Outfall 002.

B. Intake Structures

The 316(b) study for this facility was approved by the U.S. EPA in June of 1975. BP Whiting Business Unit (WBU) provided IDEM a description of the CWIS dated 29 August 2012 to conduct a best professional judgment (BPJ) evaluation of the CWIS to establish that the CWIS is equivalent to the best technology available (BTA).

Based on available information; IDEM has made a Best Technology Available (BTA) determination that the existing cooling water intake structures represent best technology available to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326) at this time.

This determination is based on Best Professional Judgment (BPJ) and will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). IDEM recognizes that, for reassessment of its BTA determination during the next permit renewal, the permittee shall comply with the following requirements:

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1. At all times properly operate and maintain the cooling water intake structure equipment.

2. The permittee shall submit a fish impingement and mortality minimization alternatives evaluation within 24 months of the effective date of this permit to IDEM for review. The fish mortality minimization alternatives evaluation shall include the feasibility of installing a fish return to Lake Michigan.

3. If an implementation of any operational change or facility modification is required by 316(b) or IDEM, the permittee shall provide an implementation plan to IDEM for review and approval within 18 months of submission of the alternatives evaluation.

4. Inform IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

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5. Submit all required reports to the IDEM, Office of Water Quality, Permits Branch

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C. Intake Water Interruption

In the event that the intake water supply is interrupted and to prevent equipment damage or plant shutdown, firewater or recycle (treated process) water may be substituted for non-contact cooling purposes until the cause of the interruption can be expeditiously corrected. The permittee shall notify the IDEM, Office of Water Quality, Compliance Evaluation Section upon such occurrence and its expected duration.

Part IV
Streamlined Mercury Variance

A. Term of SMV

The SMV and the interim discharge limitations in Part I.A.1, will remain in effect until the NPDES permit expires under IC 13-14-8-9. Pursuant to IC 13-14-8-9(d), when the NPDES permit is extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

B. Annual Reports

The permittee shall submit an annual report to IDEM that describes the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report must also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP may be submitted as part of the annual report. Submittal of the annual report will be due on April 1 of each year. Annual Reports should be submitted to the Office of Water Quality, Mail Code 65-42, Industrial Permits Section, 100 North Senate Avenue, Indianapolis, Indiana 46204 2251.

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C. SMV Renewal

As authorized under 327 IAC 5-3.5-7(a)(1), the permittee may apply for the renewal of an SMV not less than 180 days prior to the expiration of the NPDES permit. In accordance with 327 IAC 5-3.5-7(c), an application for renewal of the SMV must contain the following:

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- All information required for an initial SMV application under 327 IAC 5-3.5-4, including revisions to the PMPP, if applicable.
- A report on implementation of each provision of the PMPP.
- An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the NPDES permit for the two (2) year period prior to the SMV renewal application.

- A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the department according to 327 IAC 5-3.5-8(b) based on the most recent two (2) years of representative sampling information from the facility.

Renewal of the SMV is subject to a demonstration showing that PMPP implementation has achieved progress toward the goal of reducing mercury from the discharge.

D. Pollutant Minimization Program Plan (PMPP) and Interim Effluent Limit

The PMPP is a requirement of the SMV application and is defined in 327 IAC 5-3.5-3(4) as the plan for development and implementation of Pollutant Minimization Program (PMP). The PMPP is defined in 327 IAC 5-3.5-3(3) as the program developed by an SMV applicant to identify and minimize the discharge of mercury into the environment. PMPP requirements (including the enforceable parts of the PMPP) are outlined in 327 IAC 5-3.5-9. In accordance with 327 IAC 5-3.5-6, the permittee's PMPP is appended with this Attachment.

The following PMPP developed by BP Products North America, LLC in accordance with 327 IAC 5-3.5-9 of the Streamlined Mercury Variance Rule is hereby incorporated into this permit as follows:

1. a. BP will begin operation of such pilot demonstration unit of similar size as the Purdue/Argonne pilot within eighteen (18) months of the NPDES permit modification incorporating the SMV (August 17, 2013).

   b. Complete the pilot demonstration and submit a final report to IDEM within thirty-six (36) months of the NPDES permit modification incorporating the SMV (February 17, 2015).

   The pilot demonstration evaluation will include at least the following: performance under varying weather and process conditions, evaluation of options for waste streams, and reliability, operability, and feasibility. The report to IDEM shall summarize the results of the pilot demonstration, including reliability and feasibility of the piloted mercury removal technology, and recommendations for the next phase of review.

2. Within 18 months from the start up of the Brine Treatment Unit and Final Filters, BP will complete an evaluation of the mercury reduction of the new Brine Treatment unit and final filters being installed at the Whiting Refinery and submit a final report to IDEM. The evaluation will include at least the following: performance under varying weather and process conditions, evaluation of option for waste streams, and reliability, operability and feasibility. The report to IDEM shall summarize the results of the evaluation, including reliability and feasibility of the mercury removal, and recommendation for the next phase of the review

6. Within 18 months from the effective date of the permit modification to incorporate the SMV requirements (August 17, 2013), BP will complete the review and identification of mercury containing chemicals or additives that are

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¶
4. Within 12 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2013), BP will educate all BP Whiting Refinery personnel about the mercury related purchasing policies, recycling practices, proper handling and disposal techniques, spill containment procedures, and other pollution prevention measures designed to reduce the potential for mercury to enter the wastewater treatment plant. BP will develop a computer-based training module or Virtual Training Administrator (VTA) or other training methods as appropriate for the training of personnel.¶
¶
5. Within 12 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2013), BP will review the current recycling program for opportunities and improvements for the mercury containing equipment and update the practices and procedures to incorporate these opportunities as needed and as feasible.¶

used in the operations and processes which have the potential risk of entering the process wastewater sewer system.

7. Within 18 months from the effective date of the permit modification to incorporate the SMV requirements (August 17, 2013), BP will compile a complete inventory of all equipment containing mercury that have the potential risk of charging mercury to the process wastewater sewer system, including the estimated mercury content from the vendor and supplier information as well as location of such equipment.

8. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will perform an assessment of the mercury content of the sediment in the main process sewer legs that are part of the current sewer cleaning program.

9. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will complete an assessment of identified process unit wastewater discharges from sources within the refinery that may contain mercury at detection levels utilizing process knowledge, previous analysis or with new analysis if warranted.

10. Within 24 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2014), BP will develop a prioritized schedule for the cleaning of the sewers incorporating any significant impacts found from the results of the sewer system characterization study. The sediment and mercury removal progress will be reported in the annual reports.

11. Within 36 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2015), BP will complete the detailed inventory list of process chemicals or additives containing mercury, equipment containing mercury and process discharges that contain mercury

12. Within 36 months from the effective date of the permit modification to incorporate the SMV requirements (February 17, 2015), BP will develop a procedure utilizing a ranking method to identify the high-risk equipment and process chemicals for mercury exposure and alternatives that are feasible for their replacement. Then mercury containing chemicals and equipment will be replaced or substituted with chemicals or equipment containing less mercury or no mercury.

Ms. Sherry Boldt
201 N. Illinois Street
Indianapolis, IN 46204
Sherry.boldt@bp.com

Mr. Vince Griffin
Indiana Chamber of Commerce
115 West Washington Street
Indianapolis, IN 46204
vgriffin@indianachamber.com

Ms. Patty Peterson
Pjpete0404@gmail.com

Mr. Ron Rybarezyk
BP Products North America, Inc.
4001 Cedar Point Road
Oslow, OH 43616

Ms. Dorothy Alabach
647 N. 125 W
Valparaiso, IN 46385

Ms. Rose Bergeson
1303 121st Street
Whiting, IN 46394

Ms. Doreen Carey
Grand Cal Task Force
2400 New York Avenue
Whiting, IN 46394

Mr. Michael Golondo
Cargill, Inc.
100 Indianapolis Blvd
Hammond, IN 46931

Mr. John Cogan
1722 Central
Whiting, IN 46394

Mr. John Albergo
Great Lakes Alliance
3046 W. Sherman
Chicago, IL 60645
Diverj1@clear.net

Mr. Nathan Pavlovic
Save the Dunes
444 Barker Road
Michigan City, IN 46360
Nathan@savethedunes.org

Mr. Tim Chen
BP Products North America, Inc.
2815 Indianapolis Blvd
Whiting, IN 46396
Tim.chen@bp.com

Mr. Ryan Metz
P.O. Box 226
Beverly Shores, IN
Ryan.j.metz@gmi.com

Mr. Douglas P. Bley, Manager
Water Quality Programs
ArcelorMittal, Inc.
4020 Kinross Lakes Parkway
Richfield, OH 44286-9000
Douglas.bley@arcelormittal.com

Ms. Suzanne Bobik
2141 Lake
Whiting, IN 46394

Mr. Warren Canright
Chesterton Tribune
P.O. Box 919
Chesterton, IN 46304

Mr. Roosevelt Allen
Lake County 1st District Commissioner
County Government Center
3rd Floor Building "A"
2293 North Main Street
Crown Point, IN 46307

Ms. Kay Nelson
North West Indiana Forum
6100 Southport Road
Portage, IN 46368
knelson@nwiforum.org

Ms. Cathy Martin
Save the Dunes
444 Barker Road
Michigan City, IN 46360
cathy@savethedunes.org

Ms. Elleen Klees
11341 S. Lothin
Chicago, IL
ekleese@gamil.com

Ms. Colleen Aquirre
2922 Churchill Lane
Highland, IN 46322-3565
Tita.lagrimas@tradebe.com

Mr. Patrick Bennett, Director
Environment and Energy
Indiana Manufacturers Assoc.
P.O. Box 82012
Indianapolis, IN 46282-0002
patrickbennett@email.com

Mr. Jj Bulashi
2242 White Oak
Whiting, IN 46394

Ms. Rose Marie Cazeau
Environmental Bureau
Illinois Attorney General, 18th Floor
69 W. Washington Street
Chicago, IL 60602
rcazeau@atg.state.il.us

Ms. Kellee Cobb
Reclaimed Energy Company
1500 Western Avenue
Connersville, IN 47331
kcobb@superioroil.com

Mr. Dan Deeb
Indiana Wildlife Federation
950 North Rangeline Road – Suite A
Carmel, IN 46032

Barb Simpson Ex
Simpson@iwf.org

Daniel and Dorothy Douglas
P.O. Box 228
Whiting, IN 46394

Frances Dupey
Lake County 3rd District
Commissioner
County Government Center
3rd Floor Building "A"
2293 North Main Street
Crown Point, IN 46307

Bernadette Dvorscak
1445 Fred Street
Whiting, IN 46394

Edward Dybel
2440 Schrage Avenue
Whiting, IN 46394

East Chicago Filtration Plant
3330 Aldis Avenue
East Chicago, IN 46312

East Chicago Health Dept.
100 W Chicago Avenue
East Chicago, IN 46312
Lake-echicago@isdh.in.gov

Michael Foster
Eli Lilly and Company
Lilly Corporate Center
Indianapolis, IN 46285
fostermichaell@lilly.com

Emily Gallagher
Emily.gallagher@us.rhodia.com

Jim Glass
Dept of Natural Resources,
Room 274
Dir. Of Historic Preservation
402 W. Washington Street
Indianapolis, IN 46204
jglass@dnr.in.gov

Don Greer
2416 Schrage Avenue
Whiting, IN 46394

Joseph Gresko
1707 Central Avenue
Whiting, IN 46394

Michael Grdina
2234 Schrage Avenue
Whiting, IN 46394

William Haddad
2603 New York Avenue
Whiting, IN 46394

John Haluska
1700 Cleveland Avenue
Whiting, IN 46394

Richard Mercer
Hammond Filtration Plant
6505 Columbia Avenue
Hammond, IN 46320

Craig Hogarth
Heritage Environmental
Services, LLC
7901 W. Morris Street
Indianapolis, IN 46231
Craig.hogarth@heritage-enviro.com

Izaak Walton League
1532 E. Main Street
Griffith, IN 46319

Irene Jackim
3929 Henry Avenue
Hammond, IN 46327

Lee Jackson
6405 Olcott
Hammond, IN 46320

Mark Kozak
1433 Fishcrupp
Whiting, IN 46394

Julie Kujawa
2000 Michigan
Hammond, IN 46320
Julie.kujawa@us.rhodia.com

Ms Tita Lagrimas
Tradebe Treatment & Recycling
4343 Kennedy Avenue
East Chicago, IN 46312

Lake County Health Dept>
2293 N. Main Street
Crown Point, IN 46307-1896
doffinx@lakecountyin.org

Kurt A. Maddox
1604 Old Orchard Road
Vincennes, IN 47591
Maddox@cinergymetro.net

Jack & Carolyn Marsh
1804 Oliver Street
Whiting, IN 46394

Hon. Joseph M. Stahura, Mayor
City of Whiting
Mayors Office
1443 119th Street
Whiting, IN 46394
jstahura@whitingindiana.com

R. W. McCain, Enviro. Chair
Northwest Indiana Coalition
7113 Howard Avenue
Hammond, IN 46324

Daniel and Dorothy Douglas
P.O. Box 228
Whiting, IN 46394

Frances Dupey
Lake County 3rd District
Commissioner
County Government Center
3rd Floor Building "A"
2293 North Main Street
Crown Point, IN 46307

Bernadette Dvorscak
1445 Fred Street
Whiting, IN 46394

Edward Dybel
2440 Schrage Avenue
Whiting, IN 46394

East Chicago Filtration Plant
3330 Aldis Avenue
East Chicago, IN 46312

East Chicago Health Dept.
100 W Chicago Avenue
East Chicago, IN 46312
Lake-echicago@isdh.in.gov

Michael Foster
Eli Lilly and Company
Lilly Corporate Center
Indianapolis, IN 46285
fostermichaell@lilly.com

Emily Gallagher
Emily.gallagher@us.rhodia.com

Jim Glass
Dept of Natural Resources,
Room 274
Dir. Of Historic Preservation
402 W. Washington Street
Indianapolis, IN 46204
jglass@dnr.in.gov

Don Greer
2416 Schrage Avenue
Whiting, IN 46394

Joseph Gresko
1707 Central Avenue
Whiting, IN 46394

Michael Grdina
2234 Schrage Avenue
Whiting, IN 46394

William Haddad
2603 New York Avenue
Whiting, IN 46394

John Haluska
1700 Cleveland Avenue
Whiting, IN 46394

Richard Mercer
Hammond Filtration Plant
6505 Columbia Avenue
Hammond, IN 46320

Craig Hogarth
Heritage Environmental
Services, LLC
7901 W. Morris Street
Indianapolis, IN 46231
Craig.hogarth@heritage-enviro.com

Mail

Izaak Walton League
1532 E. Main Street
Griffith, IN 46319

Irene Jackim
3929 Henry Avenue
Hammond, IN 46327

Lee Jackson
6405 Olcott
Hammond, IN 46320

Mark Kozak
1433 Fischrupp
Whiting, IN 46394

Julie Kujawa
2000 Michigan
Hammond, IN 46320
Julie.kujawa@us.rhodia.com

Ms Tita Lagrimas
Tradebe Treatment & Recycling
4343 Kennedy Avenue
East Chicago, IN 46312

Email

Lake County Health Dept
2293 N. Main Street
Crown Point, IN 46307-1896
doffinx@lakecountyin.org

Kurt A. Maddox
1604 Old Orchard Road
Vincennes, IN 47591
Maddox@cinergymetro.net

Hon. Joseph M. Stahura, Mayor
City of Whiting
Mayors Office
1443 119th Street
Whiting, IN 46394
jstahura@whitingindiana.com

Retired

R. W. McCain, Enviro. Chair
Northwest Indiana Coalition
7113 Howard Avenue
Hammond, IN 46324

Jack & Carolyn Marsh
1804 Oliver Street
Whiting, IN 46394

Ms. Sherry Boldt
201 N. Illinois Street
Indianapolis, IN 46204
Sherry.boldt@bp.com

Mr. John Albergo
Great Lakes Alliance
3046 W. Sherman
Chicago, IL 60645
Diverj1@clear.net

Ms. Kay Nelson
North West Indiana Forum
6100 Southport Road
Portage, IN 46368
knelson@nwiforum.org

Mr. Vince Griffin
Indiana Chamber of Commerce
115 West Washington Street
Indianapolis, IN 46204
vgriffin@indianachamber.com

Mr. Nathan Pavlovic
Save the Dunes
444 Barker Road
Michigan City, IN 46360
Nathan@savethedunes.org

Ms. Cathy Martin
Save the Dunes
444 Barker Road
Michigan City, IN 46360
cathy@savethedunes.org

Ms. Patty Peterson
Pjpete0404@gmail.com

Mr. Tim Chen
BP Products North America, Inc.
2815 Indianapolis Blvd
Whiting, IN 46396
Tim.chen@bp.com

Ms. Elleen Klees
11341 S. Lothin
Chicago, IL
ekleese@gamil.com

Mr. Ron Rybarezyk
BP Products North America, Inc.
4001 Cedar Point Road
Oslow, OH 43616

Mr. Ryan Metz
P.O. Box 226
Beverly Shores, IN
Ryan.j.metz@gmi.com

Ms. Colleen Aquirre
2922 Churchill Lane
Highland, IN 46322-3565
Tita.lagrimas@tradebe.com

Ms. Dorothy Alabach
647 N. 125 W
Valparaiso, IN 46385

Mr. Douglas P. Bley, Manager
Water Quality Programs
ArcelorMittal, Inc.
4020 Kinross Lakes Parkway
Richfield, OH 44286-9000
Douglas.bley@arcelormittal.com

Mr. Patrick Bennett, Director
Environment and Energy
Indiana Manufacturers Assoc.
P.O. Box 82012
Indianapolis, IN 46282-0002
patrickbennett@email.com

Ms. Rose Bergeson
1303 121st Street
Whiting, IN 46394

Bobalik
Ms. Suzanne Boblak
2141 Lake
Whiting, IN 46394

Mr. Jj Bulashi
2242 White Oak
Whiting, IN 46394

Ms. Doreen Carey
Grand Cal Task Force
2400 New York Avenue
Whiting, IN 46394

Mr. Warren Canright
Chesterton Tribune
P.O. Box 919
Chesterton, IN 46304

Ms. Rose Marie Cazeau
Environmental Bureau
Illinois Attorney General, 18th Floor
69 W. Washington Street
Chicago, IL 60602
rcazeau@atg.state.il.us

Mr. Michael Golondo
Cargill, Inc.
100 Indianapolis Blvd
Hammond, IN 46931

Mr. Roosevelt Allen
Lake County 1st District Commissioner
County Government Center
3rd Floor Building "A"
2293 North Main Street
Crown Point, IN 46307

Ms. Kellee Cobb
Reclaimed Energy Company
1500 Western Avenue
Connersville, IN 47331
kcobb@superioroil.com

Mr. John Cogan
1722 Central
Whiting, IN 46394

Mr. Dan Deeb
Indiana Wildlife Federation
950 North Rangeline Road – Suite A
Carmel, IN 46032

Senator Frank Mrvan
6732 Maryland Avenue
Hammond, IN 46323

John Murray
Heritage Environmental Services, LLC
7901 W. Morris Street
Indianapolis, IN 46231
John.murray@heritage-cnviro.com

Paul Myers, Executive Director
Marktown Preservation Society
405 Prospect Street
East Chicago, IN 46312

Philip Paulina
1732 Atchison Avenue
Whiting, IN 46394

Praxair, Inc.
4560 Kennedy Avenue
East Chicago, IN 36312

Violet Regan
1836 Sheridan Avenue
Whiting, IN 46394

Charlotte Read Email
Save the Dunes Council
444 Barker Road
Michigan City, IN 46360

Safety-Kleen Oil Recovery
601 Riley Road
East Chicago, IN 46312

Sandra Scalp
2804 New York Avenue
Whiting, IN 46394

Gerry Schuch
Lake County 2nd District Commissioner
County Government Center
3rd Floor Building "A"
2293 North Main Street
Crown Point, IN 46307

Rae Schnapp, Ph. D.
Hoosier Environmental Council
520 East 12th Street
Indianapolis, IN 46202

24 mailed no di total

Paul Seman
1712 Sheridan
Whiting, IN 46394

Arthur Smith, Manager
Environmental Affairs
NIPSCO
5265 Hohman Avenue
Hammond, IN 46320
Path Post

State Line Energy
103rd and Lake Michigan
Whiting, IN 46394
Sold

Jeannette Stefaich
1309 121st Street
Whiting, IN 46394

(cities, owners all on 1 email hd libs IL+IN COC)

Phil Shinn
Drop Code 2645
Eli Lilly and Company
Lilly Corporate Center
Indianapolis, IN 46285

Lorraine Stasek
4509 Tod Avenue
East Chicago, IN 46312

Email
Town of Griffith
111 N. Broad Street
Griffith, IN 46319

Sandra Tyszkiewicz
2804 New York Avenue
Whiting, IN 46394
Stewvt-623@wowway.com

Unilever Manufacturing, Inc.
1200 Calumet Avenue
Hammond, IN 46320

U.S. Gypsum Company
3501 Canal
East Chicago, IN 46312

U.S. Steel, Gary Works
1 North Broadway
Gary, IN 46402

Mr. Robert West
Environmental Manager
Buzzi Unicern USA
3301 S. Sounty Road 150 W
Greencastle, IN 46135
Robert.west@buzziunicermusa.com

Greg Yates
Greg.yates@us.Rhodia.com

James Zatorski
2000 Michigan
Hammond, IN 46320

Nicole Barker
Executive Director
Save the Dunes
nicole@savedunes.org

Ann Alexander
Senior Attorney, Midwest Program
Natural Resources Defense Council
aalexander@nrdc.org

Lyman Welch
Water Quality Program Director
Alliance for the Great Lakes
lwelch@greatlakes.org

Thomas R. Anderson, Vice-President
Porter County Chapter
Isaak Walton League
No address, no email

Kim Ferraro, Director
Agriculture and Water Policy
Hoosier Environmental Council
520 East 12th Street
Indianapolis, IN 46202

Bowden Quinn
Conservation Director
Hoosier Chapter of the Sierra Club
1100 W. 42nd Street, Suite 140
Indianapolis, IN 46208
bowdenquinn@gmail.com

Mr. Ronald L. Collins
Facilities/Environmental Engineering
Enerdel, Inc.
8740 Hague Road, Bldg 7
Indianapolis, IN 46256
rcollings@enerdel.com

Unilever Manufacturing, Inc.
1200 Calumet Avenue
Hammond, IN 46320

U.S. Gypsum Company
3501 Canal
East Chicago, IN 46312

U.S. Steel, Gary Works
1 North Broadway
Gary, IN 46402

Mr. Robert West
Environmental Manager
Buzzi Unicem USA
3301 S. County Road 150 W
Greencastle, IN 46135
Robert.west@buzziunicemusa.com

Greg Yates
Greg.yates@us.Rhodia.com

James Zatorski
2000 Michigan
Hammond, IN 46320

Nicole Barker
Executive Director
Save the Dunes
nicole@savedunes.org

Ann Alexander
Senior Attorney, Midwest Program
Natural Resources Defense Council
aalexander@nrdc.org

Lyman Welch
Water Quality Program Director
Alliance for the Great Lakes
lwelch@greatlakes.org

Thomas R. Anderson, Vice-President
Porter County Chapter
Isaak Walton League
No address, no email

Kim Ferraro, Director
Agriculture and Water Policy
Hoosier Environmental Council
520 East 12th Street
Indianapolis, IN 46202

Bowden Quinn
Conservation Director
Hoosier Chapter of the Sierra Club
1100 W. 42nd Street, Suite 140
Indianapolis, IN 46208
bowdenquinn@gmail.com

Mr. Ronald L. Collins
Facilities/Environmental Engineering
Enerdel, Inc.
8740 Hague Road, Bldg 7
Indianapolis, IN 46256
rcollings@enerdel.com

Senator Frank Mrvan
6732 Maryland Avenue
Hammond, IN 46323

John Murray
Heritage Environmental Services, LLC
7901 W. Morris Street
Indianapolis, IN 46231
John.murray@heritage-cnviro.com

Philip Paulina
1732 Atchison Avenue
Whiting, IN 46394

Violet Regan
1836 Sheridan Avenue
Whiting, IN 46394

Safety-Kleen Oil Recovery
601 Riley Road
East Chicago, IN 46312

Gerry Schueb
Lake County 2nd District Commissioner
County Government Center
3rd Floor Building "A"
2293 North Main Street
Crown Point, IN 46307

Paul Seman
1712 Sheridan
Whiting, IN 46394

State Line Energy
103rd and Lake Michigan
Whiting, IN 46394

Phil Shin
Drop Code 2645
Eli Lilly and Company
Lilly Corporate Center
Indianapolis, IN 46285

Town of Griffith
111 N. Broad Street
Griffith, IN 46319

Paul Myers, Executive Director
Marktown Preservation Society
405 Prospect Street
East Chicago, IN 46312

Praxair, Inc.
4560 Kennedy Avenue
East Chicago, IN 46312

Charlotte Read
Save the Dunes Council
444 Barker Road
Michigan City, IN 46360

Sandra Scalp
2804 New York Avenue
Whiting, IN 46394

Rae Schnapp, Ph. D.
Hoosier Environmental Council
520 East 12th Street
Indianapolis, IN 46202

Arthur Smith, Manager
Environmental Affairs
NIPSCO
5265 Hohman Avenue
Hammond, IN 46320

Jeannette Stefaich
1309 121st Street
Whiting, IN 46394

Lorraine Stasek
4509 Tod Avenue
East Chicago, IN 46312

Sandra Tyszkiewicz
2804 New York Avenue
Whiting, IN 46394
Stewyt-623@wowway.com

65-42 PS/cc (9i BP)
MR. RON RYBAREZYK
BP PRODUCTS NRTH AM
4001 CEDAR POINT ROAD
OSLOW OH 43616

65-42 PS/cc (9i BP)
Mr. J Bulashi
2242 White Oak
Whiting, IN 46394

65-42 PS/cc (9i BP)
Ms. Dorothy Alabach
647 N. 125 W
Valparaiso, IN 46385

65-42 PS/cc (9i BP)
Don Greer
2416 Sch rage Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
John Haluska
1700 Cleveland Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
Walton League
1532 E. Main Street
Griffith, IN 46319

65-42 PS/cc (9i BP)
Violet Regan
1836 Sheridan Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
Jeannette Stefaich
1309 121st Street
Whiting, IN 46394

65-42 PS/cc (9i BP)
Ms. Rose Bergeson
1303 121st Street
Whiting, IN 46394

65-42 PS/cc (9i BP)
Mr. John Cogan
1722 Central
Whiting, IN 46394

65-42 PS/cc (9i BP)
Bernadette Dvorscak
1445 Fred Street
Whiting, IN 46394

65-42 PS/cc (9i BP)
Joseph Gresko
1707 Central Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
Mark Kozak
1433 Fishcrupp
Whiting, IN 46394

65-42 PS/cc (9i BP)
Irene Jackim
3929 Henry Avenue
Hammond, IN 46327

65-42 PS/cc (9i BP)
Sandra Scalp
2804 New York Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
Lorraine Stasek
4509 Tod Avenue
East Chicago, IN 46312

65-42 PS/cc (9i BP)
Ms. Suzanne Bobalic
2141 Lake
Whiting, IN 46394

65-42 PS/cc (9i BP)
Daniel and Dorothy Douglas
P.O. Box 228
Whiting, IN 46394

65-42 PS/cc (9i BP)
Edward Dybel
2440 Schrage Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
William Haddad
2603 New York Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
Philip Paulina
1732 Atchison Avenue
Whiting, IN 46394

65-42 PS/cc (9i BP)
Lee Jackson
6405 Olcott
Hammond, IN 46320

65-42 PS/cc (9i BP)
Paul Seman
1712 Sheridan
Whiting, IN 46394

65-42 PS/cc (9i BP)
Lorraine Stasek
4509 Tod Avenue
East Chicago, IN 46312

IVEY, DAMITA

From: Mail Delivery System [MAILER-DAEMON@iotpmap01pl.isd.state.in.us]
To: maddox@cinergymetro.net; fostermichaell@lilly.com; Emily.Gallagher@us.rhodia.com
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Subject: Undeliverable: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC

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aspmx.l.google.com, ustlmllyc922.mail.lilly.com, mail.emps.equant.com #<aspmx.l.google.com #5.1.1 smtp; 550-5.1.1 The email account that you tried to reach does not exist. Please try 550-5.1.1 double-checking the recipient's email address for typos or 550-5.1.1 unnecessary spaces. Learn more at 550 5.1.1 http://support.google.com/mail/bin/answer.py?answer=6596 s8si15603469yhp.142 - gsmtp> #SMTP#

fostermichaell@lilly.com
aspmx.l.google.com, ustlmllyc922.mail.lilly.com, mail.emps.equant.com #<ustlmllyc922.mail.lilly.com #5.0.0 smtp; 550 #5.1.0 Address rejected.> #SMTP#

Emily.Gallagher@us.rhodia.com
aspmx.l.google.com, ustlmllyc922.mail.lilly.com, mail.emps.equant.com #<mail.emps.equant.com #5.4.1 smtp; 550 5.4.1 Emily.Gallagher@us.rhodia.com: Recipient address rejected: Access Denied> #SMTP#

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Received: from IOTMBSP1AVW.state.in.us ([169.254.2.89]) by
IOTCHBP06VW.state.in.us ([10.19.106.106]) with mapi id 14.02.0342.004; Wed,
25 Sep 2013 15:37:24 -0400
From: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
To: Eli Lilly M Foster <fostermichaell@lilly.com>,
<Julie.Kujawa@Us.Rhodia.Com>, Chicago Audubon Society
<cmarshbird@prodigy.net>, Emily Gallagher <Emily.Gallagher@us.rhodia.com>,
<greg.yates@us.rhodia.com>, <khenry@usg.com>, <curtis.hamner@unilever.com>,
<robert.west@buzziunicemusa.com>, <rhlange@uss.com>, <mtdauterman@uss.com>,
<mrmarktown@sbcglobal.net>, <allen.h.lambacher@dom.com>,
<Stewyt-623@Wowway.Com>, Cinergy Metro K Maddox <maddox@cinergymetro.net>
Subject: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Topic: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Index: Ac66JqhK9rcbpvKeQW2+qhfRiy9QOQ==
Disposition-Notification-To: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
Date: Wed, 25 Sep 2013 19:37:24 +0000
Message-ID: <7B7640FE1057294DA9BCD38C98AFA3500F568708@IOTMBSP1AVW.state.in.us>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
x-originating-ip: [10.60.66.61]
Content-Type: multipart/alternative;
boundary="_000_7B7640FE1057294DA9BCD38C98AFA3500F568708IOTMBSP1AVWstat_"
MIME-Version: 1.0
x-exclaimer-md-config: c4061e94-9ced-469b-8557-2bf163a357fe
X-RCIS-Action: ALLOW

Undelivered
Message

IVEY, DAMITA

From: Mail Delivery System [MAILER-DAEMON@iotpmap01pl.isd.state.in.us]
To: Mike_mikovich@praxair.com; eugene_roddy@praxair.com; reads@earthlink.net
Sent: Wednesday, September 25, 2013 3:40 PM
Subject: Undeliverable: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC

Delivery has failed to these recipients or groups:

Mike_mikovich@praxair.com
A problem occurred during the delivery of this message to this e-mail address. Try sending this message again. If the problem continues, please contact your helpdesk.

eugene_roddy@praxair.com
A problem occurred during the delivery of this message to this e-mail address. Try sending this message again. If the problem continues, please contact your helpdesk.

reads@earthlink.net
A problem occurred during the delivery of this message to this e-mail address. Try sending this message again. If the problem continues, please contact your helpdesk.

The following organization rejected your message: mx6.praxair.com, mx4.earthlink.net.

Diagnostic information for administrators:

Generating server: iotpmap01pl.isd.state.in.us

Mike_mikovich@praxair.com
mx6.praxair.com, mx4.earthlink.net #<mx6.praxair.com #5.0.0 smtp; 550 #5.1.0 Address rejected.> #SMTP#

eugene_roddy@praxair.com
mx6.praxair.com, mx4.earthlink.net #<mx6.praxair.com #5.0.0 smtp; 550 #5.1.0 Address rejected.> #SMTP#

reads@earthlink.net
mx6.praxair.com, mx4.earthlink.net #<mx4.earthlink.net #5.0.0 smtp; 550 reads@earthlink.net...User unknown> #SMTP#

Original message headers:

Return-Path: <DIVEY@idem.IN.gov>
Received: from iotpmap01pl.isd.state.in.us (localhost.localdomain [127.0.0.1])
by localhost (Email Security Appliance) with SMTP id 1FF6E1EA37BA_2433BCDB;
Wed, 25 Sep 2013 19:38:52 +0000 (GMT)
Received: from mailhub2.isd.state.in.us (iotsmtp02pl.isd.state.in.us

[10.1.23.41]) (using TLSv1 with cipher DHE-RSA-AES256-SHA (256/256 bits))
(Client did not present a certificate) by iotpmap01pl.isd.state.in.us (Sophos Email Appliance) with ESMTPS id 3ADBE1EA3598_2433B83F; Wed, 25 Sep 2013 19:37:39 +0000 (GMT)
Received: from IOTDMSP04PW.shared.state.in.us (iotdmsp04pw.shared.state.in.us [10.19.12.52]) by mailhub2.isd.state.in.us (Postfix) with ESMTP id 05A3C2A7274; Wed, 25 Sep 2013 15:37:39 -0400 (EDT)
Content-Transfer-Encoding: 7bit
x-ipfrom: 10.19.3.31
Received: from IOTDLPP02.doit.state.in.us [10.19.3.31] by IOTDMSP04PW.shared.state.in.us;Wed, 25 Sep 2013 15:37:34 -0400
Content-Class: urn:content-classes:message
Importance: normal
Priority: normal
X-MimeOLE: Produced By Microsoft MimeOLE V6.00.3790.4913
Received: from IOTHUBP05VW.shared.state.in.us (iothubp05vw.shared.state.in.us [10.19.14.69]) by IOTDLPP02.doit.state.in.us (8.13.1/8.13.1) with ESMTP id r8PJbXk4022673; Wed, 25 Sep 2013 15:37:33 -0400
Received: from IOTCHBP03VW.state.in.us (10.19.106.103) by IOTHUBP05VW.shared.state.in.us (10.19.14.69) with Microsoft SMTP Server (TLS) id 8.3.327.1; Wed, 25 Sep 2013 15:37:33 -0400
Received: from IOTMBSP1AVW.state.in.us ([169.254.2.89]) by IOTCHBP03VW.state.in.us ([10.19.106.103]) with mapi id 14.02.0342.004; Wed, 25 Sep 2013 15:37:33 -0400
From: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
To: Heritage Enviro Serv - J Murray <john.murray@heritage-enviro.com>, Charlotte Read <reads@earthlink.net>, Heritage Enviro Srvc - C Hogarth <craig.hogarth@heritage-enviro.com>, <dzawodni@safety-kleen.com>, <jmross@nisource.com>, <dkplath@NiSource.com>, <cyndi_hughes@Praxair.com>, <eugene_roddy@praxair.com>, <gregory_martin@praxair.com>, "Praxair Inc - M Mikovich" <Mike_mikovich@praxair.com>, Phil Shinn <p.shinn@lilly.com>
Subject: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Topic: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Index: Ac66Jq1lKusaNC34Qe2Ums9OFSh2zQ==
Disposition-Notification-To: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
Date: Wed, 25 Sep 2013 19:37:32 +0000
Message-ID: <7B7640FE1057294DA9BCD38C98AFA3500F568710@IOTMBSP1AVW.state.in.us>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
x-originating-ip: [10.60.66.61]
Content-Type: multipart/alternative;
boundary="_000_7B7640FE1057294DA9BCD38C98AFA3500F568710IOTMBSP1AVWstat_"
MIME-Version: 1.0
x-exclaimer-md-config: c4061e94-9ced-469b-8557-2bf163a357fe
X-RCIS-Action: ALLOW

Undelivered Message

IVEY, DAMITA

From: Mail Delivery System [MAILER-DAEMON@iotpmap01pl.isd.state.in.us]
To: Pietruchac@gohamond.com; griffithpublicworks@comcast.com; francesdupeyfx@lakecountyin.org
Sent: Wednesday, September 25, 2013 3:30 PM
Subject: Undeliverable: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA

Delivery has failed to these recipients or groups:

Pietruchac@gohamond.com
A problem occurred and this message couldn't be delivered. Check to be sure the e-mail address is correct. If the problem continues, please contact your helpdesk.

griffithpublicworks@comcast.com
A problem occurred during the delivery of this message to this e-mail address. Try sending this message again. If the problem continues, please contact your helpdesk.

francesdupeyfx@lakecountyin.org
A problem occurred during the delivery of this message to this e-mail address. Try sending this message again. If the problem continues, please contact your helpdesk.

The following organization rejected your message: mx2.comcast.com, cpand0011a.lakecountyin.org.

Diagnostic information for administrators:

Generating server: iotpmap01pl.isd.state.in.us

Pietruchac@gohamond.com
mx2.comcast.com, cpand0011a.lakecountyin.org #< #5.4.4 X-Email-Security-Appliance; unable to look up host gohamond.com: hostname nor servname provided, or not known> #SMTP#

griffithpublicworks@comcast.com
mx2.comcast.com, cpand0011a.lakecountyin.org #<mx2.comcast.com #5.0.0 smtp; 550 Mailbox unavailable or access denied - <griffithpublicworks@comcast.com>> #SMTP#

francesdupeyfx@lakecountyin.org
mx2.comcast.com, cpand0011a.lakecountyin.org #<cpand0011a.lakecountyin.org #5.0.0 smtp; 550 User unknown> #SMTP#

Original message headers:

Return-Path: <DIVEY@idem.IN.gov>
Received: from iotpmap01pl.isd.state.in.us (localhost.localdomain [127.0.0.1])

by localhost (Email Security Appliance) with SMTP id 54BFA1EA3596_243396EB;
Wed, 25 Sep 2013 19:28:46 +0000 (GMT)
Received: from mailhub2.isd.state.in.us (iotsmtp02pl.isd.state.in.us
[10.1.23.41]) (using TLSv1 with cipher DHE-RSA-AES256-SHA (256/256 bits))
(Client did not present a certificate) by iotpmap01pl.isd.state.in.us (Sophos
Email Appliance) with ESMTPS id 780B01EA35E3_2433967F; Wed, 25 Sep 2013
19:28:39 +0000 (GMT)
Received: from IOTDMSP04PW.shared.state.in.us (iotdmsp04pw.shared.state.in.us
[10.19.12.52]) by mailhub2.isd.state.in.us (Postfix) with ESMTP id
F2A0C2A72DE; Wed, 25 Sep 2013 15:28:38 -0400 (EDT)
Content-Transfer-Encoding: 7bit
x-ipfrom: 10.19.3.30
Received: from IOTDLPP01.doit.state.in.us [10.19.3.30] by
IOTDMSP04PW.shared.state.in.us;Wed, 25 Sep 2013 15:28:34 -0400
Content-Class: urn:content-classes:message
Importance: normal
Priority: normal
X-MimeOLE: Produced By Microsoft MimeOLE V6.00.3790.4913
Received: from IOTHUBP04VW.shared.state.in.us (iothubp04vw.shared.state.in.us
[10.19.14.49]) by IOTDLPP01.doit.state.in.us (8.13.1/8.13.1) with ESMTP id
r8PJSXFK019357; Wed, 25 Sep 2013 15:28:33 -0400
Received: from IOTCHBP02VW.state.in.us (10.19.106.102) by
IOTHUBP04VW.shared.state.in.us (10.19.14.49) with Microsoft SMTP Server (TLS)
id 8.3.327.1; Wed, 25 Sep 2013 15:28:33 -0400
Received: from IOTMBSP1AVW.state.in.us ([169.254.2.89]) by
IOTCHBP02VW.state.in.us ([fe80::945c:1bed:7409:5083%11]) with mapi id
14.02.0342.004; Wed, 25 Sep 2013 15:28:32 -0400
From: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
To: <Pietruchac@gohamond.com>, <Havlinp@gohammond.com>,
<dolson@hammondsd.com>, <munger@hammondsd.com>, <s1@iga.in.gov>,
<acopeland@eastchicago.com>, <vgomez@eastchicago.com>,
<rcarrillo@eastchicago.com>, "County, Lake-EChicago"
<Lake-EChicago@isdh.IN.gov>, <aard@eastchicago.com>, James Glass
<JGlass@dnr.IN.gov>, <scheugj@lakecountyin.org>, <allenrx@lakecountyin.org>,
<francesdupeyfx@lakecountyin.org>, <jstahura@whitingindiana.com>,
<vgriffin@indianachamber.com>, <rick.konopasek@griffith.in.gov>,
<griffithpublicworks@comcast.com>, <cstrickland@lcplin.org>,
<blancaster@lcplin.org>, <Health@gohammond.com>, "County, Lake-Hammond"
<Lake-Hammond@isdh.IN.gov>, IL AG Office <rcazeau@atg.state.IL.us>
Subject: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA
Thread-Topic: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA
Thread-Index: Ac66JWsQ3CtFjjz7TsCrPS+HcJAY/g==
Disposition-Notification-To: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
Date: Wed, 25 Sep 2013 19:28:32 +0000
Message-ID: <7B7640FE1057294DA9BCD38C98AFA3500F5676E3@IOTMBSP1AVW.state.in.us>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
x-originating-ip: [10.60.66.61]
Content-Type: multipart/alternative;
boundary="_000_7B7640FE1057294DA9BCD38C98AFA3500F5676E3IOTMBSP1AVWstat_"
MIME-Version: 1.0
x-exclaimer-md-config: c4061e94-9ced-469b-8557-2bf163a357fe

IVEY, DAMITA

From: Mail Delivery System [MAILER-DAEMON@iotpmap01pl.isd.state.in.us]
To: Nathan@savethedunes.org; cathy@savethedunes.org; pipete0404@gmail.com; ryan.j.metz@gmi.com; ekleese@gamil.com
Sent: Wednesday, September 25, 2013 3:18 PM
Subject: Undeliverable: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC

Delivery has failed to these recipients or groups:

Nathan@savethedunes.org
A problem occurred and this message couldn't be delivered. Check to be sure the e-mail address is correct. If the problem continues, please contact your helpdesk.

cathy@savethedunes.org
A problem occurred and this message couldn't be delivered. Check to be sure the e-mail address is correct. If the problem continues, please contact your helpdesk.

pipete0404@gmail.com
The e-mail address you entered couldn't be found. Please check the recipient's e-mail address and try to resend the message. If the problem continues, please contact your helpdesk.

ryan.j.metz@gmi.com
The e-mail address you entered couldn't be found. Please check the recipient's e-mail address and try to resend the message. If the problem continues, please contact your helpdesk.

ekleese@gamil.com
The e-mail address you entered couldn't be found. Please check the recipient's e-mail address and try to resend the message. If the problem continues, please contact your helpdesk.

The following organization rejected your message: gmail-smtp-in.l.google.com, aspmx.l.google.com, mx9.webfaction.com.

Diagnostic information for administrators:

Generating server: iotpmap01pl.isd.state.in.us

Nathan@savethedunes.org
gmail-smtp-in.l.google.com, aspmx.l.google.com, mx9.webfaction.com #< #5.4.4 X-Email-Security-Appliance; unable to look up host savethedunes.org: hostname nor servname provided, or not known> #SMTP#

cathy@savethedunes.org
gmail-smtp-in.l.google.com, aspmx.l.google.com, mx9.webfaction.com #< #5.4.4 X-Email-Security-Appliance; unable to look up host savethedunes.org: hostname nor servname provided, or not known> #SMTP#

pipete0404@gmail.com
gmail-smtp-in.l.google.com, aspmx.l.google.com, mx9.webfaction.com #<gmail-smtp-in.l.google.com #5.1.1 smtp; 550-5.1.1 The email account that you tried to reach does not exist. Please try 550-5.1.1 double-checking the recipient's email address for typos or 550-5.1.1 unnecessary spaces. Learn more at 550 5.1.1 http://support.google.com/mail/bin/answer.py?answer=6596 i39si15566461yhq.137 - gsmtp> #SMTP#

ryan.j.metz@gmi.com
gmail-smtp-in.l.google.com, aspmx.l.google.com, mx9.webfaction.com #<aspmx.l.google.com #5.1.1 smtp; 550-5.1.1 The email account that you tried to reach does not exist. Please try 550-5.1.1 double-checking the recipient's email address for typos or 550-5.1.1 unnecessary spaces. Learn more at 550 5.1.1 http://support.google.com/mail/bin/answer.py?answer=6596 n70si11342191yho.344 - gsmtp> #SMTP#

ekleese@gamil.com
gmail-smtp-in.l.google.com, aspmx.l.google.com, mx9.webfaction.com #<mx9.webfaction.com #5.1.1 smtp; 550 5.1.1 <ekleese@gamil.com>: Recipient address rejected: User unknown in virtual alias table> #SMTP#

Original message headers:

Return-Path: <DIVEY@idem.IN.gov>
Received: from iotpmap01pl.isd.state.in.us (localhost.localdomain [127.0.0.1])
    by localhost (Email Security Appliance) with SMTP id C0EA31EA36B7_24336DEB;
    Wed, 25 Sep 2013 19:17:50 +0000 (GMT)
Received: from mailhub2.isd.state.in.us (iotsmtp02pl.isd.state.in.us
 [10.1.23.41]) (using TLSv1 with cipher DHE-RSA-AES256-SHA (256/256 bits))
    (Client did not present a certificate) by iotpmap01pl.isd.state.in.us (Sophos
 Email Appliance) with ESMTPS id 8E0C21EA36F6_24336DDF; Wed, 25 Sep 2013
 19:17:49 +0000 (GMT)
Received: from IOTDMSP03PW.shared.state.in.us (iotdmsp03pw.shared.state.in.us
 [10.19.12.51]) by mailhub2.isd.state.in.us (Postfix) with ESMTP id
 125E62A7274; Wed, 25 Sep 2013 15:17:49 -0400 (EDT)
Content-Transfer-Encoding: 7bit
x-ipfrom: 10.19.3.213
Received: from IOTDLPP03.doit.state.in.us [10.19.3.213] by
 IOTDMSP03PW.shared.state.in.us;Wed, 25 Sep 2013 15:17:48 -0400
Received: from iothubp01vw.shared.state.in.us (iothubp01vw.shared.state.in.us
 [10.19.14.68]) by IOTDLPP03.doit.state.in.us (8.13.1/8.13.1) with ESMTP id
 r8PJHhR1020924; Wed, 25 Sep 2013 15:17:47 -0400
Content-Class: urn:content-classes:message
Importance: normal
Priority: normal
X-MimeOLE: Produced By Microsoft MimeOLE V6.00.3790.4913
Received: from IOTCHBP04VW.state.in.us (10.19.106.104) by
 iothubp01vw.shared.state.in.us (10.19.14.68) with Microsoft SMTP Server (TLS)
 id 8.3.279.1; Wed, 25 Sep 2013 15:17:43 -0400
Received: from IOTMBSP1AVW.state.in.us ([169.254.2.89]) by
 IOTCHBP04VW.state.in.us ([10.19.106.104]) with mapi id 14.02.0342.004; Wed,
 25 Sep 2013 15:17:43 -0400
From: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
To: <sherry.boldt@bp.com>, NW IN Forum - K Nelson <knelson@nwiforum.org>,
    "Save the Dunes" <Nathan@savethedunes.org>, Save the Dunes
    <cathy@savethedunes.org>, Patty Peterson <pipete0404@gmail.com>, Tim Chen
    <Tim.chen@bp.com>, <ekleese@gamil.com>, <ryan.j.metz@gmi.com>, Tita Lagrimas
    <tita.lagrimas@tradebe.com>, Douglas Bley <douglas.bley@arcelormittal.com>,
    Patrick Bennett <patrickbennett@email.com>, <dcarey@ci.gary.in.us>,

IVEY, DAMITA

From: postmaster@asphalt-materials.com
To: Heritage Enviro Serv - J Murray
Sent: Wednesday, September 25, 2013 4:28 PM
Subject: Undeliverable: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC

Delivery has failed to these recipients or groups:

Heritage Enviro Serv - J Murray
The e-mail address you entered couldn't be found. Please check the recipient's e-mail address and try to resend the message. If the problem continues, please contact your helpdesk.

Diagnostic information for administrators:

Generating server: asphalt-materials.com

john.murray@heritage-enviro.com
#< #5.1.1 smtp;550 5.1.1 RESOLVER.ADR.RecipNotFound; not found> #SMTP#

Original message headers:

X-ASG-Debug-ID: 1380137933-0591aa3a5e2225f0001-TLnOtU
X-Barracuda-Envelope-From: DIVEY@idem.IN.gov
X-Barracuda-Apparent-Source-IP: 108.59.49.249
Content-Transfer-Encoding: 7bit
x-ipfrom: 10.19.3.31
Content-Class: urn:content-classes:message
Importance: normal
Priority: normal
X-MimeOLE: Produced By Microsoft MimeOLE V6.00.3790.4913
From: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
To: Heritage Enviro Serv - J Murray <john.murray@heritage-enviro.com>,
Charlotte Read <reads@earthlink.net>, Heritage Enviro Srvc - C Hogarth
<craig.hogarth@heritage-enviro.com>, <dzawodni@safety-kleen.com>,
<jmross@nisource.com>, <dkplath@NiSource.com>, <cyndi_hughes@Praxair.com>,
<eugene_roddy@praxair.com>, <gregory_martin@praxair.com>, "Praxair Inc - M
Mikovich" <Mike_mikovich@praxair.com>, Phil Shinn <p.shinn@lilly.com>
Subject: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Topic: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
X-ASG-Orig-Subj: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Index: Ac66Jq1lKusaNC34Qe2Ums9OFSh2zQ==
Disposition-Notification-To: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
Date: Wed, 25 Sep 2013 19:37:32 +0000
Message-ID: <7B7640FE1057294DA9BCD38C98AFA3500F568710@IOTMBSP1AVW.state.in.us>
Accept-Language: en-US
Content-Language: en-US

X-MS-Has-Attach:
X-MS-TNEF-Correlator:
x-originating-ip: [10.60.66.61]
Content-Type: multipart/alternative;
    boundary="_000_7B7640FE1057294DA9BCD38C98AFA3500F568710IOTMBSP1AVWstat_"
MIME-Version: 1.0
x-exclaimer-md-config: c4061e94-9ced-469b-8557-2bf163a357fe
X-RCIS-Action: ALLOW
X-Barracuda-Connect: iotpmap01pl.isd.state.in.us[108.59.49.249]
X-Barracuda-Start-Time: 1380137933
X-Barracuda-URL: http://172.16.1.36:8000/cgi-mod/mark.cgi
X-Virus-Scanned: by bsmtpd at theheritagegrp.com
X-Barracuda-BRTS-Status: 1
X-Barracuda-Spam-Score: 1.94
X-Barracuda-Spam-Status: No, SCORE=1.94 using per-user scores of TAG_LEVEL=3.5 QUARANTINE_LEVEL=5.0
KILL_LEVEL=9.0 tests=BSF_SC0_MISMATCH_TO, CN_BODY_332, HTML_MESSAGE, SUBJ_ALL_CAPS, SUBJ_ALL_CAPS_2
X-Barracuda-Spam-Report: Code version 3.2, rules version 3.2.2.140919
    Rule breakdown below
     pts rule name   description
    ---- ---------------------- --
    0.00 BSF_SC0_MISMATCH_TO   Envelope rcpt doesn't match header
    0.12 CN_BODY_332   BODY: CN_BODY_332
    0.00 HTML_MESSAGE   BODY: HTML included in message
    0.01 SUBJ_ALL_CAPS   Subject is all capitals
    1.81 SUBJ_ALL_CAPS_2   SUBJ_ALL_CAPS_2
Return-Path: DIVEY@idem.in.gov

IVEY, DAMITA

From: postmaster@ci.gary.in.us
To: dcarey@ci.gary.in.us
Sent: Wednesday, September 25, 2013 4:25 PM
Subject: Undeliverable: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC

Delivery has failed to these recipients or groups:

dcarey@ci.gary.in.us
The e-mail address you entered couldn't be found. Please check the recipient's e-mail address and try to resend the message. If the problem continues, please contact your helpdesk.

Diagnostic information for administrators:

Generating server: BY2PR07MB012.namprd07.prod.outlook.com

dcarey@ci.gary.in.us
#< #5.1.1 smtp;550 5.1.1 RESOLVER.ADR.RecipNotFound; not found> #SMTP#

Original message headers:

Received: from CO1PR07CA013.namprd07.prod.outlook.com (10.141.49.43) by BY2PR07MB012.namprd07.prod.outlook.com (10.255.241.38) with Microsoft SMTP Server (TLS) id 15.0.775.9; Wed, 25 Sep 2013 19:17:54 +0000
Received: from BL2FFO11FD027.protection.gbl (2a01:111:f400:7c09::184) by CO1PR07CA013.outlook.office365.com (2a01:111:e400:102f::43) with Microsoft SMTP Server (TLS) id 15.0.775.9 via Frontend Transport; Wed, 25 Sep 2013 19:17:54 +0000
Received: from iotpmap01pl.isd.state.in.us (108.59.49.249) by BL2FFO11FD027.mail.protection.outlook.com (10.173.161.106) with Microsoft SMTP Server (TLS) id 15.0.775.5 via Frontend Transport; Wed, 25 Sep 2013 19:17:53 +0000
Received: from iotpmap01pl.isd.state.in.us (localhost.localdomain [127.0.0.1]) by localhost (Email Security Appliance) with SMTP id C0EA31EA36B7_24336DEB; Wed, 25 Sep 2013 19:17:50 +0000 (GMT)
Received: from mailhub2.isd.state.in.us (iotsmtp02pl.isd.state.in.us [10.1.23.41]) (using TLSv1 with cipher DHE-RSA-AES256-SHA (256/256 bits)) (Client did not present a certificate) by iotpmap01pl.isd.state.in.us (Sophos Email Appliance) with ESMTPS id 8E0C21EA36F6_24336DDF; Wed, 25 Sep 2013 19:17:49 +0000 (GMT)
Received: from IOTDMSP03PW.shared.state.in.us (iotdmsp03pw.shared.state.in.us [10.19.12.51]) by mailhub2.isd.state.in.us (Postfix) with ESMTP id 125E62A7274; Wed, 25 Sep 2013 15:17:49 -0400 (EDT)
Content-Transfer-Encoding: 7bit
x-ipfrom: 10.19.3.213
Received: from IOTDLPP03.doit.state.in.us [10.19.3.213] by

IOTDMSP03PW.shared.state.in.us;Wed, 25 Sep 2013 15:17:48 -0400
Received: from iothubp01vw.shared.state.in.us (iothubp01vw.shared.state.in.us [10.19.14.68]) by IOTDLPP03.doit.state.in.us (8.13.1/8.13.1) with ESMTP id r8PJHhR1020924; Wed, 25 Sep 2013 15:17:47 -0400
Content-Class: urn:content-classes:message
Importance: normal
Priority: normal
X-MimeOLE: Produced By Microsoft MimeOLE V6.00.3790.4913
Received: from IOTCHBP04VW.state.in.us (10.19.106.104) by iothubp01vw.shared.state.in.us (10.19.14.68) with Microsoft SMTP Server (TLS) id 8.3.279.1; Wed, 25 Sep 2013 15:17:43 -0400
Received: from IOTMBSP1AVW.state.in.us ([169.254.2.89]) by IOTCHBP04VW.state.in.us ([10.19.106.104]) with mapi id 14.02.0342.004; Wed, 25 Sep 2013 15:17:43 -0400
From: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
To: <sherry.boldt@bp.com>, NW IN Forum - K Nelson <knelson@nwiforum.org>, "Save the Dunes" <Nathan@savethedunes.org>, Save the Dunes <cathy@savethedunes.org>, Patty Peterson <pipete0404@gmail.com>, Tim Chen <Tim.chen@bp.com>, <ekleese@gamil.com>, <ryan.j.metz@gmi.com>, Tita Lagrimas <tita.lagrimas@tradebe.com>, Douglas Bley <douglas.bley@arcelormittal.com>, Patrick Bennett <patrickbennett@email.com>, <dcarey@ci.gary.in.us>, <news@chestertontribune.com>, <rcazeau@atg.state.IL.us>, Cargill Inc <michael_golando@cargill.com>, Kellee Cobb <kcobb@superioroil.com>, "IN Wildlife B Simpson" <simpson@indianawildlife.org>
Subject: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Topic: NOTICE OF DECISION: NPDES FINAL RENEWAL: BP PRODUCTS NORTH AMERICA INC
Thread-Index: Ac66I+h2a1HW6DQJTyiAbb1fzz3ISg==
Disposition-Notification-To: "IVEY, DAMITA" <DIVEY@idem.IN.gov>
Date: Wed, 25 Sep 2013 19:17:43 +0000
Message-ID: <7B7640FE1057294DA9BCD38C98AFA3500F5676C4@IOTMBSP1AVW.state.in.us>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
x-originating-ip: [10.60.66.61]
Content-Type: multipart/alternative;
    boundary="_000_7B7640FE1057294DA9BCD38C98AFA3500F5676C4IOTMBSP1AVWstat_"
MIME-Version: 1.0
x-exclaimer-md-config: c4061e94-9ced-469b-8557-2bf163a357fe
X-RCIS-Action: ALLOW
Return-Path: DIVEY@idem.IN.gov
X-Forefront-Antispam-Report: CIP:108.59.49.249;CTRY:US;IPV:NLI;EFV:NLI;