National Pollutant Discharge Elimination System
FACT SHEET for
ArcelorMittal Burns Harbor, LLC

Indiana Department of Environmental Management
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Permittee:	ArcelorMittal Burns Harbor, LLC 250 West Highway 12 Burns Harbor, IN 46304
Existing Permit Information:	Permit Number: IN0000175 Expiration Date: August 31, 1993
Source Contact:	Doug Bley, Manager Water Programs Telephone = 330/659-9160 Fax = 330/659-9135 www.arcelormittal.com
Source Location:	250 West Highway 12 Burns Harbor, IN 46304 Porter County
Receiving Stream:	East Branch of the Little Calumet River East Arm of Port of Indiana / Burns Harbor in Lake Michigan Lake Michigan
Proposed Action:	Renew Permit: Date Application Received: March 11, 1993
Source Category	NPDES Major – Industrial
IDEM Contact:	Steve Roush Telephone = 317/233-5747 Fax = 317/232-8637 sroush@idem.in.gov

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1.0 INTRODUCTION

The existing National Pollutant Discharge Elimination System (NPDES) Permit expired on August 31, 1993. The Department received the renewal application from ArcelorMittal Burns Harbor, LLC on March 11, 1993. As this renewal application was submitted to the Department in a timely manner prior to the expiration date of the permit, the permit is considered to be administratively extended in accordance with 327 IAC 5-2-6(b). A five year permit renewal is proposed.

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Development of a Fact Sheet for NPDES permits is required by Title 40 of the Code of Federal Regulations, Section 124.8 and 124.6, as well as requirements in the Indiana Administrative Code (IAC) 327, Section 5. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Indiana Department of Environmental Management, as well as the methods by which the public can participate in the process of finalizing those actions.

The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines and other treatment-technology based standards, existing effluent quality, instream biological, chemical, and physical conditions, and the allocations of pollutants to meet the Indiana State Water Quality Standards.

Technology Based Effluent Limits are required by Section 301(b) of the Clean Water Act. Many of these have already been established by U.S. EPA in the effluent guideline regulations (a.k.a. categorical regulations) for industry categories in 40 CFR 405-499. Technology-based regulations for publicly-owned treatment works are listed in the Secondary Treatment Regulations (40 CFR Part 133). If regulations have not been established for a category of dischargers, the Commissioner may establish technology-based limits based on best professional judgment (BPJ).

IDEM evaluates the need for water-quality-based limits on a pollutant-by-pollutant basis. Wasteload allocations are used to develop these limits based on the pollutants that have been detected in the discharge and the receiving water's characteristics. In accordance with 327 IAC 5-1.5-69, a Wasteload allocation (WLA) is the portion of receiving water's loading capacity that is allocated to one (1) of its existing or future point sources of pollution. In the absence of a TMDL approved by EPA under 40 CFR 130.7 or an assessment and remediation plan developed and approved in accordance with 327 IAC 5-2-11.4(a), a WLA is the allocation for an individual point source, that ensures that the level of water quality to be achieved by the point source is derived from and complies with all applicable water quality standards.

The need for water-quality-based limits is determined by comparing the wasteload allocation for a pollutant to a measure of the effluent quality. The measure of effluent quality is called PEQ-Projected Effluent Quality. This is a statistical measure of the average and maximum effluent values for a pollutant. As with any statistical method, the more data that exists for a given pollutant, the more likely that PEQ will match the actual observed data. A PEQ is calculated by multiplying the highest measured value by a statistical factor that accounts for effluent variability and limitations associated with small data sets. For example, if only one sample exists, the factor is 6.2, for two samples – 3.8, for three samples 3.0, etc. The factors continue to decline as the sample size increases. If the pollutant concentrations are fairly constant, but the data set is small, these factors may make the PEQ appear larger than it would be shown to be if more sample results existed.

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2.0 FACILITY DESCRIPTION

2.1 General

The ArcelorMittal Burns Harbor facility is one of the largest fully integrated steel mills in North America, with capacity to produce approximately five (5) million tons of raw steel per year. The average raw steel production from 2002 through 2006 was 4.5 million tons of raw steel per year, with a maximum 4.65 million tons in 2002. Intermediate and final products include coke, sinter, molten iron, raw steel, hot rolled strip, plate, cold rolled strip, and hot-dipped galvanized strip. Detailed production rate information is provided in Section C.2 below.

Outfall 011 discharges, on average, approximately 74 million gallons per day (mgd) of treated process wastewaters from a central treatment system. The Outfall 011 discharge combines with non-contact cooling water and storm water and discharges to the East Branch of the Little Calumet River through Outfall 001. The long term average discharge from Outfall 001 is approximately 108 mgd, with a maximum monthly average of 137 mgd.

The Burns Harbor Plant is configured with process-specific treatment systems for the following operations:

Sinter Plant
Blast Furnaces C and D
Wet-Open Combustion BOFs (2) and Wet Suppressed Combustion BOF (1)
Continuous Casters (2)
Hot Strip Mill (80" HSM)
Plate Mills (110", 160" Plate Mills)
Cold Mills (Tandem and Temper Mills)

Discharges from those process-specific internal treatment systems are combined with process wastewaters from acid pickling lines (2), cold rolling mills (2), alkaline cleaning lines (2) and a hot dip galvanizing line and treated further in a central treatment system called the Secondary Wastewater Treatment Plant (SWTP). The effluent from the SWTP is further treated in two effluent polishing lagoons prior to discharge through Outfall 011. By-product coke plant process wastewaters are not discharged to surface waters at the Burns Harbor Plant and will not be regulated in the Burns Harbor renewal NPDES permit.

A map showing the location of the facility has been included as Figures 1, 2 and 3 below.

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Figure 1: Facility Map – All Outfalls

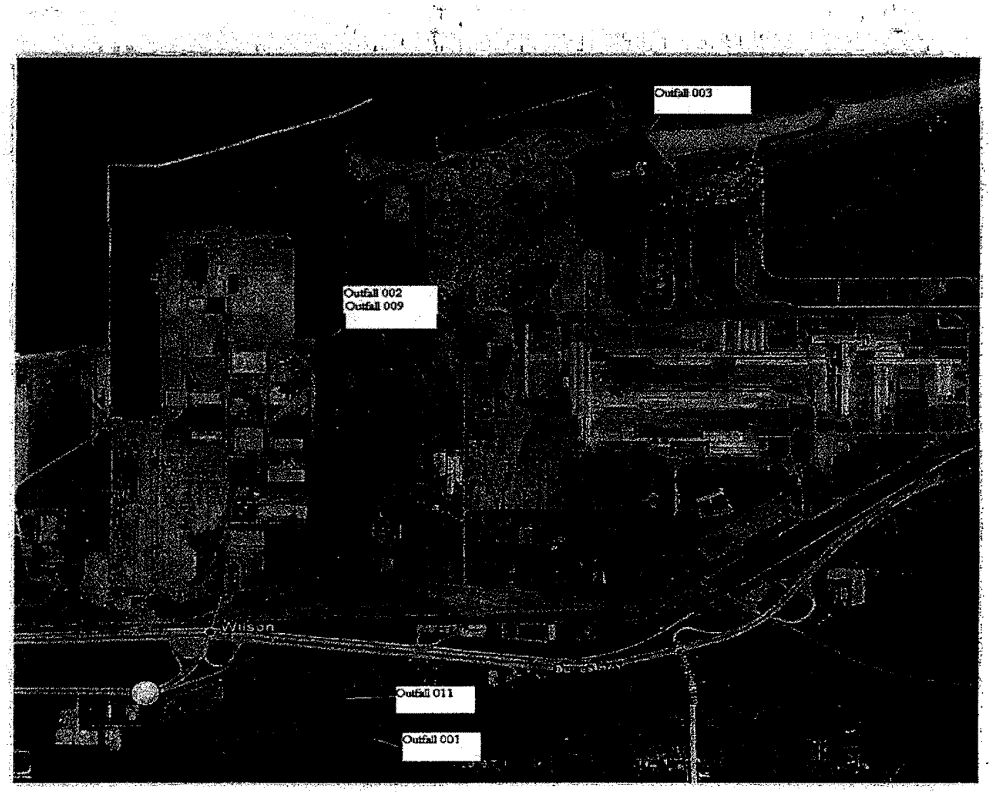

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Figure 2: Facility Map Outfalls 002 and 009

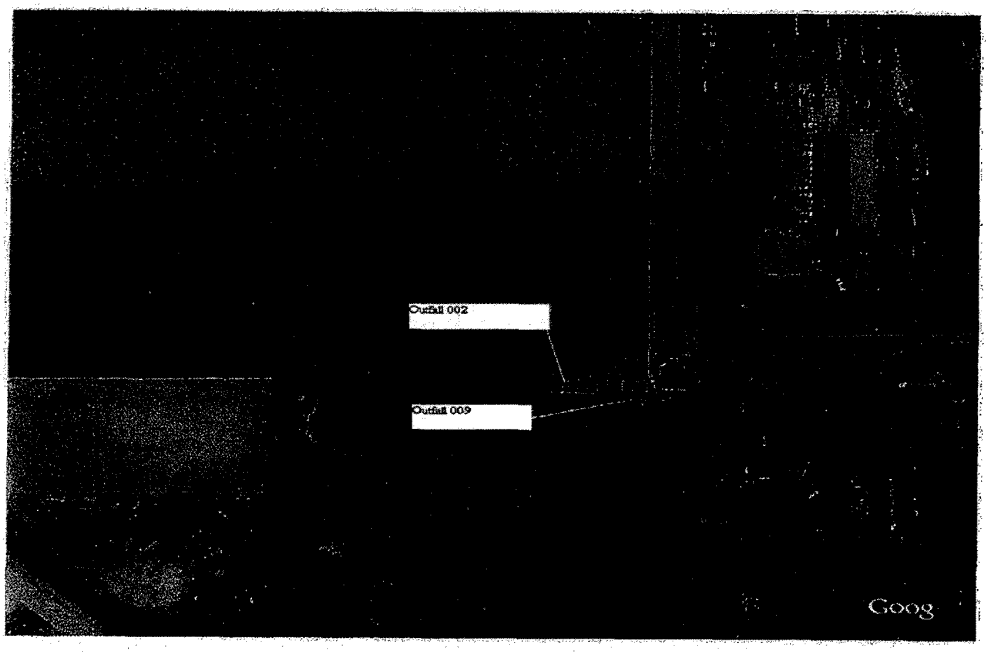

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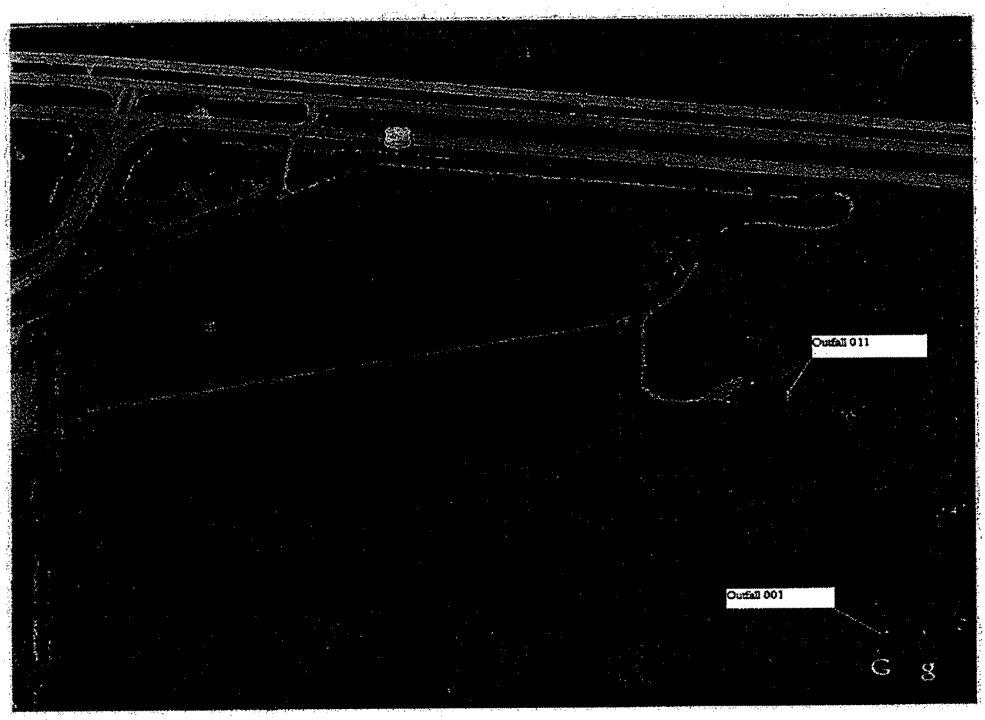
Figure 3: Facility Map Outfalls 011 and 001



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2.2 Outfall Locations

Outfall 001:

Receiving Waters - East Branch, Little Calumet River
Long term average flow rate – 108 MGD
Maximum monthly flow rate - 137 MGD
Latitude: 41^0 36' 45"
Longitude: 87^0 08' 50"

The discharge from Outfall 001 is comprised of treated process wastewaters from Internal Monitoring Location Outfall 011 (Secondary Wastewater Treatment Plant), non-contact cooling water, storm water, and Lake Michigan water used for control of effluent temperature.

Outfall 002:

Receiving Waters – Burns Waterway Harbor/Lake Michigan
Long term average flow rate - 212 MGD
Maximum monthly flow rate – 288 MGD
Latitude: 41^0 38' 07"
Longitude: 87^0 08' 51"

The discharge from Outfall 002 is comprised of non-contact cooling water and storm water from the coke plant, sinter plant, blast furnaces, steelmaking area, power station, slab mill (operations are suspended), and the shops complex. Storm water also enters the storm sewer at various locations, and the Outfall 002 discharge also contains pumped groundwater from building dewatering at the shop complex, power station, and slab yard.

Outfall 003:

Receiving Waters – Lake Michigan
Long term average flow rate – Estimated at 1.4 MGD
Maximum monthly flow rate – No data available
Latitude: 41^0 38' 42"
Longitude: 87^0 07' 38"

The discharge from Outfall 003 is comprised of the backwash from the Nos. 1 and 2 Lake Water Pump Stations traveling screens. These stations contain traveling screens which screen the influent Lake Michigan water. Lake Michigan water from the pump station wet well is used to backwash the screens.

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Outfall 009:

Receiving Waters – Burns Waterway Harbor/Lake Michigan
Long term average flow rate – No data available
Maximum monthly flow rate – No data available
Latitude: 41^0 38' 45"
Longitude: 87^0 08' 30"

The discharge from Outfall 009 is comprised of storm water from the area immediately East of the Burns Harbor Waterway. The discharge enters the Burns Harbor Waterway in the area immediately South of Outfall 002.

Internal Monitoring Location (Outfall) 011 Secondary Wastewater Treatment Plant:

Receiving Waters – The discharge from the Secondary Wastewater Treatment Plant (internal monitoring location 011) combines with non-contact cooling water and storm water to become Outfall 001. Outfall 001 discharges to the East Branch of the Little Calumet River.

Long term average flow rate - 73.7 MGD
Maximum monthly flow rate - 78.8 MGD

The process wastewaters from the following operations are treated in the Secondary Wastewater Treatment Plant (SWTP):

Sintering; Iron Making (Blast furnaces C and D); Steelmaking (Basic Oxygen Furnaces Nos. 1, 2, and 3; Vacuum Degassing; Continuous Casting (Casters Nos. 1 and 2), Hot Forming (110" Plate Mill, 160" Plate Mill, and the 80" Hot Strip Mill); Acid Pickling (No.s 1 and 2 Picklers and the Continuous Heat Treat Line); Cold Rolling (Tandem Mill and Temper Mill); Alkaline Cleaning (Continuous Heat Treat Line; and Hot Dip Coating Line) and the Hot Dip Coating (Galvanizing) Operations. Storm water and dewatering wastewater from various building foundations and from the dock wall enter the SWTP. Additionally, treated sanitary sewage from the ArcelorMittal Burns Harbor Facility and from the Town of Burns Harbor enters the SWTP's polishing lagoons prior to Internal Monitoring Location 011.

Internal Monitoring Location (Outfall) 111:

Receiving Waters – The discharge from internal monitoring location 111 combines with other process wastewater generated throughout the facility and receives additional treatment at the SWTP. This wastewater is ultimately discharged

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through internal monitoring location 011 and to the East Branch of the Little Calumet River via Outfall 001.

Long term average flow rate – New outfall; No flow date available
Maximum monthly flow rate – New outfall; No flow date available

The discharge from Internal Monitoring Location (Outfall) 111 is the treated effluent from ArcelorMittal Burns Harbor's sinter plant operations, and is designated as the discharge from the final thickener at the Reclamation Services Building (RSB).

2.3 Wastewater Treatment Description

The blast furnaces, basic oxygen furnaces, vacuum degasser and continuous casters are equipped with dedicated, high rate wastewater treatment and recycle systems. The blowdown wastewater from these systems is directed to the secondary wastewater treatment facility for additional treatment.

The sinter plant blast furnace recycle system consists of two thickeners (i.e., one for each furnace), a cooling tower and a pump house for recirculating treated process water for reuse at the blast furnaces. Periodic blowdown from or lake water make-up to this system occurs throughout the day in order to maintain a hydraulic balance within the recycle system. The blowdown is discharged to the plant's dirty industrial wastewater (DIW) sewer system for further treatment at the Secondary Wastewater Treatment Plant (SWTP) prior to discharge to surface waters of the State. In the event the recycle system experiences elevated concentrations of cyanide, a steady-state blowdown can be directed to an alkaline chlorination system to destroy the cyanide before discharge to the SWTP.

The sinter plant has a recirculating gas cleaning system. Excess moisture is added to this system by virtue of the process and is blown down to the Reclamation Services Building (RSB) for treatment. After pH adjustment and the addition of flocculation/coagulation polymers, the wastewaters are directed to the final thickener for preliminary clarification. The effluent of the final thickener discharges to the DIW sewer system for further treatment at the SWTP.

The basic oxygen furnace recycle system consists of two thickeners that treat the gas cleaning process waters prior to recycling back to the gas cleaning system or blowdown to the DIW sewer system for further treatment at the SWTP.

The continuous casters (2) are equipped with scale pits for the removal of suspended solids and oil. The hot forming mills (two plate mills and the hot strip mill) are also equipped with scale pits and oil skimming equipment. The facilities recycle a portion of the scale pit effluent water for use in the production process and the balance is discharged to the DIW sewer system for further treatment at the SWTP.

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Wastewaters generated from the hot dip (galvanizing) coating line are filtered prior to discharge to the DIW in order to remove particulate zinc. Waste pickling acids are either used on site to neutralize wastewaters, sold for off-site recycling or disposed of by deep well injection. Pickling rinse waters and fume scrubber blowdown are combined with pretreated wastewaters from the cold rolling operations and directed, via the DIW sewer system, to the SWTP for final treatment.

Contaminated groundwater from the ore dock area is recovered and used as a replacement for lake water in the gas cleaning systems of either the Sinter Plant or the Blast Furnaces. As noted above, the blowdown from these systems receive initial treatment at the generation site and secondary treatment at the SWTP.

Most of the facility's wastewaters receive primary treatment at their source and final treatment at the SWTP. Final treatment includes pH adjustment, oil separation, flocculation/coagulation and clarification prior to discharge through several open channel conveyances before reaching the East Branch of the Little Calumet River. Sludges generated by the SWTP will be disposed on-site in a permitted Type 1 solid waste landfill (to be constructed). Any leachate generated by the landfill will also undergo preliminary treatment prior to discharge to the DIW and SWTP.

The SWTP effluent is routed through two lagoons prior to discharge through internal Outfall 011 and final Outfall 001 into the East Branch of the Little Calumet River. The lagoons are equipped with aerators for temperature control. Lake Michigan water can also be added to the Outfall 011 discharge during warm weather months for additional temperature control at a point after the discharge from Outfall 011 and prior to the monitoring point for Outfall 001.

The wastewater treatment system has an average discharge of approximately 74 MGD and has been given a Class D industrial wastewater treatment plant classification in accordance with 327 IAC 5-22.

A Flow Diagram has been included as Figure 4 below.

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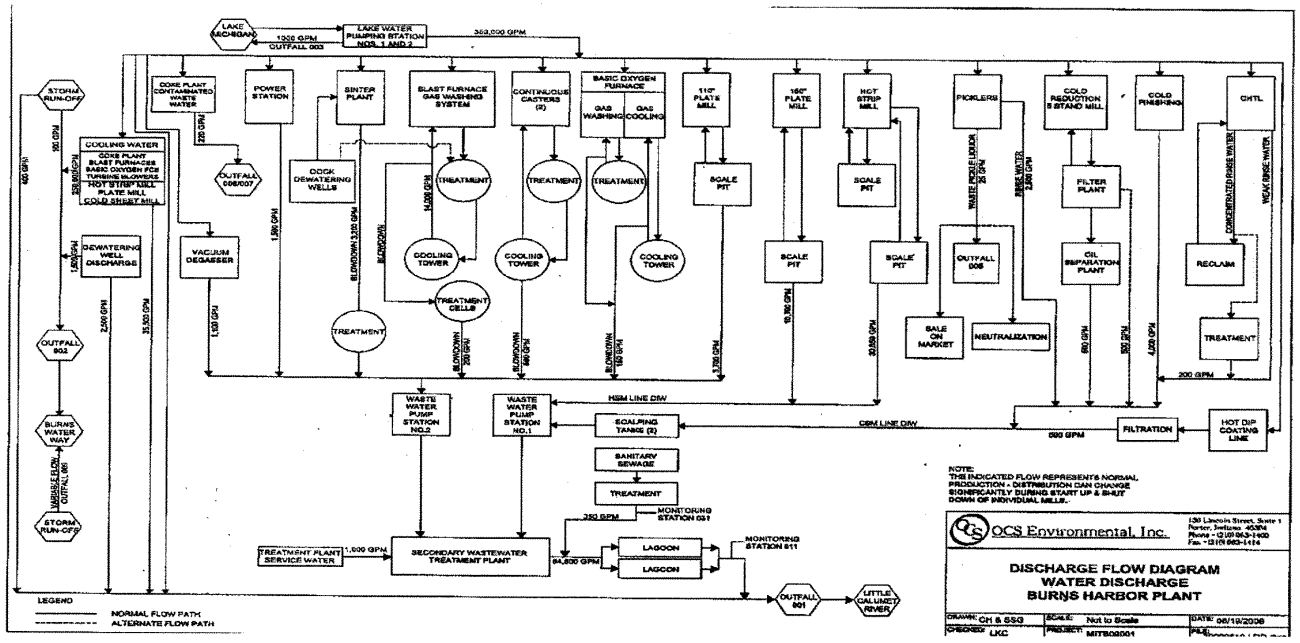
Figure 4 Wastewater Flow Diagram



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2.4 Changes in Operation

1. Outfalls No Longer Regulated by the NPDES Permit

a. Outfalls 005, 006 and 007 Deep Well Injection Points

The deep wells, which discharge the wastewater into ground water approximately 4,000 feet below the Earth's surface, are not regulated by the NPDES program in Indiana, and thus are not included in the proposed NPDES permit.

The previous NPDES Permit (Effective Date October 1, 1988) contained Outfalls 005, 006 and 007. These outfalls were designated to regulate the discharge of process wastewater from the acid pickling operations (005) and cokemaking (006 and 007) into deep well injectors. These deep well injectors are regulated by the USEPA, and they are classified as Class I Injection Wells. The USEPA identification numbers for these wells are: IN-127-1W-0001; IN-127-1W-0002; IN-127-1W-0003 and IN-127-1W-0004.

The Commissioner may require additional controls over the operation of these injection wells, pursuant to 327 IAC 3-4 and 327 IAC 5-4. The Commissioner may prohibit or control the discharge from the injection wells through the issuance of construction and operation permits under 327 IAC 3 so as to prevent pollution of ground waters of the state of such character and degree as would endanger or threaten to endanger the public health and welfare.

b. Outfall 031 - Sanitary Wastewaters

The discharge from the Burns Harbor WWTP is regulated by Operational Permit No. INJ060801. There is no need to regulate the discharge from the Burns Harbor WWTP using two permits (Operational and NPDES) when only one of the two permits is necessary and appropriate. The Operational Permit is appropriate for the discharge of wastewater from any source (public or private), Burns Harbor WWTP, to a privately owned treatment system, ArcelorMittal's Central Wastewater Treatment Plant. NPDES Permit Regulations (327 IAC 5) only address the discharge of wastewater into a Publicly Owned Treatment Plant. Therefore, Outfall 031 will be removed from this NPDES permit.

The previous NPDES Permit (Effective Date October 1, 1988) contained Outfall 031. The discharge from this outfall has always been treated sanitary wastewater. The previous owners of ArcelorMittal Burns Harbor (Bethlehem Steel) owned and operated the activated sludge wastewater treatment facility which is designed to treat the sanitary sewage generated throughout the steel mill. In 2005, the Town of Burns Harbor purchased this sanitary wastewater treatment facility from ArcelorMittal Burns Harbor, and connected their sanitary wastewater into this treatment facility. While, the Town of Burns Harbor owns the municipal wastewater treatment plant (WWTP) the facility is operated by ArcelorMittal Burns Harbor, LLC.

The WWTP has an average design flow rate of 1.05 MGD. The WWTP is an extended aeration activated sludge type facility consisting of a fine screen, a splitter box, an equalization basin, two aeration tanks, two clarifiers, a chlorination chamber, and an effluent flow meter. Sludge is treated by aerobic digestion, dewatered in sludge drying beds, and deposited in a landfill. The facility's collection system is a 100% separate sanitary sewer system by design. There are no bypass points designed into the WWTP, and no overflow points designed into the collection system. The treatment system has a Class II wastewater treatment plant classification in accordance with 327 IAC 5-22-4 (applicable under 327 IAC 3-4-3). The discharge from the sanitary sewage treatment facility is routed through the secondary wastewater treatment facility's polishing lagoons, and becomes part of the discharge through Internal Monitoring Location (Outfall) 011.

2.5 Facility Storm Water

According to 40 CFR 122.26(b)(14)(ii), facilities classified as Standard Industrial Classification (SIC) Code 3312, 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 regulated by an NPDES Permit.

All storm water is discharged through outfalls 001, 002 and 009. The proposed permit contains monitoring requirements for these outfalls, in addition to the requirement that a Storm Water Pollution Prevention Plan (SWPPP) be developed and implemented.

3.0 PERMIT HISTORY

3.1 Compliance history

1. Compliance History: There are no pending or active enforcement actions for violations of the NPDES permit. The following violations have recently occurred:

Monitoring Period End Date	DMR Value Received Date	Perm Feature ID	Limit Set Designator	Parameter Desc	Limit Unit Short Desc	Statistical Base Short Desc	Limit Frequency of Analysis Desc	Limit Value	DMR Value Qualifier Code	DMR Value
3/31/2010	5/3/2010	001	A	Temperature, water deg. fahrenheit	deg F	DAILY MX	Continuous	65	=	66
1/31/2009	3/4/2009	001	A	Nitrogen, ammonia total (as N)	mg/L	DAILY MX	Three Per Week	0.86	=	1
8/31/2008	9/30/2008	002	A	Chlorine, total residual	mg/L	DAILY MX	Weekly	0.05	=	0.1
7/31/2008	9/3/2008	011	A	Zinc, total (as Zn)	lb/d	DAILY MX	Three Per Week	99.7	=	151.8
1/31/2008	3/4/2008	011	A	Oil & grease	lb/d	DAILY MX	Three Per Week	6000	=	6036
8/31/2007	10/4/2007	001	A	Temperature, water deg. fahrenheit	deg F	DAILY MX	Continuous	86	=	87
7/31/2007	9/5/2007	011	A	Solids, total suspended	lb/d	DAILY MX	Three Per Week	20000	=	39684
7/31/2007	9/5/2007	011	A	Solids, total suspended	lb/d	MO AVG	Three Per Week	6000	=	6302
3/31/2007	5/2/2007	011	A	Oil & grease	lb/d	DAILY MX	Three Per Week	6000	=	9880
2/28/2007	4/3/2007	011	A	Oil & grease	lb/d	DAILY MX	Three Per Week	6000	=	18223
1/31/2007	3/2/2007	002	A	Temperature, water deg. fahrenheit	deg F	DAILY MX	Continuous	55	=	56

2. The most recent inspection of this facility took place on March 5, 2009. The following is taken from the Inspection Summary/Violation Letter:

The effluent flow from outfalls 001 and 011 were mildly turbid. A bypass of the secondary wastewater treatment plant occurred on August 24, 2007 and it was properly reported to IDEM.

http://www.epa-echo.gov/echo/compliance_report_water_icp.html
[Link to ECHO]

https://icis.epa.gov/icis/jsp/common/LoginBody.jsp
[Link to ICIS]

4.0 RECEIVING WATER

The receiving stream for Outfall 001 is the East Branch of the Little Calumet River. The $Q_{7,10}$ low flow value of the East Branch of the Little Calumet River is 21 cfs. The East Branch of the Little Calumet River is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via the Portage-Burns Waterway are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery. The East Branch of the Little Calumet River enters the Indiana Dunes National Lakeshore at US Highway 20 (upstream of Outfall 001) and leaves the Indiana Dunes National Lakeshore about 0.5 miles upstream of its confluence with Portage-Burns Waterway (about 1.0 miles downstream of Outfall 001). All waters incorporated in the Indiana Dunes National Lakeshore are designated in 327 IAC 2-1.5-19(b)(3) as an outstanding state resource water (OSRW). East Branch of the Little Calumet River also has the designation agricultural use water as designated in 327 IAC 2-1.5-5(a)(6).

The receiving waterbody for Outfalls 002 and 009 is the East Arm of the Port of Indiana/Burns Harbor. This portion of Burns Harbor is considered part of the open waters of Lake Michigan as per 327 IAC 2-1.5-2(64).

The receiving waterbody for Outfall 003 is Lake Michigan. The Indiana portion of the open waters of Lake Michigan is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The Indiana portion of the open waters of Lake Michigan is designated in 327 IAC 2-1.5-5(a)(3)(G) as a salmonid water and shall be capable of supporting a salmonid fishery. The Indiana portion of the open waters of Lake Michigan is designated in 327 IAC 2-1.5-19(b)(2) as an outstanding state resource water (OSRW). The Indiana portion of the open waters of Lake Michigan is also has the designation of public water supply, industrial water supply, and agricultural use water as designated in 327 IAC 2-1.5-5(a)(4), (5), and (6).

Mixing zones in Lake Michigan for thermal discharges are equal to a one thousand foot arch inscribed from a point adjacent to the discharge in accordance with 327 IAC 2-1.5-8(c)(4)(D)(iv). Mixing zones for pollutants other than heat may be established in Lake Michigan

with the approval of an alternate mixing zone in accordance with 327 IAC 5-2-11.4(b)(6). No alternate mixing zones have been sought or approved for Outfall Nos. 002 and 003. Therefore, no mixing zone is allowed for pollutants other than heat at these outfalls.

5.0 PERMIT LIMITATIONS

Two categories of effluent limitations exist for NPDES permits: 1) Technology based effluent limits, and 2) Water quality based effluent limits.

Technology based effluent limits are developed by applying the national effluent limitation guidelines (ELGs) established by EPA for specific industrial categories. Technology based effluent limits were established to require a minimum level of treatment for industrial or municipal sources using available technology. In the absence of federally promulgated guidelines can also be based upon BPJ. Technology based limits are the primary mechanism of control and enforcement of water pollution under the CWA. Technology based treatment requirements under section 301(b) of the CWA represent the minimum level of control that must be imposed in a section 402 permit [40 CFR 125.3(a)]. 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 technology-based effluent limits 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 for BPT, BAT and BCT have all passed, compliance schedules are also not allowed.

Water quality based effluent limits are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The need for WQBELs is determined by application of the reasonable potential procedures contained in 327 IAC 5-2-11.5. WQBELs are developed using the water quality criteria in 327 IAC 2-1.5, the wasteload allocation procedures in 327 IAC 5-2-11.4 and the procedures for converting wasteload allocations into WQBELs in 327 IAC 5-2-11.6. In addition to numeric WQBELs, the narrative water quality criteria contained in 327 IAC 2-1.5-8 have been included in this permit to ensure that the narrative water quality criteria are met.

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, whichever is most stringent.

5.1 Existing Permit Limits

Outfall 001

DISCHARGE LIMITATIONS

Table 1-1

Parameter	Quantity or Loading Monthly Average	Daily Maximum	Units	Quality or Concentration Monthly Average	Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Flow	Report	Report	MGD	-	-	-	5 x Week	24 Hour total
Total Suspended Solids	Report	Report	lbs/day	Report	Report	mg/l	1 x Week	24 Hr. Comp
Oil & Grease	Report	Report	lbs/day	Report	Report	mg/l	1 x Week	Grab
Phenols (4AAP)	14.0	22.0	lbs/day	Report	Report	mg/l	3 x Week	24 Hr. Comp.
Temperature	See table	1-3		Report	Report	^{0}F	Continuous	
Total Cyanide	Report	Report	lbs/day	Report	Report	mg/l	1 x Week	24 Hr. Comp.
Total Residual Chlorine				0.02	0.04	mg/l	1 x Week	Grab
Total Residual Oxidants					0.05	mg/l	1 x day	Grab

Outfall 001

Table 1-2

	Pounds per Day (lbs/day) 7-Day Average	Daily Maximum	Milligrams per Liter (mg/l) 7-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Ammonia as N						
January	720	915	0.68	0.86	3 x Week	24 Hr. Comp.
February	645	910	0.72	1.02	3 x Week	24 Hr. Comp.
March	940	1300	0.9	1.27	3 x Week	24 Hr. Comp.
April	730	1030	0.82	1.16	3 x Week	24 Hr. Comp.
May	680	970	0.74	1.05	3 x Week	24 Hr. Comp.
June	650	920	0.62	0.87	3 x Week	24 Hr. Comp.
July	375	540	0.36	0.51	3 x Week	24 Hr. Comp.
August	385	540	0.37	0.52	3 x Week	24 Hr. Comp.
September	550	775	0.82	1.16	3 x Week	24 Hr. Comp.
October	635	900	0.67	0.95	3 x Week	24 Hr. Comp.
November	530	680	0.47	0.6	3 x Week	24 Hr. Comp.
December	635	900	0.9	1.27	3 x Week	24 Hr. Comp.

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Table 1-3

Parameter	Quality or Concentration Daily Minimum	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
pH	6.0	9.0	s.u.	Continuous	Probe

Table 1-4

The highest temperature sustained over any two hour period within each 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	60	60	65	71	81	83	86	86	85	80	75	65

Outfall 002

DISCHARGE LIMITATIONS

Table 2-1

Parameter	Quantity or Loading Monthly Average	Daily Maximum	Units	Quality or Concentration Monthly Average	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Continuous	24 Hour Total
TSS	Report	Report	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hour Comp
Oil and Grease	Report	Report	lbs/day	Report	Report	mg/l	1 x Weekly	Grab
Ammonia as N	Report	Report	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hour Comp
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 x Weekly	24 Hour Comp
Iron, Dissolved	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hour Comp
Chloride	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hour Comp
Sulfate	Report	Report	lbs/day	Report	Report	mg/l	1 x Monthly	24 Hour Comp
Total Residual Chlorine	Report	Report	lbs/day	20	40	ug/l	1 x Weekly	Grab

Table 2-2

Parameter	Quality or Concentration Daily Minimum	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
pH	6.0	9.0	s.u.	Continuous	Probe

Outfall 002

Table 2-3

The highest temperature sustained over any two hour period within each 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	55	57	63	69	77	82	88	90	88	81	72	63

Outfall 003

DISCHARGE LIMITATIONS

Table 3-1

	Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Total Residual Chlorine	0.02	0.04	mg/l	1 x Week	Grab
Total Residual Oxidants		0.05	mg/l	1 x Day	Grab

Outfall 005

DISCHARGE LIMITATIONS

Table 5-1

	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				Continuous	Recorded
Temperature					Report	°F	Continuous	Recorded
Conductivity					Report	umho/c	Continuous	Grab
Total Iron	Report	Report	lbs/day				5 x Week	Grab
Injection Pressure		Report	PSI				Continuous	Recorded
Total Dissolved Solids	Report	Report	lbs/day				5 x Week	Grab
Specific Gravity	Report	Report	mg/l				3 x Week	Grab
Differential Pressure		Report	PSI				Continuous	Recorded
Free Acid				Report	Report	%	5 x Week	Grab

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Outfall 006

DISCHARGE LIMITATIONS

Table 6-1

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
Flow	Report	Report	MGD				Continuous	Recorded
Temperature					Report	^{0}F	Continuous	Recorded
Ammonia as N	Report	Report	lbs/day				5 x Week	Grab
Total Cyanide	Report	Report	lbs/day				5 x Week	Grab
Phenol (4AAP)	Report	Report	lbs/day				5 x Week	Grab
Injection Pressure	Report	Report	PSI				Continuous	Recorded
Differential Pressure	Report		PSI				Continuous	Recorded

Table 6-2

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.	Continuous	Probe

Outfall 007

DISCHARGE LIMITATIONS

Table 7-1

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
Flow	Report	Report	MGD				Continuous	Recorded
Temperature					Report	^{0}F	Continuous	Recorded
Ammonia as N	Report	Report	lbs/day				5 x Week	Grab
Total Cyanide	Report	Report	lbs/day				5 x Week	Grab
Phenol (4AAP)	Report	Report	lbs/day				5 x Week	Grab
Injection Pressure	Report	Report	PSI				Continuous	Recorded
Differential Pressure	Report		PSI				Continuous	Recorded

Table 7-2

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.	Continuous	Probe

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Internal Outfall 011

DISCHARGE LIMITATIONS

Table 11-1

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
Flow	Report	Report	MGD	-	-	-	5 x Week	24 Hour Total
Total Suspended Solids	6000	20000	lbs/day				3 x Week	24 Hr. Comp
Oil and Grease		6000	lbs/day				3 x Week	Grab
Total Cyanide		21	lbs/day				3 x Week	24 Hr. Comp
Total Lead	22.8	66.9	lbs/day	Report	Report	mg/l	3 x Week	24 Hr. Comp
Total Zinc	34.6	99.7	lbs/day	Report	Report	mg/l	3 x Week	24 Hr. Comp
Ammonia as N	Report	Report	lbs/day	Report	Report	mg/l	3 x Week	24 Hr. Comp
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	3 x Week	24 Hr. Comp
Chloride	Report	Report	lbs/day	Report	Report	mg/l	1 x Month	24 Hr. Comp
Sulfate	Report	Report	lbs/day	Report	Report	mg/l	1 x Month	24 Hr. Comp
Total Residual Chlorine	Report	Report	lbs/day	Report	Report	mg/l	3 x Week	Grab

Internal Outfall 031

DISCHARGE LIMITATIONS

Table 31-1

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
Flow	Report	Report	MGD				5 x Week	24 Hr. Total
BOD				30	45	mg/l	3 x Week	Grab
Total Suspended Solids				30	45	mg/l	3 x Week	Grab
Fecal Coliform				200	400	#/100ml	1 x Week	Grab

5.2 Technology-Based Effluent Limits

a. Iron and Steel Manufacturing Point Source Category

The applicable technology based effluent limitation guidelines for the ArcelorMittal Burns Harbor facility are established in 40 CFR 420, Iron and Steel Manufacturing Point Source Category. This category establishes effluent limitations guidelines for sintering, ironmaking, steelmaking, vacuum degassing, continuous casting, hot forming, acid pickling, cold rolling, alkaline cleaning, and hot coating operations.

Cokemaking operations are also regulated by 40 CFR Part 420; however, because ArcelorMittal Burns Harbor disposes of a portion of its cokemaking process wastewaters by deep well injection and the balance is treated and disposed of by coke quenching, process wastewaters from cokemaking operations are not regulated by the proposed permit (there is no discharge of process wastewaters from the cokemaking operations - and ArcelorMittal Burns Harbor is not authorized to discharge cokemaking wastewaters - to surface waters of the State of Indiana).

The effluent guidelines establish allowable pollutant loadings based upon the actual production rates associated with each individual manufacturing process. ArcelorMittal Burns Harbor supplemented their NPDES Permit application with production information for the previous five years (2002 through 2006). Based on this information, the following "NPDES Permit production rates" were calculated in accordance with 40 CFR 420.04, and these production rates were used in the calculation of the technology based effluent limitations:

Table TBEL#1
Production Figures Used to Calculate Technology Based Limitations

Process	Tons/Day
Cokemaking	NA
Sintering	11,849.2
Ironmaking	
Blast Furnace C	7,601.3
Blast Furnace D	7,544.0
Steel Making	
Basic Oxygen Furnace No. 1 (Open Combustion)	8,527.9
Basic Oxygen Furnace No. 2 (Open Combustion)	8,468.3
Basic Oxygen Furnace No. 3 (Suppressed Combustion)	8,721.2
Vacuum Degassing	6,405.0
Continuous Casting	
Continuous Caster No. 1	12,889.2
Continuous Caster No. 2	13,472.2
Hot Forming	
Hot Forming - Primary (with Scarfing)	0.0
Hot Forming - 160" Plate Mill	3,460.0
Hot Forming - 110" Plate Mill	3,328.7

Hot Forming - 80" Hot Strip Mill	16,509.5
Acid Pickling Hydrochloric	
No. 1 Pickler	4,796.6
No. 2 Pickler	6,084.8
Continuous Heat Treat Line (CHTL)	1,402.5
Cold Rolling	
Cold Rolling - Tandem Mill - 5 Stand	8.794.3
Cold Rolling - Tandem Mill – 2 Stand	0.0
Cold Rolling - Temper Mill	6,530.8
Alkaline Cleaning	
Continuous Heat Treat Line (CHTL)	1,402.5
Hot Dip Galvanizing Line (HDCL)	1,843.3
Hot Coating	
Hot Dip Coating (Galvanizing) Line (HDGL)	1,843.3

In accordance with 40 CFR 122.45(b)(2)(i), and considering the category-specific provisions of 40 CFR 420.04(b), the daily NPDES Permit production rates listed above were derived from actual production information supplied by ArcelorMittal Burns Harbor. The NPDES permit production rates are based upon the highest monthly production in the years 2002 through 2006.

Typically technology based effluent limitations are established for the discharge from each individual process. However, many steel mills have centralized wastewater treatment facilities designed to treat the combination of all such process wastewater at a centralized location. 40 CFR 420.01 (a) identifies specific steel mills, and their associated centralized treatment facilities, for which alternative effluent limitations may be established. ArcelorMittal Burns Harbor (Bethlehem Steel), NPDES Permit No. IN000175, is identified in 40 CFR 420.01 (a), and the alternative effluent limitations from the central treatment facility (known at ArcelorMittal Burns Harbor as the Secondary Wastewater Treatment Facility) are applicable to the process wastewaters from the Total Plant (entire Steel Mill). The technology based effluent limitations for Internal Monitoring Location (Outfall) 011 are established by combining all of the allowable pollutant loads contained in 40 CFR Part 420 for each individual process, because all process wastewater is discharged through this location. Therefore the alternative effluent limitations are merely a summation of the applicable limitations (allowable mass loadings) for each individual process within the steel mill. The only exception is for 2,3,7,8 Tetrachlorodibenzofuran which is limited at internal monitoring location 111.

40 CFR 420.23(a) contains a BAT effluent limitation guideline for 2,3,7,8-tetrachlorodibenzofuran (2,3,7,8-TCDF), which is a toxic pollutant associated with sinter plant process wastewaters. 40 CFR 420.29(a) requires that compliance with 2,3,7,8-TCDF effluent limitations contained in the NPDES permit effluent limitations be determined at the discharge from the sinter plant wastewater treatment; or, if sinter plant and blast furnace wastewaters are combined for treatment, at the effluent of the combined wastewater treatment system prior to mixing with more than 5% by volume of other process or non-process wastewaters. Therefore, the technology based effluent limitation for 2,3,7,8-TCDF will be applied at internal monitoring location 111; the discharge of process wastewater from the sintering operations.

The applicable technology-based effluent limitations guidelines, production rates, and resulting allowable loading of regulated pollutants for the ArcelorMittal Burns Harbor facility are presented in Part 8 of the fact sheet. The technology based effluent limitations were determined by applying the appropriate BPT, BAT or BCT effluent limitations guidelines or NSPS contained in 40 CFR Part 420, to compute the allowable discharges of the regulated pollutants. IDEM developed BPJ/BAT effluent limits for Zinc and Lead for the Hot Forming subcategory using the 1982 EPA Development Document, Vol IV, Page 345 (EPA 440/1-82/024; May 1982) using the more recent production rates. The new production rates produced effluent limits for Lead and Zinc that are less stringent than the existing effluent limits. However, the limits from the existing permit will be retained due to anti-backsliding requirements found in 327 IAC 5-2-10(11).

The technology-based effluent limitations for Internal Monitoring Location (Outfall) 011 are summarized in Table 2. The technology-based effluent limitations for Internal Monitoring Location (Outfall) 111 are presented in Table 3.

Table TBEL#2
Monitoring Location 011 Technology-Based Effluent Limitations and Standards Based on the 40 CFR Part 420 Guidelines and the Recent Production Rates

Pollutant	Effluent Limitations	
	Monthly Average	Daily Maximum
Total Suspended Solids	11,768.9 lbs/day	32,078 lbs/day
Oil & Grease**	1,048.2 lbs/day	7,412.3 lbs/day
Ammonia-N	207.2 lbs/day	620.8 lbs/day
Total Cyanide	62.1 lbs/day	124.1 lbs/day
Phenols (4AAP)	2.07 lbs/day	4.14 lbs/day
Total Lead [1]	25.9 lbs/day	77.7 lbs/day
Total Zinc	37.1 lbs/day	111.1 lbs/day
Hexavalent Chromium	0.19 lbs/day	0.56 lbs/day
Total Residual Chlorine*	--	4.42 lbs/day
Naphthalene***	--	0.67 lbs/day
Tetrachloroethylene (TCE)***	--	1.01 lbs/day

*The chlorine limit is applicable only when the sintering process water is chlorinated. ArcelorMittal Burns Harbor does not chlorinate their sintering process water, and therefore a total residual chlorine (TRC) limit is not proposed. However, TRC monitoring is required when the alkaline chlorination wastewater treatment system is being used.

**The monthly average mass limits for oil and grease are below the LOD and LOQ for the approved analytical method, therefore, the monthly average limits are being removed from the permit. This is consistent with the existing permit limits.

***A monitoring waiver was submitted by ArcelorMittal for these pollutants. Although the monitoring results indicate that these pollutants are not present in the discharge from outfall 011, the discharge must be measured for a minimum of one year to account for potential seasonal fluctuations in effluent quality. Therefore, the discharge shall be monitored and limited in the permit with a re-opener clause allowing ArcelorMittal to request a monitoring waiver after the discharge from outfall 011 has monitored for one year after the effective date of the permit.

[1] The Technology based effluent limitations for Lead at internal outfall 011 are less stringent than the water quality-based effluent limitations for Lead listed above. Lead shall be monitored at outfall 011 without any effluent limitations.

Table TBEL#3
Monitoring Location 111 Technology-Based Effluent Limitations and Standards Based on the 40 CFR Part 420 Guidelines and the NPDES Production Rates

Pollutant	Effluent Limitations	
	Monthly Average	Daily Maximum
2,3,7,8 Tetrachlorodibenzofuran	N/A	<ML [1]

[1] The limitation and standard for 2,3,7,8 – tetrachlorodibenzofuran (2,3,7,8 – TCDF) is expressed as less than the Minimum Level ("<ML"). The term Minimum Level (ML) means the level at which the analytical system gives recognizable signals and an acceptable calibration point. For 2,3,7,8 – TCDF, the minimum level is 10 pg/l per EPA Method 1613B for water and wastewater samples. The term pg/L means picograms per liter (ppt = 1.0 X 10^{-12} gram/L).

Applicability of Temporary Exclusion for Central Treatment Facilities to ELGs for 2,3,7,8-TCDF in Wastewater from Sintering Operations.

40 C.F.R. Part 420 includes the categorical effluent limitation guidelines (ELGs) for the iron and steel manufacturing point source category. Part 420 was initially promulgated in 1982 and has been amended since then, including on October 17, 2002 (67 Fed. Reg. 64216). The 2002 modifications included new or revised technology-based ELGs for certain wastewater discharges for direct reduced ironmaking, briquetting, and forging, and for certain wastewater discharges associated with metallurgical cokemaking, ironmaking and sintering operations. The 2002

revisions to the sintering operations category included new ELGs for 2,3,7,8-TCDF for sintering operations that have wet air pollution control systems.

40 C.F.R. § 420.01(b) includes a temporary exclusion from the requirements in Part 420 for certain central treatment facilities, including Bethlehem Steel's facility in Burns Harbor, IN, provided the owner or operator of the facility requested, prior to July 26, 1982, the Agency to consider establishing alternative effluent limitations for their facility and provided also that the owner or operated submitted to the Agency, on or before July 26, 1982, detailed information about their facility, including: (1) the existing treatment facility, (2) the existing discharges to and from the treatment facility; (3) cost estimates of the least costly investment required to meet the standards currently applicable and a description of the hypothetical treatment system, (4) projections of the standards that could be met with a hypothetical treatment system with a cost equal to the Agency's cost estimate, and (5) production rate in tons per day for each process contributing wastewater to the central treatment facility. See 40 C.F.R. § 420.01(b)(2).

When the revisions to Part 420 were initially proposed in 2000, EPA sought to eliminate the central treatment exclusion entirely. When commenters opposed that proposal, EPA thereafter confirmed that while most facilities that had been eligible to apply for the exclusion in 1982 had not in fact applied (and thus were not eligible for the exclusion at all), there remained one or two facilities for which owners or operators had both applied for the exclusion and still had permits that were based on the exclusion. In order to allow those facilities to continue to rely on limits in their existing permits that were based on the 1982 exclusion, EPA did not eliminate the central treatment exclusion in the final rule published in 2002, as originally planned. However, EPA also specifically did not amend the 1982 exclusion to apply to the new and revised ELGs that were included in the final 2002 rule.

> Commenters asked EPA to expand the central treatment provision. Commenters requested this expansion because they were concerned that the costs of the proposed rule would be too high if the limits and standards were made more stringent . . . .
>
> EPA disagreed with commenters that it should expand the central treatment provision. Because of the prevailing economic situation in the iron and steel industry, technological reasons in some subcategories, and performance issues in others, EPA has decided to go forward with new or revised regulations for only five subcategories (cokemaking, sintering, ironmaking, steelmaking, and a subcategory for other operations). With the substantially reduced projected economic burden on the industry, U.S. EPA does not believe that expanding § 420.01(b)(2) is necessary.

The reference in the final paragraph cited above to the "21 eligible mills" includes the Burns Harbor facility. EPA considered, and *rejected*, the proposal to expand the central treatment exclusion in 40 C.F.R. § 420.01(b) to cover the new and revised ELGs that EPA promulgated in the new rulemaking, including the new ELG for 2,3,7,8-TCDF for sintering operations with wet air pollution control. The 2002 revisions left intact the July 26, 1982 deadline in 40 C.F.R. §

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420.01(b) for applying for the exclusion, thus limiting the central treatment exclusion to the scope it had when promulgated in 1982.[1]

Applying the analysis above to the Burns Harbor facility, the ELG for 2,3,7,8-TCDF - including the specification that ArcelorMittal must demonstrate compliance with the limits separately or in combination with blast furnace wastewater, but prior to commingling with any non-sintering or non-blast furnace operations - should be included in the permit. As specified in the final regulation, the facility may commingle ancillary non-blast furnace wastewater comprising 5% of the total flow or less with their sintering wastewater. See 40 C.F.R. § 420.29.

[1] The preamble for the 1982 rulemaking indicates that EPA never intended for the central treatment exclusion to apply to new or revised ELGs in the future. At the time, EPA was subject to a court-imposed deadline to promulgate the final 1982 rule. EPA included the temporary exclusion in order both (i) to allow EPA to publish the final rulemaking in accordance with the deadline, and (ii) to give EPA a brief additional period to evaluate arguments from members of the group of 21 eligible mills that the expected cost to them of complying with the rules finalized in the 1982 rulemaking would be significantly higher than estimated by the Agency, to the extent that the new limitations would not represent BPT, BAT, BCT, or PSES for the facility. In such circumstances, EPA had indicated that it might decide to propose other limits or standards for these facilities as alternatives to the limits or standards finalized in the 1982 rule. The EPA anticipated that all of this could be accomplished within a very short period and intended that the central treatment exclusion would be effective for only the minimum period necessary to accomplish those goals. See 47 Fed. Reg. 23258, 23266 – 23267 (May 27, 1982).

By contrast with its 1982 preamble, EPA included in the preamble for the final 2002 rulemaking the finding that complying with the new and revised ELGs, including the new ELG for 2,3,7,8-TCDF, would have minimal economic impact on the group of 21 eligible mills, including the Burns Harbor facility. This finding eliminates, for purposes of the new and revised ELGs in the 2002 rulemaking, the central rationale for applying the 1982 exclusion, namely that a limited and temporary exclusion would give EPA time to consider alternative limits for mills that could demonstrate that the cost of complying with the new and revised ELGs was disproportionately higher than EPA had projected. EPA also specifically linked this finding to its decision not to expand the 1982 central treatment exclusion. See 47 Fed. Reg. at 64226 (October 17, 2002).

b. Modifications from Technology Based Effluent Limitations for Ammonia and Phenol (301(g) Variance)

Section 301(g) of the Clean Water Act and 327 IAC 5-3-4(b)(2) allow for a variance from the applicable BAT requirements through the development of proposed modified effluent limitations (PMELs) for the non-conventional pollutants of ammonia, chlorine, color, iron, and total phenols (4AAP) provided that the following conditions are met:

(1) The proposed modified effluent limitations (PMELs) will meet the categorical BPT effluent limitations (Technology Based Effluent Limits (TBELs)) or applicable Water Quality-Based Effluent Limitations (WQBELs), whichever are more stringent;

(2) The PMELs will not result in any additional requirements on other point or non-point sources;

(3) The PMELs will not interfere with the attainment or maintenance of water quality which will protect public water supplies, aquatic life and recreational activities; and,

(4) The PMELs will not result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), or synergistic propensities.

In November 1983, then owner and operator of the ArcelorMittal Burns Harbor facility, Bethlehem Steel, applied for "waiver" from the BAT limitations contained in the ironmaking and sintering subcategories of 40 CFR 420. This application supplemented previous applications submitted in September 1978, and July 1982. On February 4, 1988, the United States Environmental Protection Agency granted a variance from the best available technology economically achievable requirements provided for by the federal NPDES permit requirements of the Clean Water Act pursuant to section 301(g). Based upon this authorization the previous NPDES Permit, effective October 1, 1988, contained modified limitations for ammonia and phenol as follows:

Table 1-1
Existing Permit Limitations

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Phenols (4AAP)	14.0	22.0	lbs/day	Report	Report	mg/l	3 x Week	24 Hr. Comp.

Table 1-2
Existing Permit Limitations

	Pounds per Day (lbs/day)		Milligrams per Liter (mg/l)			
	7-Day Average	Daily Maximum	7-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Ammonia as N						
January	720	915	0.68	0.86	3 x Week	24 Hr. Comp.
February	645	910	0.72	1.02	3 x Week	24 Hr. Comp.
March	940	1300	0.9	1.27	3 x Week	24 Hr. Comp.
April	730	1030	0.82	1.16	3 x Week	24 Hr. Comp.
May	680	970	0.74	1.05	3 x Week	24 Hr. Comp.
June	650	920	0.62	0.87	3 x Week	24 Hr. Comp.
July	375	540	0.36	0.51	3 x Week	24 Hr. Comp.
August	385	540	0.37	0.52	3 x Week	24 Hr. Comp.
September	550	775	0.82	1.16	3 x Week	24 Hr. Comp.
October	635	900	0.67	0.95	3 x Week	24 Hr. Comp.
November	530	680	0.47	0.6	3 x Week	24 Hr. Comp.
December	635	900	0.9	1.27	3 x Week	24 Hr. Comp.

Through its NPDES permit renewal application, ArcelorMittal Burns Harbor, LLC has requested that the PMELs based on the 301(g) variance be continued. Prior to the request from ArcelorMittal to renew the 301(g) variance, Bethlehem Steel requested a modification of the 301(g) variance by a letter to IDEM dated March 8, 2000. Bethlehem Steel requested that the monthly average PMELs for ammonia as N be set on a semi-annual basis rather than the existing month by month basis. They requested the Summer (May through October) monthly average PMELs be based on a concentration of 1.39 mg/l and the Winter (November through April) monthly average PMELs be based on a concentration of 1.33 mg/l.

IDEM explored the possibility of modifying the PMELs for ammonia as N based on the 301(g) variance issued to Bethlehem Steel with the issuance of the existing NPDES permit in 1988. U.S. EPA and IDEM have reviewed the applicable requirements contained in state and federal rules and regulations and determined that a new application for a 301(g) variance needs to be submitted for approval by the U.S. EPA and IDEM before the PMELs based on the existing 301(g) variance may be modified. ArcelorMittal has the opportunity in the renewed NPDES permit to apply for a new 301(g) variance to establish the PMELs for ammonia as N.

IDEM has reviewed ArcelorMittal Burns Harbor's request for renewal of the PMELs for ammonia and Phenols based on the 301(g) variance PMELs issued in the NPDES permit effective on October 1 1988 in the context of Indiana's currently applicable water quality standards and IDEM's procedures for conducting wasteload allocations. IDEM has tentatively approved the PMELs, subject to public review and comment on the proposed NPDES permit, because the PMELs will result in compliance with Indiana water quality standards and because all Section 301(g) conditions listed above will be met. U.S. EPA has concurred with IDEM's tentative approval of ArcelorMittal Burns Harbor's request to renew the 301(g) variance for the PMELs. The WQBELs for ammonia based on the current applicable water quality criteria are: 1.13 mg/l as the monthly average and 1.7 mg/l as the daily maximum. All of the PMELs are

more stringent that the WQBELs for ammonia based on the current applicable water quality criteria.

Indiana does not have numerical water quality standards for total phenols (4AAP) applicable to the Little Calumet River. When the initial 301(g) variance was approved in 1988, IDEM and EPA Region V considered whether any toxic phenols were present in the Outfall 001 discharge at levels that would interfere with attainment of Indiana's water quality standards. The Section 301(g) variance for total phenols was initially approved on that basis. The current Indiana water quality standards refer to narrative criteria at Section (c)(1)(A)and (B) to protect aesthetic qualities of taste in food fish and odor in the vicinity of the discharge. There are no numeric criteria for Lake Michigan for total phenols.

Monitoring data for Outfall 001 from the NPDES permit application shows that most of the toxic phenolic compounds were not detected at concentrations above 20 ug/L. Supplemental Outfall 001 monitoring data requested by IDEM and developed during the period October 29, 2007 to January 7, 2008 include nine non-detect measurements each for 2,4-dimethylphenol and 4-nitrophenol at respective reporting levels of < 1 ug/L and < 4.7 ug/L.

5.3 Water Quality-Based Effluent Limits

A reasonable potential analysis for individual toxic pollutants was done for the renewal of the NPDES permit for ArcelorMittal Burns Harbor. The analyses were done for Outfall 001, Outfall 002 and Outfall 003. Outfall 001 consists of noncontact cooling water, stormwater, Lake Michigan water used for control of effluent temperature, groundwater from building dewatering wells and treated process wastewater (the treated process wastewater is regulated through internal Outfall 011). Outfall 002 consists of noncontact cooling water, stormwater and groundwater from building dewatering wells. Outfall 003 consists of water intake screen and strainer backwash water. The discharge through Outfall 001 is to the East Branch of the Little Calumet River, the discharge through Outfall 002 is to the East Harbor Arm of Port of Indiana - Burns Harbor and the discharge through Outfall 003 is to the Indiana portion of the open waters of Lake Michigan. The discharge through Outfall 002 is considered a discharge to the Indiana portion of the open waters of Lake Michigan. The discharge through each outfall is covered under the rules for the Great Lakes system. The effluent flows used in the analyses were 137 MGD for Outfall 001, 288 MGD for Outfall 002 and 1.44 MGD for Outfall 003.

The East Branch of the Little Calumet River is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch (Portage-Burns Waterway) are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery. Therefore, the East Branch of the Little Calumet River and Portage-Burns Waterway are designated as salmonid waters. The East Branch of the Little Calumet River enters the Indiana Dunes National Lakeshore at S.R. 20 (upstream of Outfall 001) and leaves the Indiana Dunes National Lakeshore about 0.5 miles upstream of its confluence with Portage-Burns Waterway (about 1.0 miles downstream of Outfall 001). All waters incorporated in the Indiana Dunes National Lakeshore are designated in

327 IAC 2-1.5-19(b)(3) as an outstanding state resource water (OSRW). Discharges to OSRWs are subject to the antidegradation implementation procedure for OSRWs in 327 IAC 5-2-11.7.

The Indiana portion of the open waters of Lake Michigan is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The Indiana portion of the open waters of Lake Michigan is designated in 327 IAC 2-1.5-5(a)(3)(G) as a salmonid water and shall be capable of supporting a salmonid fishery. Public water system intakes are located in the Indiana portion of the open waters of Lake Michigan so it is designated in 327 IAC 2-1.5-5(a)(4) as a public water supply. Industrial water supply intakes are located in the Indiana portion of the open waters of Lake Michigan so it is designated in 327 IAC 2-1.5-5(a)(5) as an industrial water supply. The Indiana portion of the open waters of Lake Michigan is designated in 327 IAC 2-1.5-19(b)(2) as an outstanding state resource water (OSRW). As noted above, discharges to OSRWs are subject to the antidegradation implementation procedure for OSRWs in 327 IAC 5-2-11.7.

The 2008 assessment units for East Branch Little Calumet River at Outfall 001 and Portage-Burns Waterway are INC0164_T1086 and INC0164_T1108, respectively. Both of these assessment units are on the 2008 303(d) list for PCBs in fish tissue. The 2008 assessment unit for the Lake Michigan shoreline at Outfalls 002 and 003 is INC0181G_G1093. The Lake Michigan shoreline in Indiana is on the 2008 303(d) list for mercury and PCBs in fish tissue. A TMDL for *E. coli* for East Branch Little Calumet River (including Assessment Unit INC0164_T1086) and Portage-Burns Waterway (Assessment Unit INC0164_T1108) was approved by U.S. EPA January 28, 2005 and is part of the Little Calumet/Burns Ditch TMDL. The current ArcelorMittal Burns Harbor permit includes the discharge of sanitary wastewater from internal Outfall 031. The TMDL notes that the sanitary WWTP was sold to the Town of Burns Harbor and that the Town has an operational permit for the WWTP. The TMDL notes that IDEM will apply *E. coli* limits in the operational permit. The TMDL requires load reductions for *E. coli* from nonpoint sources, but not from point source discharges. A TMDL for *E. coli* for the Lake Michigan shoreline (including Assessment Unit INC0181G_G1093) was approved by U.S. EPA September 1, 2004 and is part of the Lake Michigan TMDL. This TMDL does not place limits for *E. coli* on any of the ArcelorMittal Burns Harbor outfalls to Lake Michigan.

The Q7,10 of the East Branch of the Little Calumet River upstream of Outfall 001 is 21 cfs. Under 327 IAC 5-2-11.4(b)(2), except for a zone of initial dilution for acute aquatic life 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 under 327 IAC 5-2-11.4(b)(4). The facility has not conducted a mixing zone demonstration for Outfall 002 or Outfall 003 so wasteload allocations based on chronic aquatic life, human health, wildlife and Lake Michigan criteria were calculated using no dilution and waste load allocations based on acute aquatic life criteria were calculated using a zone of initial dilution.

The facility adds chlorine to their intake water to control zebra mussels and the current permit includes limits for total residual chlorine at Outfalls 001, 002 and 003. Therefore, a reasonable

potential analysis for total residual chlorine was done under 5-2-11.5(a) and it was determined that water quality-based effluent limitations (WQBELs) for total residual chlorine are required for Outfalls 001, 002 and 003. A reasonable potential analysis for Outfall 001 was done for pollutants of concern other than total residual chlorine in accordance with the reasonable potential statistical procedure in 327 IAC 5-2-11.5(b). The facility provided effluent data for a number of pollutants of concern as part of their permit renewal application in 1992. The facility provided additional effluent sampling data in 2008 and 2009 in response to a request by IDEM. Under the current permit, the facility monitors Outfall 001 and their treated process wastewater at internal Outfall 011 for several of the pollutants of concern. Data for chloride were not available for Outfall 001 so the data collected at internal Outfall 011 were used in the reasonable potential analysis. The use of internal Outfall 011 data for chloride is considered to result in a conservative reasonable potential analysis since the concentration of chloride at Outfall 001 is expected to be lower than that at internal Outfall 011 due to the addition of noncontact cooling water to Outfall 001. The results of the reasonable potential procedure show that there is a reasonable potential to exceed for copper, mercury, silver and zinc.

A reasonable potential analysis for Outfall 002 was done for pollutants of concern other than total residual chlorine in accordance with the provision for discharges of once-through noncontact cooling water in 327 IAC 5-2-11.5(g). In accordance with 5-2-11.5(g)(3), if a substance is present at elevated levels in the noncontact cooling water waste stream due to improper operation or maintenance of the cooling system, and this substance is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above a numeric criterion or value for a toxic substance as determined under 5-2-11.5(b), WQBELs shall be established for the substance. The current permit requires monitoring at Outfall 002 for ammonia-N, chloride, sulfate and dissolved iron to detect any possible contamination of the noncontact cooling water with process wastewater. Therefore, the reasonable potential statistical procedure under 5-2-11.5(b) was done for these pollutants of concern. The results of the statistical analysis show that there is not a reasonable potential to exceed for any of the pollutants of concern considered in the analysis. The results of the reasonable potential analysis under 5-2-11.5(g) for pollutants of concern not included in the statistical analysis show that there is also not a reasonable potential to exceed for any of these pollutants of concern. In accordance with 5-2-11.5(g)(6), it is assumed that the stormwater discharges to Outfall 002 will be regulated as if they discharged directly to Lake Michigan and will receive requirements consistent with other stormwater discharges.

In addition to establishing WQBELs based on the reasonable potential statistical procedure contained in 327 IAC 5-2-11.5(b), IDEM is also required to establish WQBELs under 327 IAC 5-2-11.5(a) "If the commissioner determines that a pollutant or pollutant parameter (either conventional, nonconventional, a toxic substance, or whole effluent toxicity (WET)) is or may be discharged into the Great Lakes system at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable narrative criterion or numeric water quality criterion or value under 327 IAC 2-1.5."

For each pollutant receiving TBELs at internal Outfall 011, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were

calculated at Outfall 001. This was done for ammonia-N, hexavalent chromium, total cyanide, lead, zinc, naphthalene and tetrachloroethylene. The mass-based WQBELs at Outfall 001 were compared to the mass-based TBELs at internal Outfall 011. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs at internal Outfall 011 exceed the mass-based WQBELs at Outfall 001, the pollutant may be discharged at a level that will cause an excursion above a numeric water quality criterion or value under 327 IAC 2-1.5 and WQBELs are required for the pollutant at Outfall 001. This was the case for lead. Therefore, WQBELs are required for lead at Outfall 001 regardless of the results of the reasonable potential statistical procedure.

a. Outfall 001

Table WQBEL#1-1
Water Quality-Based Effluent Limitations for Outfall 001

Parameter	Concentration ug/l		Mass (lb/d)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Copper [3]	18	35	21	40
Zinc [3]	150	290	171	332
Mercury [3]	0.0013	0.0032	0.0015	0.0037
Silver [3]	0.048	0.097	0.055	0.11
Lead [2]	18	36	21	41
Ammonia as N, Total [3]	1130 [1]	1,700	1286 [1]	1944
Residual Chlorine, Total	10	20	11	23

The discharge from Outfall 001 must also comply with the narrative water quality standards contained in 327 IAC 2-1.5-8.

[1] The Monthly Average WQBEL has been converted to a Weekly Average limit for Ammonia as N for comparison with the existing limits for ammonia as N.

[2] The Technology based effluent limitations for Lead at internal outfall 011 are less stringent than the water quality-based effluent limitations for Lead listed above. IDEM proposes to place the water quality-based effluent limitations for Lead at internal outfall 011 so that internal outfall 011 is not allowed to discharge at a level that exceeds the water quality based-effluent limitations. Lead shall be monitored at outfall 001 without any effluent limitations.

Table WQBEL #1-2

The highest temperature sustained over any two hour period within each 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	60	60	65	71	81	83	86	86	85	80	75	65

[3] The permittee shall calculate the daily concentration and mass of each WQBEL at Outfall 001 when the water cannon is in use:

$$C_{001C} = (C_{001M} * Q_{001})/(Q_{001} - Q_{WC})$$
$$M_{001C} = C_{001M} * Q_{001} * 8.345$$

where,

C_{001C} =Pollutant concentration at Outfall 001 to determine compliance with the NPDES permit concentration effluent limit.

M_{001C} = Pollutant mass at Outfall 001 to determine compliance with the NPDES permit mass effluent limit

C_{001M} = Measured pollutant concentration at Outfall 001, (mg/L)

Q_{001} = Flow measured at Outfall 001, (million gallons)

Q_{WC} = Total flow measured at water cannon, (million gallons)

When flow augmentation is not in use, the compliance concentration value = measured concentration value at outfall 001.

b. Outfall 002

Table WQBEL# 2-1
Water Quality Effluent Limitations for Outfall 002

Parameter	Concentration ug/l		Mass (lb/d)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Total Residual Chlorine	10	20	24	48

The discharge from Outfall 002 must also comply with the narrative water quality standards contained in 327 IAC 2-1.5-8.

Table WQBEL #2-2

The highest temperature sustained over any two hour period within each 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	60	60	65	71	81	83	86	86	85	80	75	65

[3] The permittee shall calculate the daily concentration and mass of each WQBEL at Outfall 001 when the water cannon is in use:

c. Outfall 003

Outfall 003 discharges into open waters of Lake Michigan as defined in 327 2-1.5-2(64). The use classifications as per 327 IAC 2-1.5-5 are described above in Section A. 2. A wasteload allocation was not performed for outfall 003, nor is there historical flow measurement

information available for this outfall. However, Best Professional Judgment was used to prepare the water quality based limitations for this outfall.

Table WQBEL# 3
Water Quality Effluent Limitations for Outfall 003

Parameter	Concentration ug/l		Mass (lb/d)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Total Residual Chlorine	10	20	NA	NA

The discharge from Outfall 003 must also comply with the narrative water quality standards contained in 327 IAC 2-1.5-8. There are no mass limits because there is no requirement to measure the discharge flow.

d. Outfall 009

Outfall 009 discharges to the East Harbor Arm of Port of Indiana - Burns Waterway Harbor at a point immediately South of Outfall 002. There is not any historical flow measurement information available for this outfall. A waste load allocation was not performed for outfall 009.

A revised 2F application for Outfall 009 was submitted on June 3, 2009. EPA has determined that non-numeric Technology-Based Effluent Limits to be equal to BPT/BAT/BCT for Stormwater associated with industrial activity. The Non-Numeric Stormwater Conditions and Effluent Limits contain the technology-based effluent limitations. Effective implementation of these requirements should meet the applicable water quality based effluent limitations.

The non-numeric requirements of the permit contain effluent limitations, defined in the CWA as restrictions on quantities, rates, and concentrations of constituents which are discharged. Violation of any of these effluent limitations constitutes a violation of the permit.

The technology-based effluent limitations require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically practicable and achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. In addition, the permittee is required 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) 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, (7)

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, (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, and (9) minimize generation of dust and off-site tracking of raw, final or waste materials.

To meet the non-numeric effluent limitations in Part I.H.3, the permit requires ArcelorMittal Burns Harbor, LLC to select control measures (including best management practices) to address the selection and design considerations in Part I.H.4.

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the technology-based effluent limitations and other terms and conditions in this permit will meet this effluent limitation. However, 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, and conduct follow-up monitoring.

Part I.H.6 of the permit requires an annual review of the selection, design, installation, and implementation of the control measures to determine if modifications are necessary to meet the effluent limitations in the permit. This annual review will reinforce the continuous improvement of stormwater discharges. While this approach is different than EPA's benchmarking process where a monitoring result exceeding a benchmark triggers the review of the selection, design, installation, and implementation of the control measures, ArcelorMittal Burns Harbor, LLC is required to review the selection, design, installation, and implementation of the control measures annually whether or not the monitoring results exceed a baseline concentration. Failing to conduct the annual review of the selection, design, installation, and implementation of the control measures and reporting the results to Industrial Permit Section is a violation of the permit.

The Permittee shall retain any and all records related to this documentation within the SWPPP. In addition, this same information must also be submitted to the Industrial NPDES Permit Section on an annual basis.

ArcelorMittal Burns Harbor, LLC will have one year to develop and then implement a SWPPP. ArcelorMittal Burns Harbor, LLC will also be allowed to have one year to construct an outfall structure capable of measuring the flow and facilitating the collection of storm water representative of the discharge from Outfall 009. The period of the schedule of compliance will be negotiated between ArcelorMittal Burns Harbor LLC, IDEM and EPA prior to the issuance of the final permit renewal. **Please see Part 5.8 Stormwater** for more information about the requirements for the development and implementation of the SWPPP.

EXHIBIT 5

e. Internal Monitoring Location (Outfall 011)

The discharge from internal monitoring location 011 combines with non-contact cooling water and storm water to form Outfall 001. Outfall 001 discharges to the East Branch of the Little Calumet River. There are no water quality based effluent limitations or effluent monitoring proposed for internal Monitoring Location 011. The numeric effluent limitations proposed for internal monitoring location 011 are all technology based effluent limitations. Since pH is limited and monitored on a continuous basis at the final outfall 001, pH will not be limited or monitored at internal Monitoring Location 011 in accordance with 40 CFR 420.07.

f. Narrative Water Quality Standards

The following language based on 327 IAC 2-1.5-8(a) will be included in the permit and this is applicable to any point source discharge from the facility:

> 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.

g. Internal Monitoring Location (Outfall 111):

The discharge from internal monitoring location 111 combines with other process wastewater generated throughout the facility and receives additional treatment at the secondary treatment plant. Ultimately this wastewater is discharge through internal monitoring location 011and to

the East Branch of the Little Calumet River via Outfall 001. There are no water quality based effluent limitations proposed for internal Monitoring Locations 111. The numeric effluent limitations proposed for internal monitoring location 111 are all technology based effluent limitations.

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 characterize the toxicity of the effluent to aquatic life.

Therefore, the permittee is required to conduct WETT once every month for the first three months of the permit and then once every three months for the life of the permit to ensure that the water treatment additives and process wastestreams do not produce effluent toxicity. This does not negate the necessity to submit Water Treatment Additive (WTA) approval worksheets for the additives proposed to be discharged through Outfall 001.

5.5 Alternate Thermal Effluent Limitations (316a Variance)

The existing permit contains alternate thermal effluent limitations for the discharge from Outfalls 001 and 002 that were approved by EPA and IDEM in 1990. ArcelorMittal Burns Harbor, LLC has applied for a renewal of their alternate thermal limits in accordance with 327 IAC 5-7.

The original 316a variance application was submitted by Bethlehem steel on February 7, 1975. When the NPDES permit was being renewed in 1988, the alternate thermal limits were being questioned by IDNR in response to creel census data of the fish gathered by IDNR that indicated that the thermal component of the discharge from 001 was having a significant impact on the salmonid migration from Lake Michigan to the Little Calumet River upstream of Outfall 001. The permit issued in 1988 required Bethlehem Steel to conduct engineering studies to assess several possible approaches to mitigate the adverse thermal impacts.

Bethlehem Steel submitted an Evaluation of Options to Mitigate the Thermal Discharge Impacts shortly after the issuance of the permit in 1988.

On July 16, 1990 a letter was sent to Bethlehem Steel from IDEM/OWQ authorizing the addition of up to 35,000 gallons per minute of Lake Michigan water to Outfall 001 at a point after the final wastewater treatment lagoons that discharge through Outfall 011 to assure compliance with the thermal limits at Outfall 001. The additional flow was not considered to be flow augmentation because it does not impact the quality of the effluent from the wastewater treatment plant and final lagoons that discharge from Outfall 011 where the limits are based on federal effluent limitation guidelines.

The typical operation for the addition of lake water to Outfall 001 is triggered by temperature monitoring by the Burns Harbor central dispatch office, which is manned 24-hours per day and

monitors critical operating parameters for the plant such as power feeds, steam pressures, etc. Temperature monitoring instrument outputs at Outfall 001 and Monitoring Station 011 are telemetered to the central dispatch office. The procedure specifies that, if the Outfall 001 temperature is within 2 degrees F of the NPDES limit and the Monitoring Station 011 temperature is within 1 degree F of the Outfall 001 limit, the lake water addition system is activated until either of those two critical parameters has been rectified. Lake water addition can only be used if there is excess pumping capacity at the lake water pump station.

The basis presented to Indiana and EPA for approving the alternate thermal effluent limits contained in the existing permit issued in 1988 is a demonstration that there is no prior appreciable harm to the aquatic life.

Since the implementation of the addition of Lake Michigan water to meet the thermal effluent limits at Outfall 001, there has not been any indication that the thermal component of the discharge from Outfall 001 is causing any adverse impacts on the aquatic life in the Little Calumet River downstream of Outfall 001. Therefore, the alternate thermal effluent limits contained in the existing permit will be included in this proposed permit renewal in accordance with 5-7-4(c)(1)(A).

IDEM requested an update from Brian Breidert, Lake Michigan Fisheries Biologist with IDNR, on the impacts of the thermal discharge from Outfall 001 on the Little Calumet River. Mr. Breidert provided IDEM with the following update via email:

"We have adult summer steelhead entering the Little Calumet River via Burns waterway beginning in July. They continue to enter the Little Calumet River throughout the year and into the spring of the following year. These fish are from stocking that occurs each spring and fall of the year. Adult salmon, coho and Chinook, enter the stream each fall beginning around September 1 and continue until November. IDNR also stocks coho fingerlings each fall which in turn support the fishery. IDNR also stocks Chinook each May. The stocked fish will generally exit the stream by middle May to early June and spend their adult life in Lake Michigan prior to returning. To date IDNR has not seen any adverse effects from the thermal discharges from Outfall 001. IDNR also has a winter strain of steelhead trout that are stocked each December. The adult steelhead trout return each fall and spring to spawn."

Through its NPDES permit renewal application, ArcelorMittal Burns Harbor, LLC has requested that the thermal effluent limits based on the 316(a) variance contained in the NPDES permit be continued. Prior to the request from ArcelorMittal to renew the 316(a) variance, Bethlehem Steel requested a modification of the 316(a) variance by a letter to IDEM dated March 8, 2000. Bethlehem Steel requested that the Summer (July, August and September) effluent temperature limits be increased to 90 °F.

ArcelorMittal will be provided the opportunity in the renewed NPDES permit to apply for a new 316(a) variance to establish the new alternate thermal effluent limits for the discharge from Outfall Nos. 001 and 002. In the interim period, the thermal effluent limits from the existing

NPDES permit based on the 316(a) variance issued in 1988 will be continued in the renewed permit until such time that a new 316(a) variance is approved by the U.S. EPA and IDEM.

The following alternative thermal effluent limitations will be included in the permit for outfall 001:

The Temperature of Outfall 001 shall be monitored on a continuous basis. The highest temperature sustained over any two hour period within each day's 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	60	60	65	71	81	83	86	86	85	80	75	65

The temperature limits that would be applicable at Outfall 001 without granting alternate thermal effluent limits are as follows:

The maximum temperature rise at any time or place above natural temperatures shall not exceed two (2) degrees Fahrenheit unless due to natural causes:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	50	50	60	65	65	70	70	70	65	65	65	57

The following alternative thermal effluent limitations will be included in the permit for outfall 002:

The Temperature of Outfall 002 shall be monitored on a continuous basis. The highest temperature sustained over any two hour period within each day's 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	55	57	63	69	77	82	88	90	88	81	72	63

The temperature limits that would be applicable at Outfall 002 without granting alternate thermal effluent limits are as follows:

The maximum temperature rise at any time or place above natural temperatures shall not exceed two (2) degrees Fahrenheit unless due to natural causes:

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

The additional cooling water provided by the water cannon is flow augmentation that cannot be used to meet the WQBELs for Ammonia based on 40 CFR 125.3(f) which states that flow augmentation cannot be used to meet TBELs. However, flow augmentation can be used to meet WQBELs when 1) the TBELs are not sufficient to meet the WQS, 2) the discharger agrees

to waive any opportunity to request a 301(c), (g) or (h) variance and 3) the technique is the preferred environmental and economic method to achieve the WQS (paraphrased). This assessment should be conducted on a pollutant by pollutant basis.

In the assessment as to whether flow augmentation can be used to meet the WQBEL for ammonia, Burns Harbor holds a 301(g) variance for ammonia that does not satisfy requirement (2) and as such, Burns Harbor is ineligible to use flow augmentation to achieve the WQBEL for ammonia. Compliance with the ammonia WQBEL must be determined without the benefit of flow augmentation (i.e. the water cannon flow) either by calculation or without the water cannon operating during the sampling period.

The permittee shall calculate the daily concentration and mass of each WQBEL at Outfall 001 when the water cannon is in use:

$$C_{001C} = (C_{001M} * Q_{001})/(Q_{001} - Q_{WC})$$
$$M_{001C} = C_{001M} * Q_{001} * 8.345$$

where,

C_{001C} =Pollutant concentration at Outfall 001 to determine compliance with the NPDES permit concentration effluent limit.

M_{001C} = Pollutant mass at Outfall 001 to determine compliance with the NPDES permit mass effluent limit

C_{001M} = Measured pollutant concentration at Outfall 001, (mg/L)

Q_{001} = Flow measured at Outfall 001, (million gallons)

Q_{WC} = Total flow measured at water cannon, (million gallons)

When the water cannon is not in use, the compliance concentration value = measured concentration value at outfall 001.

The permittee must install a flow measuring device for the discharge from the water cannon used to further cool the effluent from outfall 001 to meet the temperature limits as soon as possible but no later than one year after the effective date of the permit. The flow from the water cannon will be reported with outfall 001.

5.6 Antibacksliding

The Antibacksliding provisions contained in 327 IAC 5-2-10(11) prohibit a renewed NPDES from containing less stringent limitations than those contained in the previously effective NPDES Permit. 327 IAC 5-2-10(11) contains exceptions for which, if specific conditions are met or exist, a limitation may be made less stringent in the renewed NPDES Permit.

The effluent limitations being proposed in this NPDES Permit are not less stringent than those contained in the previously effective NPDES Permit, and therefore anti-backsliding is not an issue with the proposed NPDES Permit.

5.7 Antidegradation

An Antidegradation Review was performed for the discharges from this facility. Based on the antidegradation review, the Department determined the proposed discharges will not result in a significant lowering of water quality in accordance with the Antidegradation rules found in 327 IAC 2-1.5-4, 327 IAC 5-2-11.3 and 327 IAC 5-2-11.7. Since there will not be any action taken by ArcelorMittal Burns Harbor, LLC that results in an increased loading or increased permit limits, an antidegradation demonstration is not required.

The proposed NPDES Permit does require ArcelorMittal Burns Harbor to monitor for pollutants and/or pollutant parameters that were not included in the previous (existing) NPDES permit for ArcelorMittal Burns Harbor. The proposed permit also contains new limitations for pollutants and/or pollutant parameters that were not contained in the previous (existing) NPDES Permit. All of the new permit monitoring requirements and/or effluent limitations are based on one or more of the factors contained in 327 IAC 5-2-11.7(b)(2), and the proposed NPDES permit does not authorize any increase in the amount of these pollutants or pollutant parameters that are being discharged.

The permit will contain the following conditions regarding any future action that may result in a significant lowering of water quality in Lake Michigan. The permittee is prohibited from undertaking any deliberate action that would result in degradation of the water quality in Lake Michigan. The permittee shall notify the Commissioner if there is any increase in the loading of a bioaccumulative chemical of concern (BCC), above normal variability, attributable to a deliberate action unless the increased discharge of the BCC qualifies under one of the exceptions under 327 IAC 5-2-11.7(b) or (c).

5.8 Stormwater

According to 40 CFR 122.26(b)(14)(ii) and 327 IAC 5-4-6(b)(1) facilities classified under Industrial Classification (SIC) Code 3312, 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. 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.

Storm water associated with industrial activity must be assessed to determine compliance with all water quality standards. The non-numeric storm water conditions and effluent limits contain the technology-based effluent limitations. Effluent limitations, as defined in the CWA, are restrictions on quantities, rates, and concentrations of constituents which are discharged. Effective implementation of these requirements should meet the applicable water quality based effluent limitations. Violation of any of these effluent limitations constitutes a violation of the permit.

The technology-based effluent limitations require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically practicable and achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. In addition, the permittee is required 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) 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, (7) 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, (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, and (9) minimize generation of dust and off-site tracking of raw, final or waste materials.

To meet the non-numeric effluent limitations in the permit requires ArcelorMittal Burns Harbor, LLC to select control measures (including best management practices) to address the selection and design considerations.

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the non-numeric effluent limitations and other terms and conditions in this permit will meet this effluent limitation. However, 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, and conduct follow-up monitoring.

"Term 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 effluent limits set forth in Part I.H. 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 effluent limitations in Part I.H. 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.

IDEM's Non-Numeric Effluent Limitations and SWPPP language was modeled from and is consistent with the EPA's Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, issued on September 29, 2008. It should be noted that EPA has developed a guidance document, "Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices", 1992 to assist facilities in developing a SWPPP. The guidance contains worksheets, checklists, and model forms that should assist a facility in developing a SWPPP.

The following pollutant parameters will be monitored in the effluent from outfall 009 as indicators of the performance of the control measures: Flow, Total Suspended Solids (TSS), Oil and Grease, Total Iron, Total Zinc, Fluoride and COD.

5.9 Water Treatment Additives

All of the water treatment chemicals are added to the wastewater to enhance the removal of pollutants prior to the wastewater entering the central wastewater treatment facility. The central wastewater treatment facility removes an unknown portion of all of the water treatment chemicals, but the synergistic effects of the water treatment chemicals can only be determined through the use of whole effluent toxicity testing or WET testing.

Therefore, the effluent from outfall 001 will be tested using whole effluent toxicity testing methods to ensure that the water treatment chemicals and any other pollutants are not present in the effluent in toxic amounts.

The following condition is included for the discharge from outfall 001:

In the event that changes are to be made in the use of water treatment additives including dosage rates for approved additives contributing to Outfall 001 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 greater than the dosage rate identified in the permit application.

The following water treatment additives have been approved for use:

1. Nalco Sure-Cool 1392 Scale Inhibitor / Maximum system concentration = 1.0 mg/l
2. Nalco 8773 Anionic Flocculent / Maximum system concentration = 0.25 mg/l
3. Nalco 1720 Oxygen Scavenger / Maximum system concentration = 8.0 mg/l
4. Nalco 750 Boiler Antifoam / Maximum system concentration = 35.0 mg/l
5. Nalco Nalclear 7763 / Maximum system concentration = 0.2 mg/l
6. Nalco Nexguard 22301 / Maximum system concentration = 100 mg/l
7. Nalco 2 Sodium Aluminate Liquid Flocculant / Maximum system concentration = 6 mg/l
8 Nalco 8357 Scale Inhibitor / Maximum system concentration = 1.0 mg/l
9. Nalco 7385 Scale Inhibitor / Maximum system concentration = 1.0 mg/l
10. K.A. Steel Chemical Sodium Hypochlorite / Controlled by effluent limits for Total Residual Chlorine
11. Nalco 7408 Chlorine Scavenger/ Maximum system concentration = 1.5 mg/l
12. Nalco 3D TRASAR 3DT 190 Cooling Water Treatment / Maximum system concentration = 25.0 mg/l
13. Nalco 3D TRASAR 3DT 179 Corrosion Inhibitor / Maximum system concentration = 15.0 mg/l
14. Nalco 3D TRASAR 3DT 185 Corrosion Inhibitor / Maximum system concentration = 5.0 mg/l
15. Nalco STABREX ST70 / Maximum system concentration = 1.0 mg/l
16. Nalco 7330 Microbiocide / Maximum system concentration = 200.0 mg/l
17. Nalco 7465 Antifoam / Maximum system concentration = 100.0 mg/l
18. Nalco Nalmet 8149 Metal Precipitant
19. Nalco 8338 Corrosion Inhibitor / Maximum system concentration = 1,400.0 mg/l
20. Nalco 7320 Microbiocide / Maximum system concentration = 50.0 mg/l
21. Nalco 7346 Microbiocide / Maximum system concentration = 1.0 mg/l
22. Nalco 41 Corrosion Inhibitor / Maximum system concentration = 1.0 mg/l
23. Nalco Tri-Act 1805 Scale Inhibitor / Maximum system concentration = 20.0 mg/l
24. Nalco Nexguard 22389 Boiler Water Treatment / maximum system concentration = 20.0 mg/l

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6.0 PROPOSED PERMIT CONDITIONS

6.1 Proposed Effluent Limitations

The Tables below contain the proposed effluent limitations and the source/justification for each limitation. The justifications are abbreviated, and the tables contain references for certain parameters. These abbreviations and the references are explained at the end of this section.

These tables also contain the proposed monitoring frequency and the sample type. The proposed monitoring frequency and the sample type were developed using best professional judgment. In most cases, the monitoring frequencies established in the previous permit are being followed in the proposed permit.

a. Great Lakes System Discharger Requirements:

The permittee discharges to a waterbody that has been identified as a water of the state within the Great Lakes system. In addition to OSRW antidegradation implementation procedures, it is subject to other NPDES requirements specific to Great Lakes system dischargers under 327 IAC 2-1.5 and 327 IAC 5-2-11.2 through 327 IAC 5-2-11.6. These rules address water quality standards applicable to dischargers within the Great Lakes system and reasonable potential to exceed water quality standards procedures.

As required by 327 IAC 5-2-11.7(a)(3), Part II.A.16. of the renewal permit specifically prohibits the permittee from undertaking deliberate actions that would result in new or increased discharges of BCC's or new or increased permit limits for non-BCC's, or from allowing a new or increased discharge of a BCC from an existing or proposed industrial user, without first proving that the new or increased discharge would not result in a significant lowering of water quality, or by submission and approval of an antidegradation demonstration to the IDEM.

Outfall 001

Table 001-1 Final Limits
Proposed Effluent Limitations and Monitoring Requirements for Outfall 001

Parameter	Sample Frequency	Sample Type	Concentration mg/l		Mass (lb/d)		Source/Justification
			Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Total Suspended Solids	Weekly	24 Hr Composite	Report	Report	Report	Report	**BPJ**
Effluent Flow	Continuous	24 Hour Total	Report	Report	---	---	**327 IAC 5-2-13**
Oil and Grease	Weekly	Grab	Report	Report	Report	Report	**PP, BPJ**
Phenols (4AAP)	3 x week	Grab	Report	Report	14	22	**PP; 301(g)**
Copper [1][4]	Weekly	24 Hr Composite	0.018	0.035	21	40	**327 IAC 5-2-11.5**
Lead	3 x Week	24 Hr Composite	0.018	0.036	21.0	41.0	**327 IAC 5-2-11.5**
Zinc[1][4]	Weekly	24 Hr Composite	0.15	0.29	171	332	**327 IAC 5-2-11.5**
Mercury [1][4]	6 x Year	Grab	1.3E-9	3.2E-9	1.5E-6	3.7E-6	**327 IAC 5-2-11.5**
Silver [1][4]	Weekly	24 Hr Composite	0.000048	0.000097	0.055	0.11	**327 IAC 5-2-11.5**
Total Res. Chlorine [2]	Daily	Grab	0.01	0.02	11	23	**327 IAC 5-2-11.5**
pH	Continuous	Probe	---	---	---	---	**327 IAC 5-2-11.5**
Temperature	Continuous	Probe	---	---	---	---	**327 IAC 5-7**
Water Cannon Flow [3]	Continuous	24 Hour Total	---	---	Report	Report	**301(g)**

[1] Eligible for a schedule of Compliance
[2] Monitoring for TRC shall be 1 X Daily during Zebra or Quagga mussel intake chlorination, and continue for three additional days after Zebra or Quagga mussel treatment has been completed.
[3] ArcelorMittal must install a flow measuring devise on the water cannon used to further cool the cooling water as soon as possible but no later than one year after the effective date of the permit.

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Table 001-2[4]
Proposed Effluent Limitations and Monitoring Requirements for Outfall 001

	Pounds per Day (lbs/day)		Milligrams per Liter (mg/l)[4]			
	7-Day Average	Daily Maximum	7-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Ammonia as N						
January	720	915	0.68	0.86	3 x Week	24 Hr. Comp.
February	645	910	0.72	1.02	3 x Week	24 Hr. Comp.
March	940	1300	0.9	1.27	3 x Week	24 Hr. Comp.
April	730	1030	0.82	1.16	3 x Week	24 Hr. Comp.
May	680	970	0.74	1.05	3 x Week	24 Hr. Comp.
June	650	920	0.62	0.87	3 x Week	24 Hr. Comp.
July	375	540	0.36	0.51	3 x Week	24 Hr. Comp.
August	385	540	0.37	0.52	3 x Week	24 Hr. Comp.
September	550	775	0.82	1.16	3 x Week	24 Hr. Comp.
October	635	900	0.67	0.95	3 x Week	24 Hr. Comp.
November	530	680	0.47	0.6	3 x Week	24 Hr. Comp.
December	635	900	0.9	1.27	3 x Week	24 Hr. Comp.

[4] The permittee shall calculate the daily concentration and mass of each pollutant at Outfall 001 when the water cannon is in use as specified below:

$$C_{001C} = (C_{001M} * Q_{001})/(Q_{001} - Q_{WC})$$
$$M_{001C} = C_{001M} * Q_{001} * 8.345$$

where,

C_{001C} =pollutant concentration at Outfall 001 to determine compliance with the NPDES permit concentration effluent limit.

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M_{001C} = pollutant mass at Outfall 001 to determine compliance with the NPDES permit mass effluent limit

C_{001M} = Measured pollutant concentration at Outfall 001, (mg/L)

Q_{001} = Flow measured at Outfall 001, (million gallons)

Q_{WC} = Total flow measured at water cannon, (million gallons)

When the water cannon is not in use, the compliance concentration value = measured concentration value at outfall 001.

Table 001-3
Proposed Effluent Limitations and Monitoring Requirements for Outfall 001

The Temperature of Outfall 001 shall be monitored on a continuous basis. The highest temperature sustained over any two hour period within each 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	60	60	65	71	81	83	86	86	85	80	75	65

Table 001-4
Proposed Effluent Limitations and Monitoring Requirements for Outfall 001

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	Continuous	Probe

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Outfall 003

Table 003-1 Final Limits
Proposed Effluent Limitations and Monitoring Requirements for Outfall 003

Parameter	Sample Frequency	Sample Type	Concentration mg/l		Mass (lb/d)		Source/Justification
			Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Total Residual Chlorine [1]	Daily	Grab	0.010	0.020	0.12	0.24	**327 IAC 5-2-11.5**

[1] Monitoring for TRC shall be 1 X Daily during Zebra or Quagga mussel intake chlorination, and continue for three additional days after Zebra or Quagga mussel treatment has been completed.

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Outfall 011

Table 011-1 Final Limits
Proposed Effluent Limitations and Monitoring Requirements for Internal Monitoring Location 011

Parameter	Sample Frequency	Sample Type	Concentration mg/l		Mass (lb/d)		Source/Justification
			Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Effluent Flow	Continuous	24 Hour Total	Report	Report	---	---	**327 IAC 5-2-13**
Total Suspended Solids	3 x Week	24 Hr Composite	Report	Report	6,000	20,000	**PP**
Oil & Grease	3 x Week	Grab	Report	Report	---	6,000	**PP, BPJ**
Ammonia-N	3 x Week	24 Hr Composite	Report	Report	Report	Report	**PP, 301(g)**
Total Cyanide	3 x Week	Grab	Report	Report	Report	21.0	**PP**
Phenols (4AAP)	3 x Week	Grab	Report	Report	Report	Report	**PP; 301(g)**
Total Lead	2 x Month	24 Hr Composite	Report	Report	Report	Report	**WQBEL**
Total Zinc	3 x Week	24 Hr Composite	Report	Report	34.6	99.7	**PP**
Hexavalent Chromium	3 x Week	Grab	Report	Report	0.19	0.55	**TBEL**
Total Residual Chlorine [1]	3 x Week	Grab	Report	Report	Report	5.92	**TBEL**
Naphthalene [2]	1 x Week	Grab	Report	Report	Report	0.66	**TBEL**
Tetrachloroethylene [2]	1 x Week	Grab	Report	Report	Report	0.99	**TBEL**

[1] TRC monitoring is required when the alkaline chlorination wastewater treatment system is being used.

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Outfall 002

Table 002-1 Final Limits
Proposed Effluent Limitations and Monitoring Requirements for Outfall 002

Parameter	Sample Frequency	Sample Type	Concentration mg/l		Mass (lb/d)		Source/Justification
			Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Total Residual Chlorine [3]	Daily	Grab	0.010	0.020[1]	24	48	**327 IAC 5-2-11.5**
Oil and Grease	Weekly	Grab	Report	Report	Report	Report	**PP**
Ammonia as N	Weekly	24 Hr Comp	Report	Report	Report	Report	**PP**
Dissolved Iron	Monthly	Grab	Report	Report	Report	Report	**PP**
Zinc	Monthly	24 Hr Comp	Report	Report	Report	Report	**327 IAC 5-2-11.5**
TSS	Weekly	24 HR Comp	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Lead	Monthly	24 Hr Comp	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Temperature	Continuous	Probe	---	---	---	---	**327 IAC 5-7**
Fluoride	Monthly	24 Hr Comp	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Phenols (4AAP)	Weekly	Grab	Report	Report	Report	Report	**Sec 301(g) CWA**
Effluent Flow [2]	Continuous	24 Hour Total	Report	Report	---	---	**327 IAC 5-2-13**

[1] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 144.1 lbs/day.
[2] The permittee has up to a six (6) month schedule of compliance from the effective date of the permit as outlined in Part I.D. of the permit in which to install the equipment necessary to accurately measure flow at Outfall 002.
[3] Monitoring for TRC shall only be during Zebra or Quagga mussel intake chlorination, and continue for three additional days after Zebra or Quagga mussel treatment has been completed.

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Table 002-2

The Temperature of Outfall 002 shall be monitored on a continuous basis. The highest temperature sustained over any two hour period within each day's 24 hour monitoring period shall not exceed the temperatures listed below:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°F	55	57	63	69	77	82	88	90	88	81	72	63

Table 002-3

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	Continuous	Probe

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[2] At the end of a twelve month sampling period, the permittee may request, in writing, a review of these monitoring requirements. Upon review by IDEM, the permit may be modified, after public notice and opportunity for hearing, to reduce or delete the monitoring requirements.

Outfall 111

Table 111-1 Final Limits
Proposed Effluent Limitations and Monitoring Requirements for Internal Monitoring Location 111

Parameter	Sample Frequency	Sample Type	Concentration ug/l		Mass (lb/d)		Source/Justification
			Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
2,3,7,8 Tetrachlorodibenzofuran	1 x Month	24 Hr Composite	---	<ML[1]	---	---	**TBEL**

[1] The limitation and standard for 2,3,7,8 – tetrachlorodibenzofuran (2,3,7,8 – TCDF) is expressed as less than the Minimum Level ("<ML"). The term Minimum Level (ML) means the level at which the analytical system gives recognizable signals and an acceptable calibration point. For 2,3,7,8 – TCDF, the minimum level is 10 pg/l per EPA Method 1613B for water and wastewater samples. The term pg/L means picograms per liter (ppt = 1.0×10^{-12} gram/L).

Outfall 009

Table 009-1 Final Limits
Proposed Effluent Limitations and Monitoring Requirements for Stormwater Outfall 009

Parameter	Sample Frequency	Sample Type	Concentration mg/l		Mass (lb/d)		Source/Justification
			Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	
Effluent Flow	Continuous	24 Hour Total	Report	Report	---	---	**327 IAC 5-2-13**
Total Suspended Solids	4 x Year	Grab	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Oil & Grease	4 x Year	Grab	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Fluoride	4 x Year	Grab	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Total Iron	4 x Year	Grab	Report	Report	Report	Report	**327 IAC 5-2-11.5**
Total Zinc	4 x Year	Grab	Report	Report	Report	Report	**327 IAC 5-2-11.5**

Table 009-2

	Quality or Concentration			Monitoring Measurement	Requirements Sample
	Daily	Daily			
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	Report	Report	s.u.	Continuous	Probe

Source/Justification Abbreviations:

BPJ: Best Professional Judgment indicates the potential for these contaminates to exist; therefore it is proposed that these parameters be monitored. These parameters are monitored and/or regulated at internal Monitoring location 011, and there is the potential for them to be introduced into Outfall 001 by storm water. It is proposed that these parameters be monitored, and in some cases limited, in order to protect the water quality of the Little Calumet River and in an effort to determine if additional

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loadings are being introduced from storm water and/or the non-contact cooling water. These parameters should be monitored on the same day as the parameter is monitored at internal monitoring location 011.

PP; 301(g): These are the limitations contained in the previous NPDES Permit and these were authorized by the 301(g) Variance approval. In the case of Ammonia-N, the above monthly average and daily maximum limitations represent the average of the seven day averages and the daily maximums contained in the previous permit. The limitations in the previous permit changed monthly and were not more stringent during one season.

WQBEL: These limitations are water quality based effluent limitations.

WQBEL; 316(a): Temperature Limitations are the water quality based effluent limitations contained in 327 IAC 327 2-1.5-8 Except for the Months of

TBEL: These limitations are technology based effluent limitations.

PP: These are the limitations contained in the previous NPDES Permit.

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6.2 Schedule of Compliance

The Reasonable Potential to exceed water quality based effluent limits analysis identified Mercury, Copper, Zinc and Silver in the effluent from Outfall 001 to have the potential to exceed the final effluent limitations in the permit. Based on the limited nature of the available data, the Burns Harbor Plant may not be able to assure 100% compliance with the new WQBEL effluent limits for these metals at the time the renewal NPDES permit is issued. Therefore, the proposed permit is eligible to contain a schedule of compliance for the new water quality-based effluent limitations for Mercury, Copper, Zinc and Silver at Outfall 001. The schedule of compliance requires ArcelorMittal to develop a plan to identify the sources of mercury, copper, Zinc and silver in the wastewater being treated and develop a plan to achieve compliance with the final effluent limits and implement the plan within 24 months after the plan to collect data and information regarding pollution prevention and treatment has been approved.

ArcelorMittal does not intentionally introduce Mercury, Copper, Zinc or Silver at the Burns Harbor Plant as raw materials, process additives, alloying elements or in any significant manner in the basic steel making or steel finishing processes. The presence of these materials in the Outfall 001 effluent at trace levels is likely due to a combination of factors including trace quantities in materials used at the Plant, atmospheric deposition, storm water runoff, and others. However, the exact source(s) are currently unknown.

Given these circumstances, the following compliance schedule regarding the final effluent limits for Copper, Mercury, Zinc and Silver is proposed:

> The permittee shall achieve compliance with the effluent limitations specified for Mercury, Copper, Zinc and Silver at Outfall 001 as soon as possible but no later than Fifty-four (54) months from the effective date of this permit in accordance with the following schedule:
>
> 1. The permittee shall submit a written Quality Assurance Project Plan (QAPP) to identify the sources of Mercury, Copper, Zinc and Silver to the Data Compliance Section of the Office of Water Quality (OWQ) no later than three (3) months from the effective date of this permit. IDEM will provide any comments within 30 days of receipt of the QAPP. If comments are made, IDEM will provide the permittee with the opportunity to discuss any comments prior to implementation of the QAPP. If IDEM does not comment within 30 days of its receipt of the QAPP, the permittee may proceed with implementation as set forth in the QAPP. The QAPP shall include a description of the method(s) selected for identifying the sources of Mercury, Copper, Zinc and Silver, in addition to any other relevant information. The QAPP shall include a specific time line specifying when each of the steps will be taken. The new Outfall 001 effluent limits for Mercury, Copper, Zinc and Silver are deferred for the term of this compliance schedule, unless the effluent limits can be met at an earlier date. The permittee shall notify the Data Compliance Section of OWQ as soon as the effluent limits for Mercury, Copper, Zinc and Silver can be met. Upon receipt of such notification by OWQ, the final

limits for Mercury, Copper, Zinc and Silver will become effective, but no later than Fifty-four (54) months from the effective date of this permit. Monitoring and reporting of the Outfall 001 effluent for these parameters is required during the interim period. The QAPP shall address, at a minimum, the following:

a. Identification of the sampling locations that will be utilized to evaluate potential sources of Mercury, Copper, Zinc and Silver to Outfall 001 (current and historic).

b. Development of a sampling plan to identify sources of Mercury, Copper, Zinc and Silver.

c. Assessment of the potential pollution prevention activities for Mercury, Copper, Zinc and Silver at the facility. The assessment should include a methodology for determining the feasibility of eliminating or reducing Mercury, Copper, Zinc and Silver from the internal wastestreams identified for inclusion in the sampling plan.

2. The permittee shall submit a report to the Data Compliance Section of OWQ no later than Fifteen (15) months from the effective date of this permit. This report shall include detailed information on:

a. All sampling conducted during the previous 12 months for Mercury, Copper, Zinc and Silver including all analytical results obtained up to the time of the report.
b. A description of any pollution prevention activities implemented as a result of the sampling results (such as replacement of raw or intermediate products containing excessive quantities of Mercury, Copper, Zinc or Silver) that reduce or eliminate the addition of Mercury, Copper, Zinc or Silver into Outfall 001.

3. The permittee shall submit a QAPP report to the Data Compliance Section of OWQ no later than 27 months from the effective date of this permit. This report shall include detailed information on:

a. The results of all sampling performed during the previous 24 months to evaluate potential sources of Mercury, Copper, Zinc and Silver to Outfall 001.
b. The evaluation of short-term and long-term control measures, including, but not limited to, best management practices, pollution prevention activities and treatment technologies that will reduce the concentration of Mercury, Copper, Zinc or Silver in the effluent from Outfall 001.
c. A description of any control measures that were identified and implemented during the previous 24 months.

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d. Any proposed or actual construction of additional treatment technology to reduce the concentration of Mercury, Copper, Zinc or Silver in the effluent from Outfall 001.
e. The anticipated date when the permittee will submit the Final Plan for Compliance (FPC) for the final effluent limits for Mercury, Copper, Zinc and Silver.

3. The permittee shall submit a proposed Final Plan for Compliance (FPC) containing the source identification report for Mercury, Copper, Zinc and Silver and the plan for implementing pollution prevent or installing treatment where feasible to achieve compliance with the final limits for Mercury, Copper, Zinc and Silver no later than thirty (30) months after the effective date of this permit. IDEM will provide any comments within 30 days of receipt of the FPC. If comments are made, IDEM will provide the permittee with the opportunity to discuss the comments prior to implementation. If IDEM does not comment within 30 days of its receipt of the FPC, the permittee may proceed with implementation as set forth in the FPC.

4. The permittee shall submit a report to the Data Compliance Section of OWQ no later than Thirty-Nine (39) months from the effective date of this permit. This report shall include detailed information on:

   a. The implementation of pollution prevention activities such as replacement of raw or intermediate products containing excessive quantities of Mercury, Copper, Zinc or Silver; or production practices that reduce or eliminate the addition of Mercury, Copper, Zinc or Silver into the wastewater.
   b. The construction of treatment technology identified in the FPC for the reduction of Mercury, Copper, Zinc or Silver in the effluent from Outfall 001
   c. the achievement of milestones identified in the FPC.
   d. the anticipated date when the discharge from Outfall 001 can achieve compliance with the final effluent limits for Mercury, Copper, Zinc or Silver.

5. The permittee shall submit a progress report to the Data Compliance Section of OWQ no later than Forty-Eight (48) months from the effective date of this permit. This report shall include detailed information on:

   a. The implementation of pollution prevention activities such as replacement of raw or intermediate products containing excessive quantities of Mercury, Copper, Zinc or Silver; or production practices that reduce or eliminate the addition of Mercury, Copper, Zinc or Silver into the wastewater.

EXHIBIT 5

b. The construction of treatment technology identified in the FPC for the reduction of Mercury, Copper, Zinc or Silver in the effluent from Outfall 001
c. the achievement of milestones identified in the FPC.
d. the anticipated date when the discharge from Outfall 001 can achieve compliance with the final effluent limits for Mercury, Copper, Zinc or Silver.

6. Within thirty (30) days of completion of any additional pollutant control equipment, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

7. The permittee shall comply with the final effluent limitations for Mercury, Copper, Zinc and Silver at Outfall 001 no later than Fifty-four (54) months from the effective date of this permit.

8. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the OWQ stating the cause of noncompliance, and remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

6.3 Special Conditions

The proposed permit contains special conditions and monitoring programs in addition to the proposed effluent limitations and routine monitoring requirements. The proposed special conditions and monitoring programs are listed below. Reference is made to the proposed permit for the specific requirements of each program.

a. Section 316(b) Requirements

Section 316(b) of the federal Clean Water Act requires that facilities minimize adverse environmental impact resulting from the operation of cooling water intake structures (CWIS) by using the "best technology available" (BTA). U.S. EPA has promulgated rules to implement these requirements for new facilities (Phase I rules), large, existing power plants (Phase II rules) which are currently remanded, and offshore oil and gas extraction facilities (Phase III rules), and that implementation must take place through the issuance of NPDES permits. However, there is a large universe of facilities which are not specifically addressed by the rules, including:

- New facilities with a CWIS design flow less than 2 MGD;
- Existing power plants with a CWIS design flow less than 50 MGD;
- Manufacturing facilities such as existing steel mills, paper mills, etc. with a surface water intake that use at least a portion of their intake flow for cooling purposes.

U.S. EPA has recently emphasized that all of these facilities, including those not specifically addressed by rules must be evaluated for 316(b) compliance. 40 C.F.R. §125.90(b) directs permitting authorities to establish 316(b) requirements on a best professional judgment (BPJ) basis for existing facilities not subject to categorical section 316(b) regulations (Phase I, II (currently remanded) or III rules. IDEM is required to make a BTA determination using BPJ so the permit will comply with the federal regulation.

ArcelorMittal Burns Harbor has submitted documentation on the design and operation of the cooling water intake structures (CWIS) through the permit application.

ArcelorMittal Burns Harbor has two intake water cribs located in Lake Michigan approximately 3,600 feet offshore in approximately 40 feet of water. The intake structures are designed to withdraw water from the hypolimnion layer of Lake Michigan to exclude debris, detritus and aquatic biota. The West Crib is connected to Lake Michigan Pumping Station #2 and the East Crib is connected to Lake Michigan pumping stations #1 and #2. Lake Michigan Pumping Station #1 also has an emergency connection to the intake crib for the neighboring NIPSCO Baily Station. Both intake structures are operated 24 hours a day on a year round basis.

At the full design capacity of 1.25 Billion gallons per day, the intake velocity of the cribs is 0.29 feet per second. Bethlehem Steel completed a study of the entrainment of fish eggs and larvae that was conducted from April, 1976 to April, 1977. They study did not raise any concerns by the state or federal environmental agencies.

ArcelorMittal Burns Harbor provided IDEM with a description of their intake screens and calculated the velocity of water across the intake screens at Lake Michigan Pumping Station #s 1 and 2. The intake velocity of water across the intake screen at Lake Michigan Pumping Station #1 is 0.19 feet per second and the intake velocity of the water across the intake screen at Lake Michigan Pumping Station #2 is 0.28 feet per second.

Based upon this information and documentation provided to IDEM, IDEM has evaluated the information and has made a BTA determination on the information submitted.

I. The magnitude of the calculated velocities at the mouth of the intake structures in Lake Michigan and through the traveling screens are less than a flow velocity of 0.5 ft/s that is believed to impair fish swimming ability.

II. A permit condition has been included to determine adequate fish return of species to demonstrate that the CWIS minimizes fish mortality.

III. The off shore location of the cooling water intake structures are located in deep water which minimizes entrainment.

IV. ArcelorMittal Burns Harbor also utilizes three cooling towers to reduce the amount of cooling water used at the facility.

V. The average calculated velocity through the traveling screens at Pump #1 is 0.19 ft/s and the average calculated velocity through the traveling screens at Pump #2 is 0.28 ft/s.

VI. The maximum annual water withdrawn during the previous five year period is 31.7 % of the design capacity.

In accordance with 327 IAC 2-1.5-8 the permit proposes that the ArcelorMittal Burns Harbor Lake Michigan water intake structure must be designed and located to minimize entrainment and damage to desirable organisms. In general, the intake structure shall have minimum water velocity and shall not be located in spawning or nursery areas of important fishes. Water velocity at screens and other exclusion devices shall also be at a minimum. The specific requirements pertaining to the intake structures are contained in Section III.A of the proposed NPDES Permit.

ArcelorMittal Burns Harbor LLC is being required to conduct a two year study within one year of the effective date of the permit to further characterize the nature and extent of the environmental impacts from the Cooling Water Intake Structures in a scientifically valid manner. This determination will be reassessed at the next permit reissuance to ensure that the CWIS continues to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). A confirmation study is required to be conducted five years after the initial two year study has been completed.

b. Effluent Biomonitoring Requirements

Effluent biomonitoring is proposed to determine compliance with the Whole Effluent Toxicity effluent limitation. The proposed permit will require Whole Effluent Toxicity Testing monthly for the first three months of the permit and once every three months thereafter if no toxicity is demonstrated. If toxicity is demonstrated the permittee will be required to conduct a Toxicity Reduction Evaluation and the permittee is required to eliminate the toxicity no later than three years from the determination of toxicity.

c. Polychlorinated Biphenyl

There shall be no discharge of polychlorinated biphenyl (PCBs) compounds such as those commonly used for transformer fluid. The prohibition against the discharge of PCBs is contained in Section III of the proposed NPDES Permit.

d. Biocide Types and Prohibitions

The permittee must receive written permission from the IDEM prior to using any biocide or molluscicide other than chlorine. The use of any biocide containing tributyl tin oxide is prohibited.

e. **Intake Screen Washing**

There shall be no discharge of debris from intake screen washing operations which will settle to form objectionable deposits in amounts sufficient to be unsightly or deleterious, or which will produce colors or odors constituting a nuisance. The discharge of intake screen washing wastewater must comply with all of the terms and conditions of the narrative water quality standards.

6.4 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.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.

6.5 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.

EXHIBIT 5

7.0 Waste Load Allocation and Reasonable Potential to Exceed WQBELs Analysis

TABLE 1
Calculation of Projected Effluent Quality
For ArcelorMittal Burns Harbor Outfall 001 in Porter County
(IN0000175, WLA000546)

Parameter	Monthly Average PEQ					Daily Maximum PEQ				
	Maximum Monthly Average (mg/l)	Number of Monthly Averages	CV	Multiplying Factor	Monthly Average PEQ (mg/l)	Maximum Daily Sample (mg/l)	Number of Daily Samples	CV	Multiplying Factor	Daily Maximum PEQ (mg/l)
Antimony	0.0015	10	0.2	1.2	0.0018	0.0018	43	0.2	1.0	0.0018
Arsenic III					0.031	0.005	1	0.6	6.2	0.031
Barium					0.12	0.019	1	0.6	6.2	0.12
Beryllium					0.012	0.002	1	0.6	6.2	0.012
Cadmium					0.0031	0.0005	1	0.6	6.2	0.0031
Chromium (VI)	0.005	10	0.0	1.0	0.005	0.005	42	0.0	1.0	0.005
Total Chromium					0.031	0.005	1	0.6	6.2	0.031
Cobalt	0.00043	10	0.4	1.5	0.00065	0.0016	43	1.1	1.1	0.0018
Copper	0.021	10	0.4	1.5	0.032	0.063	44	0.8	1.1	0.069
Lead	0.0094	10	0.7	1.9	0.018	0.024	43	1.4	1.2	0.029
Manganese					0.31	0.05	1	0.6	6.2	0.31
Mercury	0.00000332	5	0.6	2.3	0.0000076	0.00000588	17	0.8	1.6	0.0000094
Molybdenum					0.19	0.03	1	0.6	6.2	0.19
Nickel					0.062	0.01	1	0.6	6.2	0.062
Selenium	0.0021	10	0.3	1.3	0.0027	0.0026	43	0.5	1.1	0.0029
Silver	0.000068	9	0.6	1.8	0.00012	0.00026	38	1.6	1.3	0.00034
Thallium	0.002	10	0.8	2.0	0.004	0.0038	43	1.2	1.2	0.0046
Tin	0.0034	10	0.6	1.7	0.0058	0.0082	43	1	1.1	0.009
Titanium					0.05	0.008	1	0.6	6.2	0.05
Vanadium	0.0043	10	0.5	1.6	0.0069	0.011	43	1.2	1.2	0.013
Zinc	0.159	9	0.6	1.8	0.29	0.3	39	0.7	1.1	0.33
Benzene	0.0014	8	0.6	1.9	0.0027	0.00267	37	0.5	1.1	0.0029
Benzo(a)anthracene	0.000081	10	0.2	1.2	0.000097	0.00011	43	0.3	1.0	0.00011
Benzo(k)fluoranthene	0.000054	10	0.6	1.7	0.000092	0.00008	43	0.7	1.1	0.000088
Benzo(a)pyrene	0.000054	10	0.4	1.5	0.000081	0.00007	43	0.5	1.1	0.000077
Chloroform	0.00098	8	0.6	1.9	0.0019	0.0012	36	0.1	1.0	0.0012
Chrysene	0.000044	10	0.4	1.5	0.000066	0.00009	43	0.6	1.1	0.000099
2,4-Dimethylphenol	0.00087	10	0.0	1.0	0.00087	0.00095	43	0.1	1.0	0.00095
Ethylbenzene					0.012	0.002	1	0.6	6.2	0.012
Fluoranthene	0.000063	10	0.4	1.5	0.000095	0.00016	43	0.7	1.1	0.00018
Naphthalene	0.0012	10	1.5	3.0	0.0036	0.002	43	1.6	1.2	0.0024
4-Nitrophenol	0.0047	10	0.0	1.0	0.0047	0.0051	43	0.1	1.0	0.0051
Phenanthrene	0.000047	10	0.2	1.2	0.000056	0.000095	43	0.5	1.1	0.0001
Phenol					0.12	0.02	1	0.6	6.2	0.12
Pyrene	0.000096	10	0.1	1.1	0.00011	0.0001	43	0.2	1.0	0.0001
Tetrachloroethylene					0.012	0.002	1	0.6	6.2	0.012
Toluene					0.012	0.002	1	0.6	6.2	0.012
1,1,1-Trichloroethane					0.012	0.002	1	0.6	6.2	0.012
Boron	0.158	10	0.6	1.7	0.27	0.23	43	0.6	1.1	0.25
Chloride					49	49	36	0.1	1.0	49
Cyanide, Free	0.0036	10	0.1	1.1	0.004	0.0058	43	0.1	1.0	0.0058
Cyanide, Total	0.0078	36	0.5	1.1	0.0086	0.016	157	0.6	0.9	0.014
Sulfate	61	10	0.2	1.2	73	88	44	0.2	1.0	88
Fluoride	0.99	10	0.1	1.1	1.1	1.2	44	0.2	1.0	1.2
Total Ammonia (as N)										
Summer	0.4	21	0.3	1.2	0.48	0.68	289	0.5	0.9	0.61
Winter	0.5	15	0.3	1.2	0.6	0.84	195	0.4	0.9	0.76

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TABLE 2
Results of Reasonable Potential Statistical Procedure
For ArcelorMittal Burns Harbor Outfall 001 in Porter County
(IN0000175, WLA000546)

Parameter	Monthly Average Comparison			Daily Maximum Comparison			WQBELs Required?
	Monthly Average PEQ (mg/l)	Monthly Average PEL (mg/l)	PEQ > PEL?	Daily Maximum PEQ (mg/l)	Daily Maximum PEL (mg/l)	PEQ > PEL?	
Antimony	0.0018	0.067	No	0.0018	0.13	No	No
Arsenic III	0.031	0.12	No	0.031	0.25	No	No
Barium	0.12	1.0	No	0.12	2.0	No	No
Beryllium	0.012	0.022	No	0.012	0.044	No	No
Cadmium	0.0031	0.0044	No	0.0031	0.0087	No	No
Chromium (VI)	0.005	0.0087	No	0.005	0.018	No	No
Total Chromium	0.031	0.17	No	0.031	0.33	No	No
Cobalt	0.00065	0.016	No	0.0018	0.032	No	No
Copper	0.032	0.018	Yes	0.069	0.035	Yes	Yes
Lead	0.018	0.018	No	0.029	0.036	No	No
Manganese	0.31	1.0	No	0.31	2.0	No	No
Mercury	0.0000076	0.0000013	Yes	0.0000094	0.0000032	Yes	Yes
Molybdenum	0.19	0.65	No	0.19	1.3	No	No
Nickel	0.062	0.098	No	0.062	0.2	No	No
Selenium	0.0027	0.0042	No	0.0029	0.0084	No	No
Silver	0.00012	0.000048	Yes	0.00034	0.000097	Yes	Yes
Thallium	0.004	0.005	No	0.0046	0.01	No	No
Tin	0.0058	0.12	No	0.009	0.24	No	No
Titanium	0.05	2.1	No	0.05	4.2	No	No
Vanadium	0.0069	0.01	No	0.013	0.02	No	No
Zinc	0.29	0.15	Yes	0.33	0.29	Yes	Yes
Benzene	0.0027	0.0033	No	0.0029	0.0079	No	No
Benzo(a)anthracene	0.000097	0.0039	No	0.00011	0.0079	No	No
Benzo(k)fluoranthene	0.000092	0.0022	No	0.000088	0.0044	No	No
Benzo(a)pyrene	0.000081	0.000081	No	0.000077	0.0002	No	No
Chloroform	0.0019	0.009	No	0.0012	0.022	No	No
Chrysene	0.000066	0.0042	No	0.000099	0.0084	No	No
2,4-Dimethylphenol	0.00087	0.018	No	0.00095	0.035	No	No
Ethylbenzene	0.012	0.092	No	0.012	0.19	No	No
Fluoranthene	0.000095	0.003	No	0.00018	0.0061	No	No
Naphthalene	0.0036	0.022	No	0.0024	0.044	No	No
4-Nitrophenol	0.0047	0.049	No	0.0051	0.098	No	No
Phenanthrene	0.000056	0.00078	No	0.0001	0.0016	No	No
Phenol	0.12	0.15	No	0.12	0.3	No	No
Pyrene	0.00011	0.0034	No	0.0001	0.0067	No	No
Tetrachloroethylene	0.012	0.012	No	0.012	0.028	No	No
Toluene	0.012	0.079	No	0.012	0.16	No	No
1,1,1-Trichloroethane	0.012	0.34	No	0.012	0.69	No	No
Boron	0.27	1.3	No	0.25	2.7	No	No
Chloride	49	192	No	49	385	No	No
Cyanide, Free	0.004	0.0044	No	0.0058	0.0088	No	No
Cyanide, Total	0.0086	51	No	0.014	123	No	No
Sulfate	73	221	No	88	443	No	No
Fluoride	1.1	1.1	No	1.2	2.3	No	No
Total Ammonia (as N)							
Summer	0.48	0.75	No	0.61	1.7	No	No
Winter	0.6	0.75	No	0.76	1.7	No	No

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EXHIBIT 5

TABLE 4
Results of Reasonable Potential Statistical Procedure
For ArcelorMittal Burns Harbor Outfall 002 in Porter County
(IN0000175, WLA000546)

Parameter	Monthly Average Comparison			Daily Maximum Comparison			WQBELs Required?
	Monthly Average PEQ (mg/l)	Monthly Average PEL (mg/l)	PEQ > PEL?	Daily Maximum PEQ (mg/l)	Daily Maximum PEL (mg/l)	PEQ > PEL?	
Chloride	20	188	No	20	378	No	No
Sulfate	49	205	No	49	411	No	No
Iron, Dissolved	0.11	0.25	No	0.22	0.49	No	No
Total Ammonia (as N)							
Summer	0.22	0.54	No	0.29	1.1	No	No
Winter	0.27	0.54	No	0.54	1.1	No	No

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TABLE 5
Water Quality-based Effluent Limitations
For ArcelorMittal Burns Harbor Outfall 001 in Porter County
(IN0000175, WLA000546)

Parameter	Quality or Concentration			Quantity or Loading*			Monthly Sampling Frequency
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	
Chromium (VI)	0.0087	0.018	mg/l	9.9	21	lbs/day	4
Copper	0.018	0.035	mg/l	21	40	lbs/day	4
Lead	0.018	0.036	mg/l	21	41	lbs/day	4
Mercury	0.0000013	0.0000032	mg/l	0.0015	0.0037	lbs/day	1
Silver	0.000048	0.000097	mg/l	0.055	0.11	lbs/day	4
Zinc	0.15	0.29	mg/l	171	332	lbs/day	4
Naphthalene	0.022	0.044	mg/l	25	50	lbs/day	4
Tetrachloroethylene	0.012	0.028	mg/l	14	32	lbs/day	4
Chlorine (total residual)	0.01	0.02	mg/l	11	23	lbs/day	4
Cyanide, Total	51	123	mg/l	58309	140628	lbs/day	4
Total Ammonia (as N)							
Summer	0.75	1.7	mg/l	857	1944	lbs/day	10
Winter	0.75	1.7	mg/l	857	1944	lbs/day	10

*Based on an effluent flow of 137 mgd.

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EXHIBIT 5

TABLE 6
Water Quality-based Effluent Limitations
For ArcelorMittal Burns Harbor Outfall 002 in Porter County
(IN0000175, WLA000546)

Parameter	Quality or Concentration			Quantity or Loading*			Monthly Sampling Frequency
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	
Chlorine (total residual)	0.01	0.02	mg/l	24	48	lbs/day	4

*Based on an effluent flow of 288 mgd.

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EXHIBIT 5

TABLE 7
Water Quality-based Effluent Limitations
For ArcelorMittal Burns Harbor Outfall 003 in Porter County
(IN0000175, WLA000546)

Parameter	Quality or Concentration			Quantity or Loading*			Monthly Sampling Frequency
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	
Chlorine (total residual)	0.01	0.02	mg/l	0.12	0.24	lbs/day	4

*Based on an effluent flow of 1.44 mgd.

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EXHIBIT 5

8.0 – Effluent Guideline Calculations

ATTACHMENT B

ARCELORMITTAL BURNS HARBOR
CHESTERTON, INDIANA
TECHNOLOGY-BASED EFFLUENT LIMITS
LBS/DAY

PROCESS	ELG	PRODUCTION (TONS/DAY)	TSS AVE	TSS MAX	OIL & GREASE AVE	OIL & GREASE MAX	TOTAL LEAD AVE	TOTAL LEAD MAX	TOTAL ZINC AVE	TOTAL ZINC MAX	AMMONIA-N AVE	AMMONIA-N MAX	T. CYANIDE AVE	T. CYANIDE MAX
SINTERING[1]	420.22/23	11,849.2	0.0250 592.46	0.0751 1779.75	0.00501 118.73	0.0150 355.48	0.000150 3.55	0.000451 10.69	0.000225 5.33	0.000676 16.02	0.00501 118.73	0.0150 355.48	0.00150 35.55	0.00300 71.10
IRONMAKING "C" and "D"	420.32/33 (a)	15,145.3	0.0280 787.56	0.0762 2368.72	0	0	0.0000876 2.65	0.000263 7.97	0.000131 3.97	0.000394 11.93	0.00292 88.45	0.00876 265.35	0.000876 26.53	0.00175 53.01
STEELMAKING BOF-SC	420.42/43 (b)	8,721.2	0.0104 181.40	0.0312 544.20	0	0	0.0000626 1.09	0.000188 3.28	0.0000938 1.64	0.000282 4.92	0	0	0	0
STEELMAKING BOF-OC	420.42/43 (c)	16,996.2	0.0229 778.43	0.0687 2335.28	0	0	0.000138 4.69	0.000413 14.04	0.000207 7.04	0.000620 21.08	0	0	0	0
VACUUM DEGASSING	420.52/53	6,405.0	0.00521 66.74	0.0156 199.84	0	0	0.0000313 0.40	0.0000939 1.20	0.0000469 0.60	0.000141 1.81	0	0	0	0
CONTINUOUS CASTING No. 1	420.62/63	12,589.2	0.0260 670.24	0.0780 2010.72	0.0078 201.07	0.0234 603.21	0.0000313 0.81	0.0000939 2.42	0.0000469 1.21	0.000141 3.63	0	0	0	0
CONTINUOUS CASTING No. 2	420.62/63	13,472.2	0.026 700.55	0.078 2101.66	0.0078 210.17	0.0234 630.50	0.0000313 0.84	0.0000939 2.53	0.0000469 1.26	0.000141 3.80	0	0	0	0
HOT FORMING[2] PRIMARY w/scarfing	420.72/77 (a)(2)	0.0	0.083 0.00	0.221 0.00	0	0.0553 0.00	0.0000375 0.00	0.000113 0.00	0.0000563 0.00	0.000169 0.00	0	0	0	0
HOT FORMING[2] STRIP 80"	420.72/77 (c)(1)	16,509.5	0.160 5283.04	0.427 14099.11	0	0.107 3533.03	0.000108 3.57	0.000325 10.73	0.000163 5.38	0.000488 16.11	0	0	0	0
HOT FORMING[2] PLATE 160", 110"	420.72/77 (c)(2)	6,785.7	0.0851 1165.44	0.227 3082.07	0	0.0568 771.20	0.000108 1.47	0.000325 4.41	0.000163 2.21	0.000488 6.63	0	0	0	0
HCl PICKLING Nos. 1, 2, CNTL	420.92/93 (b)(2)	12,283.9	0.0350 858.87	0.0818 2009.65	0.0117 287.44	0.0350 859.87	0.000175 4.30	0.000526 12.92	0.000234 5.75	0.000701 17.22	0	0	0	0
HCl PICKLING Fume Scrubbers	420.92/93 (b)(4)	3	2.45 15.20	5.72 37.83	0.819 5.42	2.45 16.20	0.0123 0.08	0.0368 0.24	0.0164 0.11	0.0491 0.32	0	0	0	0
COLD ROLLING Tandem Mill, Duo Mill	420.102/103 (a)(2)	8,794.3	0.00313 55.05	0.00926 110.10	0.00104 18.29	0.00261 45.91	0.0000156 0.27	0.0000469 0.82	0.0000104 0.18	0.0000313 0.55	0	0	0	0
COLD ROLLING Temper Mill	420.102/103 (a)(4)	6,530.8	0.0113 147.60	0.0225 293.89	0.00376 48.11	0.00939 122.65	0.0000563 0.74	0.000169 2.21	0.0000376 0.49	0.000113 1.48	0	0	0	0
ALKALINE CLEANING HDCL	420.112 (b)	1,843.3	0.0438 161.47	0.102 376.03	0.0146 53.82	0.0438 161.47	0	0	0	0	0	0	0	0
HOT DIP GALV. HDGL	420.123/127 (a)(1)	1,843.3	0.0751 276.86	0.175 646.16	0.0250 92.17	0.0751 276.86	0.000376 1.39	0.00113 4.17	0.000500 1.84	0.00150 5.53	0	0	0	0
HOT DIP GALV. Fume Scrubber	420.123/127 c	1	16.3 35.93	38.1 84.00	5.45 12.02	16.3 35.93	0.0123 0.03	* 0.0368 0.08	0.0164 0.04	0.0491 0.11	0	0	0	0
TOTAL MILL Outfall 011		(lbs/day) (kg/day)	11,768.85 5,338	32,078.00 14,550	1,048.23 475	7,412.32 3,362	25.88 11.74	77.72 35.25	37.05 16.81	111.14 50.41	207.16 94.0	620.82 281.6	52.05 23.16	124.10 56.28

Notes
[1]BAT for 2,3,7,8 - TCDF is <ML, or < 10 pg/L
[2]BPJ BAT effluent limits for lead and zinc for Hot Forming operations from 1982 EPA Development Document, Vol IV, p.345 (EPA 440/1-82/024; May 1982).

EXHIBIT 5

ATTACHMENT B

ARCELORMITTAL BURNS HARBOR
CHESTERTON, INDIANA
TECHNOLOGY-BASED EFFLUENT LIMITS
LBS/DAY

PROCESS	ELG	PRODUCTION (TONS/DAY)	PHENOLS(4AAP) AVE	PHENOLS(4AAP) MAX	Naphthalene MAX	TCE MAX	Hexavalent Chromium Ave.	Hexavalent Chromium Max.	TRC MAX
SINTERING[1]	420.22/23	11,849.2	0.0000501 1.19	0.000100 2.37	0	0			0
IRONMAKING "C" and "D"	420.32/33 (a)	15,145.3	0.0000292 0.88	0.0000584 1.77	0	0			0.000146 4.42
STEELMAKING BOF-SC	420.42/43 (b)	8,721.2	0	0	0	0			0
STEELMAKING BOF-OC	420.42/43 (c)	16,986.2	0	0	0	0			0
VACUUM DEGASSING	420.52/53	8,485.0	0	0	0	0			0
CONTINUOUS CASTING No. 1	420.62/63	12,889.2	0	0	0	0			0
CONTINUOUS CASTING No. 2	420.62/63	13,472.2	0	0	0	0			0
HOT FORMING[2] PRIMARY w/scarfing	420.72/77 (a)(2)	0.0	0	0	0	0			0
HOT FORMING[2] STRIP 80"	420.72/77 (c)(1)	16,509.5	0	0	0	0			0
HOT FORMING[2] PLATE 160", 110"	420.72/77 (c)(2)	6,788.7	0	0	0	0			0
HCl PICKLING Nos. 1, 2, CHTL	420.92/93 (b)(2)	12,283.9	0	0	0	0			0
HCl PICKLING Fume Scrubbers	420.92/93 (b)(4)	3	0	0	0	0			0
COLD ROLLING Tandem Mill, Duo Mill	420.102/103 (a)(2)	8,794.3	0	0	0.0000104 0.18	0.0000156 0.27			0
COLD ROLLING Temper Mill	420.102/103 (a)(4)	5,530.8	0	0	0.0000375 0.48	0.0000563 0.74			0
ALKALINE CLEANING HDCL	420.112 (b)	1,843.3	0	0	0	0			0
HOT DIP GALV. HDGL	420.123/127 (a)(1)	1,843.3	0	0	0	0			0
HOT DIP GALV. Fume Scrubber	420.123/127 c	1	0	0	0	0			0
TOTAL MILL Outfall 011		(lbs/day) (kg/day)	2.07 0.94	4.14 1.88	0.57 0.31	1.01 0.46	0.19 0.09	0.66 0.28	4.42 2.01

Notes
[1]BAT for 2,3,7,8 - TCDF is <ML, or < 10 pg/L
[2]BPJ BAT effluent limits for lead and zinc for Hot Formir

EXHIBIT 5

9.0 Storm Water Drainage Map and Description

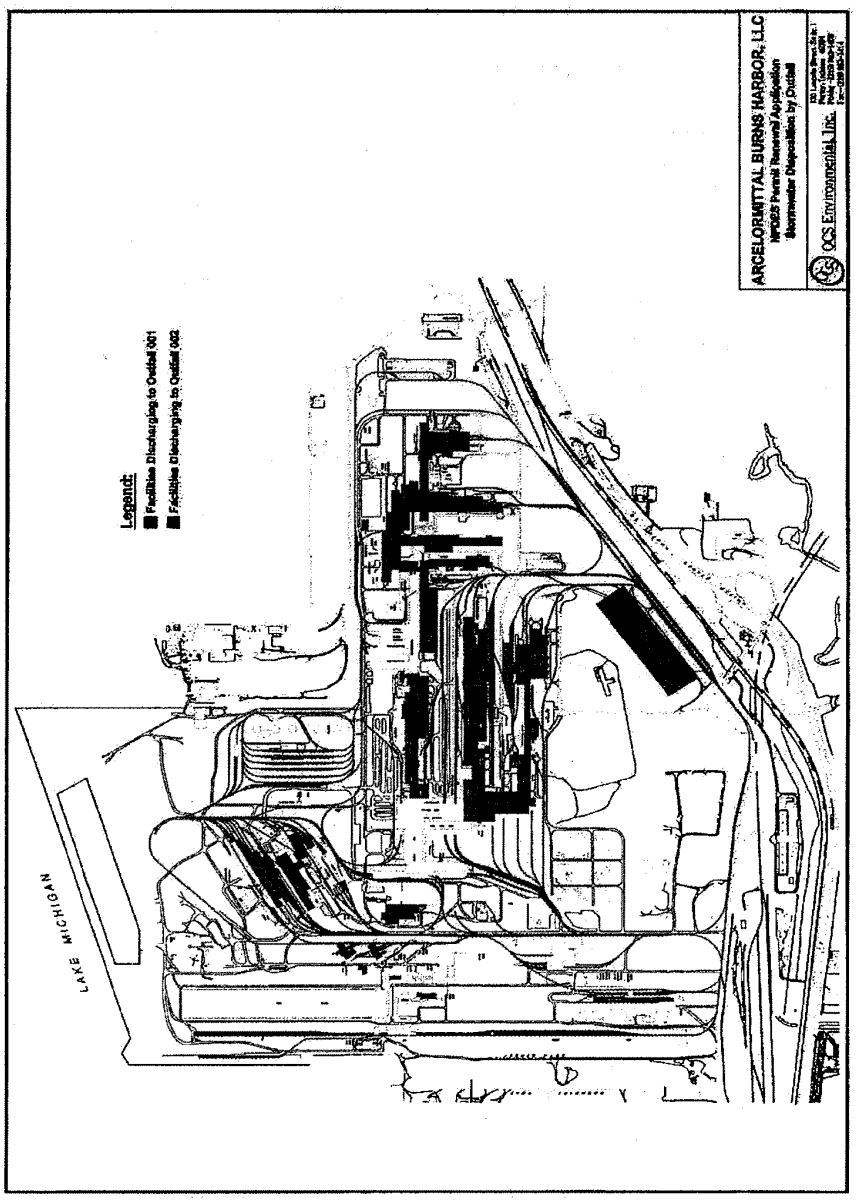

EXHIBIT 5

**STORMWATER DISPOSITION FOR ARCELORMITTAL BURNS HARBOR LLC,
BURNS HARBOR, INDIANA
NPDES PERMIT NO. IN 0000175**

RAW MATERIAL STORAGE AREAS

ArcelorMittal Burns Harbor, LLC. (Burns Harbor) has several large outdoor material storage yards. These storage yards include storage for coal, coke, iron ore, slag, steel slabs (slab yard) and iron-bearing/flux raw materials for the Sinter Plant (bedding piles). These large storage yards are located at various locations throughout the plant. All of the storage yards have been graded flat and have bases consisting of either the materials stored (e.g., coal, coke, iron ore) or slag covering the indigenous soils. All the bases of the storage yards are permeable to allow the infiltration of precipitation falling onto the storage yards. After infiltrating through the bases of the storage yards, the precipitation percolates through the underlying sandy permeable soils.

The flat terrain of the storage yards discourages sheet flow of precipitation from the storage areas. There are no collection structures surrounding the storage yards that would serve as significant conduits of run-off to surface water bodies. As a result, there is no significant storm-water runoff from these material storage areas.

STORMWATER SEWER SYSTEM DISCHARGING THROUGH OUTFALL 002

The storm sewer system discharging through Outfall 002 collects non-contact cooling water and storm water run-off from, primarily, roadways and roof drains. The primary operational facilities served by this sewer system include the coke ovens, blast furnaces, power station, sinter plant, blast furnace granulated coal injection, basic oxygen furnaces, and continuous casters. Material storage is limited in these areas to, primarily, spare parts and products, When it has been determined that there may be a significant risk for contamination of stormwater runoff, such as at the coke oven coal chemical plant, all the stormwater manholes have been elevated above grade in order to minimize any contaminated run-off infiltration.

STORMWATER SEWER SYSTEM DISCHARGING THROUGH OUTFALL 001

The storm sewer system discharging through Outfall 001 collects non-contact cooling water and storm water run-off from, primarily, roadways and roof drains. The primary operational facilities served by this sewer system include the hot strip mill, plate mills, proposed landfill, pickle line, galvanize line and other cold mill operations. Material storage is limited in these areas to, primarily, spare parts and products.

EXHIBIT 5