NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PROGRAM

FACT SHEET
for
NPDES Permit No. IN 0000281

Corporate Address:

United States Steel LLC
600 Grant Street
Pittsburgh, PA 15230

Facility Address:

USS Gary Works
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Gary, Indiana 46401

ORGANIZATION OF FACT SHEET

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A. Receiving Waters and Use Classifications

1. Receiving Waters: Grand Calumet River
Lake Michigan
Stockton Pond

2. Use Classifications:

The Grand Calumet River is classified for full-body contact recreation; well-balanced, warm water aquatic community; and, industrial water supply. The Indiana portion of the open water of Lake Michigan is designated as salmonid waters and shall be capable of supporting a salmonid fishery. In addition, Lake Michigan is designated for full-body contact recreation and capable of supporting a well-balanced water aquatic community. Stockton Pond is classified for full body contact recreation and well-balanced, warm water aquatic community. These waterbodies are identified as waters of the state within the Great Lakes system. As such, they are subject to the water quality standards specific to Great Lakes system dischargers as found in 327 IAC 2-1.5, 327 IAC 5-1.5, and 327 IAC 5-2.

B. Description of Facility

1. General

United States Steel (USS) - Gary Works facility is the largest fully integrated steel mill in North America, with capacity to produce over 8 million tons of raw steel per year. Intermediate and final products include coke, sinter, iron, raw steel, cast steel, plate, hot strip, cold rolled strip and coated steels.

Following are production rates reported by USS in its NPDES permit application for operations limited by 40 CFR 420, which comprises the effluent limitations guidelines for the Iron and Steel Manufacturing Point Source Category:

	tons/day
Cokemaking	3,950
Ironmaking	19,290
Steelmaking	25,115
Vacuum Degassing	5,922
Continuous Casting	22,467
Hot Forming	
Plate	2,797
Hot Strip	18,432
Acid Pickling	
Sulfuric	1,989
Hydrochloric	10,887
Cold Rolling	23,859

Alkaline Cleaning	6,373
Hot Coating	
Galvanizing	1,451

USS also operates electro-plating operations for chromium, tin and zinc plating, which are regulated by 40 CFR Part 433 - Metal Finishing Point Source Category. The production rates listed above represent the highest monthly production rate achieved over a recent five year period, prorated to a daily basis.

2. Existing Discharges

As described below, the USS Gary Works facility has a large number of process and cooling water outfalls discharging to the Grand Calumet River, Lake Michigan and Stockton Pond. These discharges are limited by a combination of 40 CFR Parts 420 and 433, ambient water quality standards adopted by the Indiana Department of Environmental Management, and limitations from the previous permit whichever are the more stringent.

Attachment I is a facility map showing the approximate locations of the active process and cooling water outfalls. Attachment II is a series of outfall schematic diagrams showing contributing sources and approximate discharge flow rates.

The outfall number, receiving water, flow and sources of water discharged are presented below for each outfall. The flow rates for Outfalls discharging to the Grand Calumet River were based upon the average flows determined for the period from January 1999 through December 2000. Flow rates to Lake Michigan were based upon the highest monthly average flow during January 1999 through December 2000. These are the time periods and flow rates that were used in the modeling and in determining water quality based effluent limitations and corresponding mass limitations for each outfall.

a. Outfall 001 - Grand Calumet River

This Outfall has been closed. It has been removed from the permit.

b. Outfall 003 - Grand Calumet River

This Outfall has been closed. Outfall 003 has been removed from the permit.

c. Outfall 004 - Grand Calumet River

US Steel has declared Outfall 004 as inactive and has been removed from the permit.

d. Outfall 005 - Grand Calumet River 61.07 MGD

The discharge from Outfall 005 is composed of booster house condenser cooling water, primary gas cooler heat exchangers 1-6 cooling water, miscellaneous coke plant cooling water, distillation area heat exchanger cooling water, ammonia still non-contact cooling water, No. 2 boiler house steam condensate, coke plant tank farm barometric condenser, steam condensate, battery service water freeze protection, primary gas cooler heat exchangers 7&8 cooling water, and storm water runoff. In addition, this outfall receives flows from Internal Outfall 502 (coke oven gas de-sulfurization unit non-contact cooling water) and Internal Outfall 501 (treated coke plant effluent - which includes both coke plant process water and remediation groundwater).

e. Outfall 007 - Grand Calumet River

This Outfall has been closed and will be removed from the permit.

f. Outfall 010 - Grand Calumet River 1.42 MGD

The discharge from Outfall 010 is composed of air compressor non-contact cooling water, miscellaneous coke plant non-contact cooling water, battery service water freeze protection, #2 battery roof drain, storm water runoff, and discharges from Internal Outfall 508 (blast furnace recycle treatment system blowdown).

US Steel has requested and the permit has provided for the re-direction of all flows currently being discharged through Outfall 010 to be combined with the discharge of Outfall 005. A second discharge limitation table for Outfall 005 was added to the permit that will become effective when this action occurs.

g. Outfall 015 - Grand Calumet River 1.65 MGD

The discharge from Outfall 015 is composed of No. 3 sinter plant non-contact cooling water, PCI east non-contact cooling water, No. 3 sinter plant compressor non-contact cooling water, storm water runoff, and steam condensate. In addition this outfall receives flow from Internal Outfall 607. Internal Outfall 607 consists of treated landfill leachate, vacuum truck, truck wash, and decant pad water.

US Steel has requested and the permit has provided for the re-direction of the discharge currently from Outfall 607 to the Coke Plant wastewater treatment system which then discharges through (Outfall 501). The permit allows for the discharge from 607 to the Grand Calumet River via Outfall 005 or Outfall 015.

h. Outfall 017 - Grand Calumet River 0.064 MGD

The discharge from Outfall 017 is composed of miscellaneous non-contact cooling water, steam condensate, freeze protection water, and storm water. In a January 22, 2007 letter to IDEM, US Steel requested that this be designated as a storm water only outfall. The freeze protection water and other non-process water have been looped to the Blast Furnace Recycle System. The permit has been modified to make this a storm water only outfall.

i. Outfall 018 - Grand Calumet River 49.85 MGD

The discharge from Outfall 018 is composed of PCI west cooling water, No. 4, 6, and 8 blast furnace shell non-contact cooling water, sinter plant non-contact cooling water, No. 1 electric power station non-contact cooling water, turbo blower boiler house cooling water and boiler blowdown, No. 4 electric power station non-contact cooling water, stock house miscellaneous steam condensate, miscellaneous air conditioner condensate, and some storm water. In addition, SOF-6 (No. 6 Sanitary Lift Station Emergency Overflow) discharges to Outfall 018 in emergency conditions only.

j. Outfall 019 - Grand Calumet River 51.75 MGD

The discharge from Outfall 019 is composed of No. 13 blast furnace shell non-contact cooling water, No. 2 Q-BOP shop miscellaneous non-contact cooling water, turbo-blower boiler house condenser non-contact cooling water, No. 4 boiler house steam condensate non-contact cooling water, No. 1 electric power station non-contact cooling water for No.1 blast furnace condenser, storm water runoff, central water treatment plant brine regenerant water, and No. 5 electric power cooling station condensate.

k. Outfall 020 - Grand Calumet River 64.38 MGD

The discharge from Outfall 020 is composed of No. 1 basic oxygen shop miscellaneous non-contact cooling water, No.1 continuous caster miscellaneous non-contact cooling water, steam condensate, and storm water runoff.

l. Outfall 021 - Grand Calumet River 0.6 MGD

The discharge from Outfall 021 is composed of air compressor non-contact cooling water, steam condensate, and storm water runoff.

m. Outfall 023 - Grand Calumet River 0.1 MGD

The discharge from Outfall 023 is composed of air conditioning condensate, steam condensate, and storm water runoff.

n. Outfall 026 - Grand Calumet River NA

Outfall 026 is currently listed as inactive by US Steel. If a discharge were to occur it could consist of the following: miscellaneous building air conditioning condensate, steam condensate, and storm water runoff DA#18.

o. Outfall 028/030 - Grand Calumet River 31.9 MGD (11.2 and 20.7)

Discharge from Outfalls 028/030 are lagoon outfall discharges and consist of the #2 continuous caster non-contact cooling water and other miscellaneous non-contact cooling waters, #1 BOP/Q-BOP cooling tower blowdown, storm water runoff, steam condensate, 160"/210" plate mill scale pit, and slab spray cooling, and Q-BOP vacuum degasser overflow. Discharge from internal outfall 603 discharges through Outfall 028/030. Internal Outfall 603 consists of #1 BOP, vacuum degasser, Q-BOP, #2 continuous caster A/B line, #2 continuous caster C line, #1 continuous caster line.

p. Outfall 032 - Grand Calumet River 0.3 MGD

The discharge from Outfall 032 is comprised of QA miscellaneous non-contact cooling water, miscellaneous bar mill freeze protection water, steam condensate, and storm water. In addition emergency overflows from the No. 3 sanitary lift station emergency overflow (SOF-3). As part of the US Steel passive dewatering discharge for the dredging of the Grand Calumet River (GCR), Outfall 001 from permit No. IN0061077 discharges to US Steel Outfall 032. Final sampling for both outfalls is completed prior to the commingling of these individual wastewaters.

q. Outfall 033 - Grand Calumet River 0.2 MGD

The discharge from Outfall 033 is comprised of miscellaneous sheet & tin mill non-contact cooling water, atmospheric gas plant non-contact cooling water, Buchanan Street sanitary lift emergency overflow (SOF-51), EJ&E Railroad, steam condensate, and storm water.

r. Outfall 034 - Grand Calumet River 28.5 MGD

The discharge from Outfall 034 is comprised of treated process water from three internal outfalls:

> Internal Outfall 604 consists of process wastewater from the No. 1 Tin-free Steel lines, East galvanizing lines, chrome reduction floor drains, spent chromic solutions from the Tinning and Galvanizing lines, No.1 Electrogalvanizing, Sheet Mills, 84" Hot Strip Mill, Pickling lines, and Tinning lines.

Internal Outfall 605 consists of discharges from the 84" Hot Strip Mill wastewater treatment plant.

Internal Outfall 606 consists of non-contact cooling water from the Sheet and Tin Mill, PVS Technology manufacturing, 5 stand cold reduction mill, North Sheet Mill Annealing, No. 6 Galvanizing, No. 8 Galvanizing, Waste Acid Recycling Facility, steam condensate, PVS Technology Manufacturing Condensate, and storm water. In addition, emergency overflow from the "N", "S", and "T" process water pumping stations discharge from this outfall.

s. Outfall 035 - Lake Michigan 176.3 MGD

The discharge from Outfall 035 is comprised of No. 13 Blast Furnace non-contact cooling water, Lakeside Energy (Co-Generation Plant) and No. 5 Power Station, steam condensate, and storm water runoff.

t. Outfall 036 - Lake Michigan NA

The discharge from Outfall 036 is comprised of 160"/210" Plate Mill non-contact cooling water, steam condensate, and storm water runoff. As part of the sale of the Plate Mill Assets to ISG, Outfall 036 has now been permitted separately by ISG as permit No. IN0062197 issued on September 19, 2005. Outfall 036 has been removed from this permit.

u. Outfall 037 - Lake Michigan 3.0 MGD

The discharge from Outfall 037 is comprised of North Sheet Mill annealing cooling water, 80" Temper Mill non-contact cooling water, steam condensate, No. 10 air compressor, and storm water runoff.

v. Outfall 039 - Lake Michigan 55.0 MGD

The discharge from Outfall 039 is comprised of 84" HotStrip Mill Reheat Furnace non-contact cooling water, 84" Hot Strip Mill Miscellaneous non-contact cooling water, 84" Hot Strip Mill fire water distribution system, Steam condensate, cold well pump room flood protection, 84" Hot Strip Mill Roughing Mill scale pit emergency overflow, and storm water runoff.

w. Outfall 040 - Stockton Pond 0.20 MGD

The discharge from Outfall 040 is comprised of No. 1 Electro-galvanize line non-contact cooling water, filter backwash, steam condensate, boiler blowdown, and some storm water runoff.

x. Outfall 041A & B - Lake Michigan 0.086 MGD

Since the permit renewal application was submitted in 1999, US Steel determined that this outfall was not inactive and discharges were in fact occurring from two separate discharge locations. These were re-designated as Outfall 041A & B. US Steel has indicated that discharges have been occurring from these two points since the 1940's. The discharge became visible on November 22, 2000 when the level of Lake Michigan dropped below the level where the discharge became apparent. During the time period before the lake level dropped, US Steel reported no flow for the outfall. That mistake was rectified after the discharge of water was observed. The estimated flow of the outfall is 0.043 MGD per transformer, resulting in a total flow of 0.086 MGD per day.

y. Outfalls BW-1 thru BW-5 Lake Michigan

The discharges from Outfalls BW-1 thru BW-5 are composed of intake screen backwashes from the five service water pumping stations operated by USS.

z. Storm Water Discharges

US Steel-Gary Works submitted EPA Application Form 2F - Application to discharge storm water discharges associated with Industrial Activity. The previous permit regulated 15 storm water discharge outfalls. Since that permit was issued three of these outfalls have been closed (001,003, and SW09), four of the outfalls do not discharge any flow and are considered inactive (004, SW03, SW04, and SW07), and eight are monitored semi-annually (017, SS1, SW01, SW02, SW06, SW08, SW10, and SW11). One additional Outfall SW-12 (EJ&J Railroad) has been added to the annual monitoring program. Storm water Outfall 134 discharges to the Mason Basin #5 and does not discharge to a water body. Gary Works currently has a Storm Water Pollution Prevention Plan and it has been updated as required. The last revision to this plan was April 4, 1997. US Steel's updated Storm Water Pollution Prevention (SWPPP) was submitted to IDEM to become part of the permit renewal application.

C. Development of Proposed Effluent Limitations and Special NPDES Permit Conditions

1. Clean Water Act Requirements

Section 402 of the Clean Water Act (CWA) establishes a National Pollutant Discharge Elimination System (NPDES) permit program. The NPDES permit program is designed to limit the discharge of pollutants into navigable waters of the United States through a combination of various requirements including technology-based and water quality-based effluent limitations. The CWA provides that the Administrator of U.S. EPA, or his designee, must concur with major permits issued by delegated state agencies. The NPDES permit program

for Indiana was delegated to the Indiana Department of Environmental Management by U.S. EPA.

Sections 301, 304, 306 and 307 of the CWA also provide that U.S. EPA must promulgate national effluent limitations guidelines and standards of performance for major industrial categories for three classes of pollutants: (1) conventional pollutants (e.g., Total Suspended Solids, Oil and Grease, Biochemical Oxygen Demand and pH); (2) toxic pollutants (e.g., toxic metals such as Chromium, Lead and Zinc; toxic organic pollutants such as Benzene, Benzo(a)pyrene, Naphthalene and Tetrachloroethylene); and (3) non-conventional pollutants (e.g., Ammonia-N, Fluoride and Phenols (4AAP)).

Six types of effluent limitations guidelines and standards must be promulgated for each major industrial category:

Abbreviation	Effluent Limitation Guideline or Standard
BPT	Best Practicable Control Technology Currently Available
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
NSPS	New Source Performance Standards
PSES	Pretreatment Standards for Existing Sources
PSNS	Pretreatment Standards for New Sources

The pretreatment standards are applicable to industrial facilities with wastewater discharges to publicly owned treatment works (POTWs) which generally are municipal wastewater treatment plants. The effluent limitations guidelines and new source performance standards are applicable to industrial facilities with direct discharges to navigable waters. Thus, for purposes of the proposed NPDES permit, only the first four types of effluent limitations guidelines and standards are applicable to the USS Gary Works. Section 301 of the CWA, as amended by the Water Quality Act of 1987, requires that BPT effluent limitations were to have been achieved by July 1, 1977. BAT effluent limitations for toxic pollutants, BAT effluent limitations for non-conventional pollutants, and BCT effluent limitations for conventional must be achieved within three years from date of promulgation but no later than March 31, 1989. Section 402(a)(1) of the CWA provides that in the absence of promulgated effluent limitations guidelines or standards, the Administrator, or his designee, may establish effluent limitations for specific dischargers on a case-by-case basis. U.S. EPA regulations provide that these limits may be established using "best professional judgment" (BPJ) taking into account proposed effluent limitations guidelines and standards and other relevant scientific, technical and economic information.

The effluent limitations guidelines and standards applicable to the USS Gary Works are found at 40 CFR Part 420 for cokemaking, sintering, ironmaking, steelmaking, vacuum degassing, continuous casting, hot forming, acid pickling, cold rolling, alkaline cleaning and hot coating operations; and, at 40 CFR Part 433

for the electro-plating operations. 40 CFR Part 420 was promulgated in May 1982, and amended in May 1984.

40 CFR Part 433 was promulgated in July 1983 and amended in 1986. The compliance date for achieving the BAT effluent limitations contained in 40 CFR Parts 420 and 433 was July 1, 1984. 40 CFR 420 was recently updated with the final revisions to this section signed April 30, 2002, and published in the Federal Register on October 17, 2002. The guidelines were further amended on August 10, 2005 to allow oil and grease trading.

2. Technology-Based Effluent Limitations

Attachment III presents the derivation of the applicable technology-based effluent limitations guidelines and standards for the USS Gary Works for each process wastewater outfall. For each of the basic steelmaking and steel finishing operations, the NPDES production rates developed by USS were used in combination with the BPT, BAT or BCT effluent limitations guidelines or NSPS from 40 CFR Part 420 and 433, as appropriate, to compute the allowable discharges of the regulated pollutants.

Following is a brief description of the application of the technology-based effluent limitations guidelines and standards by process operation:

a. Cokemaking

Outfalls 005 and 010, and Internal Monitoring Outfall 501

For the cokemaking process the characteristic pollutants of cokemaking and by-product recovery operations are the following: ammonia-N, total cyanide, and phenols (4AAP). These are the parameters that the federal effluent guidelines have limited in order to demonstrate compliance with treatment performance. Outfalls 002, 005, 007, and 010 contained discharges from process leaks into non-contact cooling waters and infiltration from contaminated groundwaters and were specifically addressed in the 1990 consent decree. US Steel was required to complete four specific process modifications and remedial actions; conduct an extensive rehabilitation of the sewer systems for Outfalls 002, 005, 007 and 010 to minimize discharges of pollutants from those outfalls; and, to document and continue to implement a wastewater management plan to ensure collection and disposal of process wastewaters. As part of wastewater management plan, Outfall 002 was closed and the wastewater flow diverted to Outfall 005. Outfall 007 has also been closed. Outfalls 002 and 007 have been removed from the permit.

US Steel and IDEM entered into an agreed order on April 3, 1996 relative to air pollution issues pertaining to US Steel's coke facility operations. In addition to the monetary penalty and significant reduction in the discharge of air pollutants to resolve violations of air rules, this agreed order contained additional

environmental controls that are being added above and beyond those that are required to meet minimum standards. These additional controls qualified as supplementary environmental projects or SEPs. U.S. Steel was allowed to offset part of its monetary penalty by implementing these SEPs. One such SEP required the use of clean water rather than process wastewater to quench hot coke. Prior to this, US Steel used untreated process wastewater to cool (or quench) the coke after it comes out of the coke ovens. During the quenching process, pollutants in the process wastewater are either volatized into the air or recirculated through the quench sumps. The SEP required US Steel to use clean water (water taken directly from Lake Michigan) to quench the coke.

US Steel has also installed a treatment system to treat the wastewater that had been used to quench the coke prior to its discharge to the Grand Calumet River through Outfall 005. This process water results from moisture in the coal, by-product recovery process water and coke oven gas condensates. U.S. Steel applied for and received a permit modification to allow the discharge of treated cokemaking and by-product recovery process wastewater (biological treatment) and non-contact cooling water from the coke oven gas desulfurization facility, which was another SEP. Internal Outfall 501 was designated to monitor discharges from the cokemaking and by-product recovery treatment system. Internal Outfall 502 was designated to monitor discharges from the Coke Oven Gas Desulfurization facility and related non-contact cooling water (A review of the data since Internal Outfall 502 was implemented indicates that the separate monitoring for ammonia at Internal Outfall 502 is no longer required). Descriptions are detailed below:

(1) INTERNAL OUTFALL 501-COKEMAKING AND BY-PRODUCT RECOVERY

Internal Outfall 501 consists of the Coke by-product recovery water which is the collection and reuse of various components of the coke oven gas and flushing liquor. Several types of coke related wastewater are recirculated through the by-products recovery systems. These by-products include coal tars, light crude oil, ammonia, sulfur compounds, naphthalene and phenols. Wastewater is generated from a number of sources within the coke plant. Moisture and volatile components of the coal are generated by the coking process, captured in a collection system and processed through the by-product recovery area. The wastewater treatment system for the cokemaking and by-product recovery wastewater includes oil/tar separation, ammonia stripping, biological treatment and solids settling.

Internal Outfall 501 was established as a point of compliance for the discharge of approximately 1.41 MGD of treated cokemaking and by-product recovery wastewater. The following Table is based upon production numbers provided by US Steel and the applicable new source performance standards that were applied when the permit was modified in

1998. Pursuant to the NPDES permit regulations at 40 CFR 122.29(b), US Steel is subject to limits calculated in the 1998 permit modification that were based upon the NSPS promulgated in 1982 for its cokemaking operations. Table 1 has been updated to the most recent production data provided by US Steel on April 19, 2007. This data reflects the shut down of the #3 Coke Battery. In addition to the parameters covered under the effluent limitation guidelines, US Steel is required to monitor for Free Cyanide at this outfall.

The technology-based effluent limitations for Internal Outfall 501 are in Table 1 below:

Table 1
Outfall 501
Technology-Based Effluent Limitations and Standards
40 CFR Part 420.14(a)
Effluent Limitations in lbs/day

Pollutant	New Source Performance Standards	
	30-Day Average (lbs/day)	Daily Maximum (lbs/day)
Total Suspended Solids	706	1,359
Oil & Grease	---------	50.4
Ammonia – N	126.4	429.0
Total Cyanide	27.7	50.4
Phenols (4AAP)	0.25	0.50
Benzene	------	0.25
Naphthalene	------	0.25
Benzo(a)pyrene	-----	0.25

(2) INTERNAL OUTFALL 502 COKE OVEN GAS DESULFURIZATION FACILITY NON-CONTACT COOLING WATER

Internal Outfall 502 consists of the noncontact cooling water discharge generated as a result of the Coke Gas Desulfurization Project SEP in the Air Agreed Order. This desulfurization facility removes the sulfur compounds from coke oven gas and converts them to a marketable sulfur product, resulting in a reduction of 80 percent of the sulfur dioxide emissions from the coke ovens. The discharge resulting from this project was part of the clean water coke quench permit modification of the previous permit.

The coke oven gas desulfurization facility involves a number of chemical reactions that require specific temperatures. Therefore, non-contact cooling water is needed for the heating or cooling of chemical process

equipment within the facility. The expected average flow rate through Internal Outfall 502 is approximately 5.23 MGD. The cooling water is supplied by the Gary Works Intake Pump Stations No. 3 & 4 which are located on the boat slip in Gary Harbor off of Lake Michigan. Chemicals are not added to the non-contact cooling water except to treat for zebra mussels at the Lake Michigan water intakes.

There are no specific federal effluent guidelines to cover this type of discharge but Internal Outfall 502 was established to identify potential cross contamination between the non-contact cooling water system and other process wastewaters. Original monitoring requirements were for flow, ammonia-N and pH.

Technology-based effluent limitations for blast furnace recycle treatment system blowdown are discussed in the next section. The proposed permit contains additional water quality-based effluent limitations for Outfalls 005 and 010.

US Steel has requested that this internal outfall be removed from the permit. A review of the data has not indicated a significant source of ammonia and ammonia is limited at the final Outfall 005. Internal Outfall 502 is no longer considered necessary and has been removed from the final permit.

b. Sinter Plant and Blast Furnaces
Outfalls 010, 015, 017, 018, 019 and 035

US Steel operates a combined treatment and recycle system for gas cleaning and gas cooling water from the blast furnaces. The No. 13 blast furnace has a separate process water recycle system. The sludge from that system is discharged to the combined system and make-up water is taken from the combined system. Gas cleaning water is no longer generated from the Sinter Plant because a dry air pollution control system has been installed for sinter plant air emissions. Blowdown from the blast furnace treatment and recycle system is discharged through Internal Outfall 508 and subsequently through Outfall 010.

Internal Outfall 508 - Blast Furnace Recycle System (BFRS)

USS operates a combined treatment and recycle system for gas cleaning water from the sinter plant and gas cleaning and gas cooling water from the blast furnaces. No. 13 blast furnace has a separate recycle system. The sludge from that system is discharged to the combined system and make-up water is taken from the combined system.

U.S. Steel received a permit modification to allow the Blast Furnace Recycle System (BFRS) wastewater to be discharged through Outfall 010, then regulated as Bubble Outfall 200, to utilize the ammonia effluent allocation for that outfall. Blast Furnace wastewater is subject to Federal Effluent Guidelines, 40 CFR 420.33 for ammonia, total cyanide, phenol (4AAP), lead, and zinc. These parameters are monitored as Internal Outfall 508. The permit modification moved the BFRS discharge to Outfall 010 to be covered under the previous Bubble Outfall 200 but did not increase the ammonia allocation within this segment. The lead and TSS limitations were reduced from the ELG allocation based upon the reasoning detailed in the previous permit. The revised limitations for lead are 2.23 lbs monthly average and 5.17 daily maximum and for TSS are 500 lbs/day monthly average and 750 lbs/day daily maximum. The Total Cyanide limitations of 3.18 lbs/day monthly average and 7.38 lbs/day daily maximum are carried over from the previous permit based upon the previous allocation for T. Cyanide that existed at the previous Outfall 200 (combination of values calculated at Outfall(s) 005 and 010). These reduced values replaced the ELG calculated values based upon the previous allocation assigned to Outfall 200 (combination of values calculated at Outfall(s) 005 and 010). US Steel has listed flows from this source as an intermittent amount. The Effluent Limitation Guideline values for this discharge are shown in Table 2 below. Reduced allocations from the previous permit are noted in **[Bold]** and have been carried over into this renewed permit.

Table 2
Outfall 508
Technology-Based Effluent Limitations and Standards
40 CFR Part 420.32 and 33
Effluent Limitations in (lbs/day)

Pollutant	30-Day Average (lbs/day)	Daily Maximum (lbs/day)
Total Suspended Solids	1,003 **[500]**	3,017 **[750]**
Ammonia – N	113.0	338.0
Total Cyanide	33.8 **[3.18]**	67.5 **[7.38]**
Phenols (4AAP)	1.13	2.25
Total Residual Chlorine (TRC)	NA	-----
Lead	3.4 **[2.23]**	10.1 **[5.17]**
Zinc	5.1	15.2

Technology based effluent limitations are not applicable to Outfalls 017, 018, 019 and 035 because process waters are not discharged from these outfalls. Outfall 015 contains non-contact cooling water, storm water, and the discharge from Internal Outfall 607 (treated landfill leachate, storm water, vacuum truck and truck washing wastewaters). There are no categorical effluent limitations guidelines for these wastewaters. Consequently, any effluent limitations at Outfall 015 would be based on best professional judgment or Water Quality Based Effluent Limits (WQBELs).

c. Steelmaking, Vacuum Degassing, Continuous Casting, and Hot Forming (160"/210" plate mill) Outfalls 019, 020, 028/030.

USS operates separate recycle systems for the No. 2 Q-BOP and No. 1 BOP gas cooling water systems. Gas cleaning water from both melt shops is treated in thickeners and partially recycled. Blowdowns from both gas cooling water systems are routed to the BOF thickeners.

Intercondenser cooling water for the vacuum de-gasser is treated and recycled at a high rate. The underflow from a clarifier is the only discharge from this system, and is routed to the backwash clarifier from the No. 2 continuous caster.

The No 2 continuous caster is equipped with separate closed cooling systems for mold and machine cooling waters, and a separate treatment system for spray water consisting of a scale pit, pressure filters, backwash clarifier, and cooling tower. The underflow from the backwash clarifier is the only discharge from this system, and is routed to the BOF thickeners. The water systems for the No. 3 continuous caster are similar to those for the No. 2 continuous caster. Spray water for the No. 1 continuous caster is treated on a once-through basis in a scale pit.

Partially treated wastewaters from all of the above operations; wastewaters from the plate and slab mills; a minor amount of non-contact cooling water; and, direct contact slab spray water are collected and pumped to the lagoon tributary to Outfall 030 for final treatment. The lagoon tributary to Outfall 028/030 is the principal treatment device.

BPT and BAT effluent limitations guidelines are applicable to the No. 1 BOP, No. 2 Q-BOP, and the No. 1 continuous caster. BPT and BCT effluent limitations guidelines are applicable to the 160"/210"plate mill. NSPS are applicable to the vacuum degasser and the Nos. 2 and 3 continuous casters.

The NPDES permit limits toxic metals for steelmaking, vacuum degassing, and continuous casting operations at internal Outfall 603. The permit sets effluent limitations based upon federal effluent limitation guidelines for Total Suspended Solids (TSS) and Oil & Grease at the point of discharge (Outfall 028/030). The calculated limits are presented below in Table 3.

Since the time that this permit was public noticed US Steel has transferred the assets pertaining to the 160"/210"plate mill to International Steel Group (ISG). US Steel will continue to treat all process wastewaters from this mill.

In addition, the noncontact cooling waters associated with this facility discharge to Lake Michigan through Outfall 036. ISG received an individual permit issued September 19, 2005 for Outfall 036 to Lake Michigan. Since this is no longer a United State Steel regulated outfall, Outfall 036 has been removed from this permit.

Table 3
Outfall 603
Technology-Based Effluent Limitations and Standards
Effluent Limitations in lbs/day

Pollutant	30-Day Average (lbs/day)	Daily Maximum (lbs/day)
Total Suspended Solids	2,038	5,933
Oil & Grease	123.0	687.1
Lead	8.7	26.1
Zinc	13.1	39.1

Outfalls 019 and 020 consists of non-contact and non-process type waters and are not covered by any effluent guideline.

d. Steel Finishing and Electro-plating Operations, Hot Forming (84" hot strip mill) Outfall 034.

USS operates a centralized wastewater treatment facility for steel finishing and electro-plating wastewaters consisting of oil emulsion breaking; dissolved air flotation, separate precipitation of zinc bearing wastewaters from the electro-galvanizing line, pre-treatment of hexavalent chromium from the chromium plating facilities, and combined sedimentation of all wastewaters for suspended solids and toxic metals removal. The discharge from this facility is limited and monitored at Internal Outfall 604. The combination of BPT and BAT effluent limitations from 40 CFR Parts 420 and 433 are summarized below. As detailed in Attachment IV, the effluent limitations include BPJ effluent limitations for Total Suspended Solids and Oil and Grease for oily wastewaters from the oil cellars at the 84" Hot Strip Mill. The oily wastewaters from the 84" hot strip mill oil cellars are more effectively co-treated with oily wastewaters from finishing operations than in the hot strip mill filtration and recycle system. Effluent limitations except for Total Suspended Solids developed based upon discharges through Outfall 604 were limited at Outfall 034 (see Table 4). It is proposed to move the monitoring except for Oil and Grease back up to Internal Outfall 604 for monitoring and

compliance purposes. Effluent limitations for Oil and Grease remain at Outfall 034 (see Table 5).

Effluent limitations for cadmium, nickel, and silver for Outfall 604 are derived from Part 433 (Metal Finishing). Because these metals are not present at significant levels in raw materials used by US Steel, once per quarter monitoring will be proposed. The BPT/BCT effluent limitations for the 84" hot strip mill are summarized in Table 6 below:

Pollutant	30-day Average (lbs/day)	Daily Maximum (lbs/day)
TSS	725	2,125
Oil & Grease	-----	1,450

Table 4
Internal Outfall 604
Technology-Based Effluent Limitations applied at Outfall 604
Effluent Limitations (lbs/day)

Pollutant	30-Day Average (lbs/day)	Daily Maximum (lbs/day)
Total Suspended Solids	3,239	7,166
Total Cyanide	18.4	34.0
Cadmium	7.4	19.6
Chromium	48.5	78.5
Hexavalent Chromium	0.16	0.46
Copper	58.7	95.8
Nickel	67.5	112.9
Silver	6.8	12.2
Lead	20.2	43.5
Zinc	50.9	100.9
Naphthalene	------	1.7
TCE	------	2.50
TTO	------	60.4

Table 5
Outfall 034
Technology-Based Effluent Limitations
Effluent Limitations in lbs/day
Oil and Grease ELG derived from Outfall 604 and 605

Pollutant	30-Day Average (lbs/day)	Daily Maximum (lbs/day)
Oil & Grease	1,515 **[1,850]**	5,171 **[4,000]**

The previous NPDES permit contained more stringent effluent limitations for the 84" hot strip mill at internal Outfall 605 that were carried over from the then previous permit. These same limitations will be carried forward to the current permit based upon antibacksliding regulation at 40 CFR 122.44(l). These limitations are shown below and are also shown in **[Bold]** next to the calculated ELG in Table 6 below:

Reduced allocations for Oil & Grease were based upon Best Professional Judgement (BPJ) and are carried into this permit from the last permit.

Table 6
Technology-Based Effluent Limitations and Standards
Internal Outfall 605
Effluent Limitations in lbs/day

Pollutant	30-Day Average (lbs/day)	Daily Maximum (lbs/day)
Total Suspended Solids	5,898.0 **[725]**	15,741.0 **[2,175]**
Oil & Grease	-------	3,944.0 **[1,450]**

e. Proposed Alternative Effluent Limitation for Oil & Grease - for Outfalls 030 (028/030) and 034.

The effluent guidelines for the Iron and Steel Category 40 CFR 420 were revised and became effective in October 2002. One of the revisions was the removal of the allowance of the Oil and Grease Bubble. This concept allowed for intra-plant transfers of mass pollutant discharges from outfalls where performance is better than required by 40 CFR 420 to outfalls where additional treatment would otherwise be required to comply with Part 420. In order to have made such trades, permittees had to ensure that the overall mass of pollutants discharged will be less than would occur with no trades. For Oil and Grease this was a minimum

net reduction of 15% of the amount traded to the other outfall. EPA removed the bubble from the ELG to keep the exchange of different kinds of Oil and Grease from occurring. US Steel appealed this change in the guideline, and as a result of this appeal (70 FR 46495) the Oil and Grease bubble can again be used in this permit. IDEM has re-established the previously approved bubble with a requested modification by US Steel to reallocate 350 lbs from 034 to 030. Using the same approach as in the previous permit the Oil and Grease bubble has been calculated as follows:

Outfall 605

Proposed Technology Limits	Ave. lbs/day	Maximum lbs/day
	1577	3944
Reduction	-1387	-2094
Limits after Reduction	190	1850
Final Permit Limits (BPJ)	**--------**	**1450**

Outfall 034

Technology Limits		
Outfall 604	1515	3722
Outfall 605 (modified)	190	1450
Total	1705	5172
Original Limits (BPJ)	**1500**	**4000**
Addition from 030	**350**	**----**
New Totals (BPJ)	**1850**	**4000**

Outfall 030 (028/030)

Technology Limits		
Outfall 603	123	687
Transfer from Outfall 605	1387	2094
Proposed Reduction	-208	-314
USS Proposed Reduction	-350	-----
Resultant Final Limits	**952**	**2467**

Although the limits for Oil and Grease at Outfall 034 are higher than the limits from the previous permit the overall quantities of Oil and Grease at the affected outfalls are within the total mass quantities as previously approved.

3. Water Quality Based Effluent Limitations

Water quality based effluent limitations were developed using 327 IAC 5-2-11.4 and reasonable potential determinations using 327 IAC 5-2-11.5. Effluent limits developed for benzo(a)pyrene considered additivity for benzo(a)pyrene and benzene per 327 IAC 5-2-11.4. Water quality based effluent limits are shown for parameters of concern in the reasonable potential to exceed in Tables 1-14 in Attachment IV. Reasonable potential for whole effluent (WET) is shown in Table 15 in Attachment IV. In addition, requirements for measurement of flow exist for each Outfall. Limitations for pH at the final outfalls are water quality based and come from 327 IAC 2-1.5-8(c)(2). Total Residual Chlorine if not listed in the representative reasonable potential Tables are carried over from the previous permit. US Steel chlorinates the intake water used at this facility for zebra mussel control, so TRC limitations are being required at all outfalls that discharge non-contact cooling waters.

4. Proposed Effluent Limitations by Outfall

Limits are derived by a comparison of the limits from the previous permit, the calculated federal effluent limitation guideline (ELGs), and the water quality based effluent limitations of which the most stringent is placed in the permit.

Outfalls 005 and 010 (formerly regulated as Bubble Outfall 200)

Water Quality Based Effluent Limitations are being applied at the individual Outfalls 005 and 010 in this renewed permit. If limits at 200 are more stringent than the current water quality based effluent limits, then the limits were allocated to the two separate outfalls (ammonia for example). The combination (bubble) Outfall 200 will no longer be used. During the response to Discovery review in the US Steel Selenium metal translator appeal, a review of US Steel's DMR's was conducted. During this review it was noticed on some DMR's that all of the Selenium data was below the Limit of Quantitation at Outfalls 005 and 010. Selenium would then be reported as a value of zero at Outfall 200. Outfall 200 was the mathematical combination of values for the individual values at the respective outfalls 005 and 010. While the monthly average calculation based on the rules in the GLI may allow a zero to be reported, the daily values and the highest monthly value should have been something above zero. In light of this it was determined that the values reported at the bubble may not be a true indication of what was being discharged into the Grand Calumet River at the individual outfalls. A decision was made to apply the effluent limitations at the respective individual outfalls.

In the previous permit, Outfall 200 had limits on the following parameters: Ammonia (as N), Free Cyanide, Phenols (4AAP), Fluoride, Selenium, Benzene, and Benzo(a)pyrene.

The following parameters showed reasonable potential based upon analysis required in 327 IAC 5-2-11.5: Mercury (005 and 010), Selenium (005), Benzo(a)pyrene (005 and 010), Total Residual Chlorine (005 and 010), and Free Cyanide (005).

United States Steel made an official request on January 22, 2007 to modify their application and have the proposed permit modified to allow the discharge flows currently discharged through Outfall 010 to be redirected and included in Outfall 005. An additional discharge limitations table (Part I.A.2. of the permit) was added to accommodate this request. Requirements for Outfall 010 (Part I.A.3. of the permit) apply until the flows are redirected to Outfall 005.

Fluoride

It is proposed to drop fluoride limits from the effluent limitations. Fluoride was added as a parameter of concern during the Coke Plant Modification, US Steel submitted additional toxicity information as part of their compliance schedule that was used in developing a revised Tier II value for fluoride. Based upon this updated Tier II value, US Steel no longer shows reasonable potential to exceed the water quality standards for Fluoride at Outfalls 005 and 010. However, fluoride is a component of the US Steel discharge from Outfall 005 and continued monitoring on a 3 times per month basis will be required. The requirement for monitoring Fluoride at Outfall 010 has been removed from this renewed permit.

Benzene

Based upon a limited number of data values taken during the application for the Coke Plant Modification, benzene showed reasonable potential in 1997. Based upon the application that included values from a data set of almost 400 data points, benzene no longer shows reasonable potential to exceed water quality standards and the limits are no longer required. Since the coke plant is a major source of benzene and the use of the groundwater will potentially add significant quantities of Benzene to the system, the monitoring of Benzene at Outfall 005 at 3 times per month will continue. Since the effluent limitations for benzo(a)pyrene is based upon the additivity rules and benzene is the other parameter in this derivation the monitoring of benzene is being added back to Outfall 010 at 3 X Monthly in the final permit.

Ammonia

Ammonia is regulated in the current permit. Based on the current treated effluent data there is not a reasonable to exceed when compared to the water quality based effluent limits. However, ammonia is a component of the discharge through Outfall 005 and is currently treated and removed in the Coke plant wastewater treatment system and through Outfall 010 from Internal Outfall 508, Blast Furnace Recycle System. The effluent limitations established in the previous permit and allocated as the sum of Outfalls 005 and 010 (200) will be carried over to the current permit and have been re-allocated between the Outfalls 005 and 010 respectively. The alternative to this approach would be to place the current, more stringent, water quality based effluent limits at these outfalls. Since US Steel has been providing treatment that maintains the concentration of ammonia even below

the current more stringent WQBELs, it was determined appropriate to only require the limits from the previous permit. These limits (Outfall 200) were split between Outfall(s) 005 and 010. The ammonia limits at Outfall 005 in Table I.A.2. of the permit are equivalent to the previous permits bubble 200 limits for ammonia.

Mercury

The discharge from Outfalls 005 and 010 exhibit a reasonable potential to exceed water quality based effluent limitations for Mercury. Limitations for Mercury will be placed in the permit and a five year compliance schedule is included in the permit to meet the effluent limitations for Mercury.

Selenium

Selenium was added to the permit at the time of the Coke Plant Modification issued in February 1998. It showed reasonable potential to exceed water quality based effluent limits. Selenium was under a compliance schedule with final effluent limits to take effect by April 1, 2003. US Steel submitted a metal translator study on April 19, 2002. A review of the study was completed and the results of the review were sent to US Steel in a letter dated August 26, 2002. US Steel may request the use of an alternate translator by using site-specific data but must conduct a site-specific study to identify the ratio of the dissolved fraction to the total recoverable fraction for a metal in the receiving waterbody outside the mixing zone. US Steel submitted the metal translator study for selenium which was reviewed by IDEM and a letter was sent to US Steel on February 16, 2006 with a final determination. Based upon the results of the study, a modification to the final selenium limit will not be required.

Phenols (4AAP)

BAT limits for Phenols (4AAP) were included in the previous permit. The calculated BAT limits at Outfalls 501 and 508, which are the main source of Phenols at these Outfalls will be limited at these outfalls and not at the respective final outfalls. No limitations or monitoring requirements for Phenols (4AAP) are proposed for either Outfall 005 or 010.

Total Residual Chlorine

US Steel uses chlorine for zebra mussel control and is limited on the permitted outfalls that include non-contact cooling waters. Outfalls 005 and 010 will be limited for Total Residual Chlorine (TRC).

Free Cyanide

Water Quality Based Effluent Limits for free cyanide continue for Outfalls 005 and 010. A reasonable potential analysis was done per 327 IAC 5-2-11.5 and free cyanide has the reasonable potential to exceed the water quality based effluents for this segment. These limits are based upon the exclusion of the site specific criterion calculated in the February 1998 modification.

In the permit renewal application submitted on March 9, 1999, United States Steel requested continued application of the site-specific criteria for cyanide as approved by IDEM in the February 25, 1998 modification to the permit.

IDEM previously granted US Steel's request, pursuant to327 IAC 2-1.5-16(a)(1)(B)(ii), for site-specific cyanide criteria. This provision allows aquatic life criteria to be modified on a site-specific basis when the sensitivity of the aquatic organisms species that occur at the site differs from the species actually tested in developing the criteria.

"Occur at the site" is defined at 327 IAC 2-1.5-2(60) as follows:

(60) "Occur at the site" includes the species, genera, families, orders, classes, and phyla that:

(A) are usually present at the site;

(B) are present at the site only seasonally due to migration;

(C) are present intermittently because they periodically return to or extend their ranges into the site;

(D) were present at the site in the past, are not currently present at the site due to degraded conditions, and are expected to return to the site when conditions improve; or

(E) are present in nearby bodies of water, are not currently present at the site due to degraded conditions, and are expected to be present at the site when conditions improve.

The taxa that occur at the site cannot be determined merely by sampling downstream and upstream of the site at one (1) point in time. The term does not include taxa that were once present at the site but cannot exist at the site now due to permanent physical alteration of the habitat at the site, for example, alterations resulting from dams.

Salmonids were one of the species included in the database used to calculate the cyanide criteria set forth in 327 IAC 2-1.5-8(b)(3). When IDEM granted US Steel's request for

site-specific cyanide criteria, IDEM did not have conclusive data documenting the presence of salmonids in the upper reach of the East Branch of the Grand Cal River. Therefore, IDEM approved the site-specific criteria that were calculated using the recalculation procedure, resulting in the removal of salmonids from the database. This in turn resulted in less stringent acute and chronic criteria than provided for in 327 IAC 2-1.5-8(b)(3).

Salmonids have recently been found in the East Branch of the Grand Calumet River, including the stretch in which the site-specific cyanide criteria apply. More specifically, a study conducted by the US Fish & Wildlife Service between September and November of 1999 documented the presence of 465 chinook salmon and three rainbow trout. US Steel itself, in its report entitled "Derivation of Baseline Bioaccumulation Factors from Grand Calumet River Field Measured BAFs for Benzo(a)pyrene," documented the presence of chinook salmon at the Virginia Street and Tennessee Street bridges. Additionally, IDEM documented the presence of approximately 100 chinook salmon when it investigated a fish kill between Outfall 005 and the Tennessee Bridge in the East Branch in October of 2001.

Because the presence of salmonids in the East Branch has recently been verified, IDEM has developed water quality based effluent limits for the permit renewal utilizing the criteria with salmonids included in the database.

US Steel in their comments on the draft of this permit included additional data and a request to include only adult salmonid data in the database for the re-calculation of Free Cyanide. Based upon the review by IDEM the site-specific criteria will be developed using the Recalculation Procedure taking into consideration the seasonal presence of salmonids in the Grand Calumet River. Sampling by IDEM and USFWS has shown that adult Steelhead Trout and Chinook Salmon are present in the Grand Calumet River only during the Autumn and possibly Winter Months. The site-specific cyanide criteria will therefore have a seasonal component. "Salmonids absent' criteria will be applied during the months when salmonids are not expected to be in the US Steel portion of the Grand Calumet River near Outfalls 005 and 010, and "adult salmonids present" criteria will be applied when salmonids are expected to be present in the US Steel portion of the Grand Calumet River near Outfalls 005 and 010. The "adult salmonids present" criteria will be developed using only adult salmonid data since salmon do not breed in the Grand Calumet River and thus only adults will be found there. Attached to this Fact Sheet as Attachment V are the re-calculations for salmonids absent and Adult salmonid present. Because of the Alaska rule the "adult salmonid present" cannot be incorporated into the US Steel permit until it has been formally approved by US EPA and the criteria as been adopted into Indiana Rule. Until then the criteria developed with all salmonids present will be utilized and US Steel will have five year schedule of compliance. The permit can be reopened once the "adult salmonid present" in the development of the criterion has been approved. However, IDEM can incorporate the seasonal concept into this permit and include interim and final effluent limits based upon salmonids present for only that season. The site-specific criterion developed for the last permit for salmonids absent is carried over and included in this permit for the same segments near Outfalls 005 and 010.

As a result of changes to the criteria and the monitoring frequency there is no longer a reasonable potential for free cyanide at Outfall 010. The outfall will now be monitored for free cyanide at a 2 X monthly basis.

A reopener has been placed into this permit allowing for the permit to be modified including the limitations for adult only salmonids once approved. The season which includes salmonids absent is April 1 through September 30 and the season whereby salmonids are considered present is from October 1 through March 31. If US Steel wishes to conduct appropriate studies to determine some alternate season, then US Steel should contact IDEM to determine the appropriate procedures for the development of the studies necessary to determine an alternate season.

Benzo(a)pyrene

IDEM developed Tier II benzo(a)pyrene (BaP) human health values for the Great Lakes System in August 1997 pursuant to 327 IAC 2-1.5-14. The human health values were developed by taking into account several factors, including the bioaccumulation factor (BAF) for BaP. Indiana rules allow BAFs to be calculated using four different methods, depending on the type of data available. Due to the limited availability of bioaccumulation data for BaP, IDEM calculated the BAFs for BaP using only the fat solubility (Kow) of BaP as required by 327 IAC 2-1.5-13(c). As part of 1998 Coke Plant modification, US Steel was given a five year compliance schedule to meet the final effluent limitations. That compliance schedule allowed US Steel to submit studies that could update the Tier I value used to calculate the final effluent limitation.

In March 2000, US Steel submitted proposed field measured BAFs for benzo(a)pyrene (BaP) to replace the BAFs calculated by IDEM (which would allow IDEM to calculate Tier I BaP human health criteria). The field study submitted by US Steel provided fish tissue and water concentrations of BaP collected from the East Branch of the Grand Calumet River where the US Steel facility is located. IDEM accepted most of the data submitted by US Steel for use in developing new BaP BAFs. Based on the data submitted to IDEM and the BAF methodologies in 327 IAC 2-1.5-13, IDEM re-calculated the BaP human health BAFs and utilized these BAFs to develop Tier I human health criteria. Limits were recalculated and included in this permit. US Steel has been given a five (5) schedule of compliance to meet the final limits for benzo(a)pyrene.

The water quality based effluent limits for benzo(a)pyrene were based upon the additivity requirements as specified in 327 IAC 5-2-11.4.

Monitoring Requirements

Monitoring requirements will be retained for Lead (010), Zinc (010), Chlorides (005 and 010), Sulfates (005 and 010), and Fluoride (005). Although these did not show reasonable potential they are still parameters of concern for this type of discharge and continued monitoring has been required.

Outfall 005 (without flows from 010)

DISCHARGE LIMITATIONS
Outfall 005

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	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	Report	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs.
Selenium	2.1	4.2	lbs/day	4.1	8.2	ug/l	1 X Weekly	24-Hr. Comp.
Benzene	Report	Report	lbs/day	Report	Report	ug/l	3 X Monthly	3 Grabs/24-Hrs
Benzo-a-pyrene								
Interim	Report	Report	lbs/day	Report	1.0	ug/l	2 X Weekly	24-Hr. Comp.
Final	0.046	0.11	lbs/day	0.091	0.22	ug/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)								
Summer	217.0	432.0	lbs/day	720	1,700	ug/l	1 X Weekly	24-Hr. Comp.
Winter	437.0	962.0	lbs/day	1,200	2,800	ug/l	1 X Weekly	24-Hr. Comp.
Free Cyanide								
Season 1	3.9	9.2	lbs/day	7.6	18.0	ug/l	2 X Weekly	3 Grabs/24 Hrs
Season 2								
Interim	3.9	9.2	lbs/day	7.6	18.0	ug/l	2 X Weekly	3 Grabs/24 Hrs
Final	3.1	6.6	lbs/day	6.0	13.0	ug/l	2 X Weekly	3 Grabs/24 Hrs
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.0007	0.002	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Total Residual Chlorine	4.1	9.2	lbs/day	8	18	ug/l	Daily	Grab
Fluoride	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Chloride	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Sulfate	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Whole Effluent Toxicity Testing (WETT)			See Part I.L., Biomonitoring Requirements					
Temperature								
Interim	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Final	----------	----------	----------	----------	Report	°F	Daily	Continuous
Temperature Exceedance Time		Report	Total Hours		----------	-------	Daily	
Temperature Exceedance Time 12 Month Total		----------	Total Hours		------	-----	Monthly Report	12 Mo. Total
			Minimum Daily	Maximum Daily				
pH			6.0	9.0		s.u.	3 X Weekly	Grab

US Steel on January 22, 2007 requested that the permit be set up for the eventual redirection of the flow from Outfall 010 to 005. An additional discharge limitations table was created in the permit as Part I.2. that updates Outfall 005 to include the current discharge of 010.

Outfall 005 (with flows from 010)

DISCHARGE LIMITATIONS
Outfall 005

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	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	Report	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs.
Selenium	2.14	4.3	lbs/day	4.1	8.2	ug/l	1 X Weekly	24-Hr. Comp.
Benzene	Report	Report	lbs/day	Report	Report	ug/l	3 X Monthly	3 Grabs/24-Hrs
Benzo-a-pyrene								

Interim	Report	Report	lbs/day	Report	1.0	ug/l	2 X Weekly	24-Hr. Comp.
Final	0.047	0.11	lbs/day	0.091	0.22	ug/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)								
Summer	330.0	770.0	lbs/day	720	1,700	ug/l	1 X Weekly	24-Hr. Comp.
Winter	550.0	1,300.0	lbs/day	1,200	2,800	ug/l	1 X Weekly	24-Hr. Comp.
Free Cyanide								
Season 1	4.0	9.4	lbs/day	7.6	18.0	ug/l	2 X Weekly	3 Grabs/24 Hrs
Season 2								
Interim	4.0	9.4	lbs/day	7.6	18.0	ug/l	2 X Weekly	3 Grabs/24 Hrs
Final	3.1	6.8	lbs/day	6.0	13.0	ug/l	2 X Weekly	3 Grabs/24 Hrs
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.0007	0.002	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Total Residual Chlorine	4.2	9.4	lbs/day	8	18	ug/l	Daily	Grab
Fluoride	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Chloride	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Sulfate	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Whole Effluent Toxicity Testing (WETT)			See Part I.L., Biomonitoring Requirements					
Temperature								
Interim	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Final	----------	----------	----------	----------	Report	°F	Daily	Continuous
Temperature Exceedance Time		Report	Total Hours		----------	-------	Daily	
Temperature Exceedance Time 12 Month Total		----------	Total Hours		------	-----	Monthly Report	12 Mo. Total
			Minimum Daily	Maximum Daily				
pH			6.0	9.0		s.u.	3 X Weekly	Grab

Internal Outfalls 501 & 502

Internal Outfall 501

When Outfall 501 was set up for discharges from the Coke Plant (Outfall 501), effluent limitations from the federal effluent guideline were based upon New Source Performance Standards (NSPS) and are to be in effect for this discharge.

DISCHARGE LIMITATIONS
Internal Outfall 501

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
TSS	706	1,359	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	------	50.4	lbs/day	Report	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs.
Selenium	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Benzene	Report	0.25	lbs/day	Report	Report	ug/l	3 X Monthly	3 Grabs/24-Hrs
Benzo-a-pyrene	Report	0.25	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Naphthalene	-------	0.25	lbs/day	-------	Report	ug/l	2 X Weekly	24-Hr. Comp.
Phenols (4AAP)	0.25	0.50	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)	126.4	429.0	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Cyanide								
Total	27.7	50.4	lbs/day	Report	Report	ug/l	2 X Weekly	3 Grabs/24 Hrs
Free	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	3 Grabs/24 Hrs
				Minimum Daily	Maximum Daily			
pH				Report	Report	s.u.	1 X Weekly	Grab

Internal Outfall 502 has been removed from the permit.

Outfall 010

DISCHARGE LIMITATIONS
Outfall 010

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	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	-------	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs.
Total Residual Chlorine	0.1	0.2	lbs/day	8	18	ug/l	Daily	Grab
Benzo-a-pyrene								
Interim	Report	Report	lbs/day	Report	1.0	ug/l	2 X Weekly	24-Hr. Comp.
Final	0.001	0.003	lbs/day	0.095	0.23	ug/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)								
Summer	113.0	338.0	lbs/day	720	1,700	ug/l	2 X Weekly	24-Hr. Comp.
Winter	113.0	338.0	lbs/day	1,200	2,800	ug/l	2 X Weekly	24-Hr. Comp.
Benzene	Report	Report	lbs/day	Report	Report	ug/l	3 X Monthly	3 Grabs/24-Hrs
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.00002	0.00004	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Chloride	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Sulfate	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	24-Hr. Comp.
Free Cyanide [3]	Report	Report	lbs/day	Report	Report	ug/l	2 X Monthly	See Part I.Q.
Lead	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Zinc	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Temperature	--------	---------	---------	--------	Report	°F	1 X Weekly	6 Grabs/24-Hrs.
			Minimum Daily	Maximum Daily				
pH			6.0	9.0		s.u.	3 X Weekly	Grab

Internal Outfall 508

When the previous permit was modified to include the blast furnace recycle system discharge to be relocated to be included in the Outfall 010 discharge, the federal effluent guideline allocations were modified based upon existing permit effluent limitations for Total Suspended Solids (TSS), Total Cyanide and zinc. Effluent limitations for lead and zinc were the more stringent water quality effluent limitations allocated to Outfall 400 in the previous permit. The reduced limitations for TSS, T. Cyanide, and Lead are from a determination that was made in the previous permit. Please see the August 24, 1999 permit modification for the basis of this determination. This determination is still applicable to this renewed permit and those limits have been carried into this renewal.

DISCHARGE LIMITATIONS
Internal Outfall 508

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	-	-	-	Daily	Continuous
TSS	500	750	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Ammonia (as N)	113.0	338.0	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Total Cyanide	3.18	7.38	lbs/day	Report	Report	mg/l	2 X Weekly	3 Grabs/24 Hrs
Phenols (4AAP)	1.13	2.25	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Lead	2.23	5.17	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc	5.1	15.2	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
				Minimum Daily	Maximum Daily			
pH				Report	Report	s.u.	1 X Weekly	Grab

Individual Monitoring of Outfalls 015, 607, and 017

Discharge limitations and monitoring requirements are required separately for Outfalls 015, 017 and 607. Water Quality Bubble (Combined 015 and 017) Outfall 400 has been separated into limitations at the respective outfalls. Outfall 015 includes some non-contact cooling water that requires temperature monitoring. In addition, Internal Outfall 607 (SWD-1), treated landfill leachate and associated wastewaters, are discharged through Outfall 015. In a letter dated January 22, 2007 that the discharge from Outfall 017 is storm water only. The appropriate changes have been made to the permit including monitoring frequencies.

Tables 3 & 4 in Attachment V (Reasonable Potential Tables) shows the reasonable potential to exceed current water quality standards analysis as required in 327 IAC 5-2-11.5. Mercury and Total Residual Chlorine have the reasonable potential to exceed water quality standards and require water quality based effluent limitations be placed in the permit. Mass limitations for ammonia, Total Cyanide, and Phenols (4AAP) were in the previous permit. These parameters were placed in the permit to determine if cross contamination from process wastewater is occurring. Continued monitoring for ammonia is proposed. Instead of monitoring for Total Cyanide it is proposed to require monitoring of Free Cyanide. Increased levels of ammonia or Free Cyanide should be investigated to determine the source and those sources will be eliminated.

The monitoring requirements and effluent limitations for T. Cyanide, Lead, Zinc, and Phenols (4AAP) come from the BAT requirements related to the discharge of the blowdown from the Blast Furnace Recycle System originally through Outfall 017. Through a previous permit modification, the blast furnace recycle system discharge was relocated to Outfall 010. Since the source of the requirement for the original mass limitations for Total Cyanide, Lead, Zinc, and Phenols (4AAP) has been relocated from Outfall 017 to Outfall 010, and no reasonable potential exists, mass limitations for these parameters are removed from Outfalls 015 & 017, respectively. However, concentrations are at levels sufficient to require continued monitoring for lead and zinc at Outfalls 015 &

017 and is being retained in the permit at 1X Weekly. Free Cyanide and ammonia will be monitored as stated above.

Individual discharge limitations requirements for Outfalls 015, 607, and 017 are detailed below:

Outfall 015

DISCHARGE LIMITATIONS
Outfall 015

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	-	-	-	Daily	Continuous
Total Suspended Solids	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Weekly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Free Cyanide	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	3 Grabs/24-Hrs.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Lead	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	24-Hr. Comp.
Zinc	Report	Report	lbs/day	Report	Report	ug/l	1 X Weekly	24-Hr. Comp.
Temperature	--------	--------	--------	--------	Report	°F	1 X Weekly	6 Grabs/24-Hrs.
Total Residual Chlorine	0.11	0.25 [6]	lbs/day	8	18	ug/l	Daily	Grab
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.00002	0.00004	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Weekly	Grab

Outfall 607 is the Internal Outfall for the SWD-1 Landfill contributing to Outfall 015

Internal Outfall 607: Through a previous permit modification in 1996, Internal Outfall 607 was added to monitor the discharge from the Solid Waste Disposal 1 (SWD-1) leachate which ultimately discharges through Outfall 015. A new landfill was constructed on-site and the following wastewater is currently generated: decant pad water, truck wash water, Solid Waste Disposal 1 leachate, and vacuum truck free liquids.

US Steel has requested that this discharge (flow from 607) be allowed to discharge to the Coke Plant Treatment Plant for treatment and discharge through Internal Outfall 501. The appropriate modifications to the permit have been made.

There are no changes to the limitations or monitoring requirements for Outfall 607 from the previous permit modified in August 1999. Discharge Limitations for Internal Outfall 607 are as follows and continue to be in effect until the waters currently discharging through Internal Outfall 607 are re-directed to the Coke Plant Wastewater Treatment Plant System at which time separate monitoring requirements for Internal Outfall 607 will no longer be required:

DISCHARGE LIMITATIONS
Outfall 607

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	-	-	-	Daily	Continuous
Total Suspended Solids	Report	Report	lbs/day	30	60	mg/l	1 X Weekly	24-Hr. Comp.
Oil & Grease	------	------	------	10.0	15.0	mg/l	1 X Weekly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
$CBOD_5$	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Free Cyanide [1]	Report	Report	lbs/day	Report	Report	ug/l	1 X Monthly	3 Grabs/24-Hrs
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead [4]	Report	Report	lbs/day	Report	Report	ug/l	1 X Monthly	24-Hr. Comp.
Zinc [4]	Report	Report	lbs/day	Report	Report	ug/l	1 X Monthly	24-Hr. Comp.
Benzo(a)pyrene	Report	Report	lbs/day	Report	Report	ug/l	1 X Quarter[3]	24-Hr. Comp.
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Weekly	Grab

Outfall 017

US Steel has made changes at the plant so that only storm water is discharged from Outfall 017. Because of this it is appropriate to remove the limits and monitoring requirements for Mercury and Total Residual Chlorine and change the monitoring frequency to 1 X quarterly.

The Oil & Grease and the pH limitations have been reduced to monitor only. Outfall 017 will be monitored as follows:

DISCHARGE LIMITATIONS
Outfall 017

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	-	-	-	Daily	24-Hr. Total
Total Suspended Solids	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Quarter	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
Free Cyanide	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
Lead	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
Zinc	Report	Report	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
				Minimum Daily	Maximum Daily			
pH				Report	Report	s.u.	1 X Quarter	Grab

Outfalls 018 and 019, Bubble Outfall 300

Bubble Outfall 300 is no longer included in the permit. Individual Outfalls 018 and 019 are now limited individually.

Outfall 018

Table 5 in Attachment V (Reasonable Potential Tables) shows the reasonable potential to exceed current water quality standards analysis as required in 327 IAC 5-2-11.5. Copper, Mercury and Total Residual Chlorine have the reasonable potential to exceed water quality standards and require water quality based effluent limitations be placed in the permit. The ammonia limitations were based upon a trigger level established in an earlier consent decree. Because there are no significant sources of ammonia, the trigger limits are removed, however, continued monitoring will be required. Monitoring Phenols (4AAP) and T. Cyanide were established to determine if leaks or spills occurred in the system. The monitoring of Phenols (4AAP) and T. Cyanide are carried over from the previous permit for this same reason. Mass limitations are based upon a flow from Outfall 018 of 49.85 MGD.

DISCHARGE LIMITATIONS
Outfall 018

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Weekly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Cyanide	------	Report	lbs/day	------	Report	ug/l	1 X Monthly	3 Grabs/24-Hrs.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Copper								
Interim	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Final	5.0	11.2	lbs/day	0.012	0.027	mg/l	2 X Weekly	24-Hr. Comp.
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.0005	0.0013	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Temperature	------	-------	--------	-------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Total Residual Chlorine	3.3	7.5 [8]	lbs/day	8	18	ug/l	Daily	Grab
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Weekly	Grab

Outfall 019

Table 6 in Attachment V (Reasonable Potential Tables) shows the reasonable potential to exceed water quality standards analysis as required in 327 IAC 5-2-11.5. Mercury and Total Residual Chlorine have the reasonable potential to exceed water quality standards and require water quality based effluent limitations be placed in the permit. The ammonia limitations were based upon a trigger level established in an earlier consent decree. Because there are no significant sources of ammonia, the trigger limits are removed, however, continued monitoring will be required. Monitoring Phenols (4AAP) and T. Cyanide were established to determine if leaks or spills occurred in the system. The monitoring of Phenols (4AAP) and T. Cyanide are carried over from the previous permit for this same reason. Mass limitations are based upon a flow from Outfall 019 of 51.75 MGD.

DISCHARGE LIMITATIONS
Outfall 019

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	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Weekly	Grab
Temperature	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Total Cyanide	------	Report	lbs/day	------	Report	mg/l	1 X Monthly	3 Grabs/24-Hrs.
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.0006	0.0014	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Residual Chlorine	3.5	7.8	lbs/day	8	18	ug/l	Daily	Grab
			Minimum Daily	Maximum Daily				
pH			6.0	9.0		s.u.	1 X Weekly	Grab

Outfall 020

Table 7 in Attachment V (Reasonable Potential Tables) shows the reasonable potential to exceed water quality standards analysis as required in 327 IAC 5-2-11.5. Lead, Mercury, and Total Residual Chlorine have the reasonable potential to exceed water quality standards and require water quality based effluent limitations be placed in the permit. Discharge concentrations are greater than that of the intake water and warrant continued monitoring. Monitoring requirements for Zinc are continued at Outfall 020 based upon Best Professional Judgment. Mass limitations are based upon a flow of 64.4 MGD.

DISCHARGE LIMITATIONS
Outfall 020

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	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Weekly	Grab
Temperature	--------	---------	--------	-------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Lead	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.0007	0.002	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Total Residual Chlorine	4.3	9.7	lbs/day	8	18	ug/l	Daily	Grab
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Monthly	Grab

Outfalls 021, 023, and 026

Outfall 021 consists of air compressor non-contact cooling water, steam condensate, and some storm water. Outfall 023 consists of intermittent flows of steam condensate, air conditioning condensate from the hospital and other buildings, and some storm water. Outfall 026 is currently inactive and no monitoring will be required as long as the outfall is inactive but monitoring requirements are established if it becomes active again. Monitoring from the previous permit consisted of Oil and Grease.

Outfall 021

DISCHARGE LIMITATIONS
Outfall 021

	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	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 023

DISCHARGE LIMITATIONS
Outfall 023

	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	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 026

Outfall 026 is currently inactive but covered under this permit. Monitoring requirements are established in case US Steel re-activates this outfall. US Steel shall notify IDEM at least 30 days prior to re-activation.

DISCHARGE LIMITATIONS
Outfall 026 (Inactive)

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	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfalls 028/Outfall 030, Bubble Outfall 600

Table 8 in Attachment V (Reasonable Potential Tables) shows the reasonable potential to exceed analysis as required in 327 IAC 5-2-11.5. Mercury, Fluoride and Total Residual Chlorine have the reasonable potential to exceed the current water quality based effluent limitations and require water quality based effluent limitations be placed in the permit. Mass limitations are calculated based upon a flow through Outfall 028/030 of 31.9 MGD.

DISCHARGE LIMITATIONS
Outfall 028/030 (Outfall 600)

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	-	-	-	Daily	Continuous
Total Suspended Solids	2,038	5,933	lbs/day	Report	Report	mg/l	5 X Weekly	24-Hr. Comp.
Oil & Grease	952	2,467	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/ 24 Hrs
Lead	6.34	14.73	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Zinc	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.00035	0.0009	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Total Residual Chlorine	2.1	4.8 [8]	lbs/day	8	18	ug/l	Daily	Grab
Temperature	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Whole Effluent Toxicity			See Part I.L., Biomonitoring Requirements					
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Weekly	Grab

Internal Outfall 603 discharging via Outfall 030

Internal Outfall 603 is regulated by the federal effluent guidelines for discharges from steelmaking, continuous casting and vacuum degassing operations.

DISCHARGE LIMITATIONS
Internal Outfall 603

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	-	-	-	Daily	Continuous
Lead	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc	13.1	39.1	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Weekly	Grab

Outfall 032

Outfall 032 consists of miscellaneous QA non-contact cooling water, miscellaneous bar mill freeze protection water, steam condensate, and some storm water. Reasonable potential for TRC exists because of chlorine added at the intake structures for zebra mussel control. Monitoring for Oil and Grease and the pH limitations at this outfall are carried over from the previous permit. Mass limitations calculated were based upon a flow of 0.3 MGD.

DISCHARGE LIMITATIONS
Outfall 032

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	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine	0.02	0.045	lbs/day	8	18	ug/l	Daily	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 033

Outfall 033 consists of discharges of non-contact cooling water from the sheet & tin mill, atmospheric gas plant non-contact cooling water, Buchanan Street sanitary lift station emergency overflow (SOF-1), EJ&E miscellaneous intermittent flows, steam condensate, and some storm water. Monitoring for Phenols (4AAP) and Oil & Grease are required to ensure that possible leaks of process waters from the tin lines are detected. Limitations for pH are carried over from the previous permit. Reasonable potential for TRC exists because of chlorine added at the intake structures for zebra mussel control, and mass limitations are based upon a flow of 0.2 MGD.

DISCHARGE LIMITATIONS
Outfall 033

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	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	------	Report	mg/l	1 X Monthly	Grab
Phenols (4AAP)	-----	Report	lbs/day	------	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Residual Chlorine	0.01	0.03	lbs/day	8	18	ug/l	Daily	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 034

Outfall 034 consists of discharges from the process lines that are monitored and regulated by Internal Outfalls 604, 605, and 606. Mass limitations calculated from water quality based effluent concentration values were based upon a flow of 28.5 MGD. The previous permit contained both water quality and federal effluent guideline limitations at Outfall 034. This permit moves back to the internal outfalls much of the federal effluent guideline limitations except for Oil & Grease which is regulated at Outfall 034. The previous permit contained Oil and Grease limits that were based upon best professional judgment and were more stringent limits than the calculated ELGs allow. Those limits of 1500 lbs/day monthly average and 4000 lbs/day daily maximum are continued from the previous permit. Other limitations that are based upon water quality standards are retained at Outfall 034.

CBOD5

US Steel on several occasions, including a letter dated August 9, 2002, has requested that the CBOD5 effluent limitations at Outfall 034 be re-evaluated. In a letter to US Steel dated August 20, 2003, IDEM informed US Steel that the model for BOD-DO has not changed for this permit. Since the original data used in the previous model is still the most current available data at this time, the CBOD-DO limitations from the 1992 WLA are still applicable and the appropriate mass limits have been carried over to this permit.

Mercury, and Total Residual Chlorine (TRC)

Water quality based effluent limitations were developed using 327 IAC 5-2-11.4 and reasonable potential determinations using 327 IAC 5-2-11.5. Water quality based effluent limits are shown for parameters of concern in the reasonable potential to exceed in Table 9 Attachment V. Corresponding mass limitations are based upon a flow of 28.5 MGD.

Lead, Phenols (4AAP)

The limitations for these parameters are carried over from the previous permit.

Effluent limitations at Outfall 034 are detailed below:

DISCHARGE LIMITATIONS
Outfall 034

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	-	-	-	Daily	Continuous
$CBOD_5$								
Summer	1,334	2,669	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Winter	4,537	9,074	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	1,850	4,000	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/ 24 Hrs
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Lead	2.52	5.85	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Zinc	34.98	74.68	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Mercury								
Interim	Report	Report	lbs/day	Report	Report	ng/l	Bi-Monthly	Grab
Final	0.0003	0.0008	lbs/day	1.3	3.2	ng/l	Bi-Monthly	Grab
Phenols (4AAP)	26.00	39.00	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
Total Residual Chlorine	1.9	4.3	lbs/day	8	18	ug/l	See Footnote in permit	Grab
Temperature [3]	----------	----------	----------	----------	Report	°F	2 X Weekly	6 Grabs/24-Hrs.
Whole Effluent Toxicity			See Part I.L., Biomonitoring Requirements in permit.					
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	See Footnote in permit	Grab
Dissolved Oxygen				5.0	---	mg/l	1 X Weekly	Grab

Internal Outfall 604 via Outfall 034

Internal Outfall 604 consists of process water from the No. 1 Tin-free Steel line, the No. 5 & 6 Electrolytic Tinning Lines, East Galvanizing Lines, the chrome reduction floor drains, and the spent chrome solutions from the tinning and galvanizing lines. Internal Outfall 604 is limited by the federal effluent guidelines and based on the production values provided have the following limitations. Federal Effluent Limitations were based upon 40 CFR 420 and 40 CFR 433. Most of the additional parameters below are from the requirements in the Metal Finishing Category. EPA requires that all applicable parameters are included in at least one permitting cycle.

DISCHARGE LIMITATIONS
Outfall 604

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	-	-	-	Daily	Continuous
Total Suspended Solids	3,269	7,166	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/ 24 Hrs.
Total Recoverable Chromium	48.5	78.5	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Lead	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc	20.2	43.5	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Total Cyanide	18.4	34.0	lbs/day	Report	Report	mg/l	1 X Quarter	3 Grabs/ 24 Hrs.
Cadmium	7.4	19.6	lbs/day	Report	Report	mg/l	1 X Quarter	24-Hr.Comp.

Hexavalent Chromium	0.16	0.46	lbs/day	Report	Report	mg/l	1 X Quarter	Grab
Copper	59.7	95.9	lbs/day	Report	Report	mg/l	1 X Quarter	24-Hr. Comp.
Nickel	67.5	112.9	lbs/day	Report	Report	mg/l	1 X Quarter	24-Hr. Comp.
Silver	6.8	12.2	lbs/day	Report	Report	mg/l	1 X Quarter	24-Hr. Comp.
TTO	------	60.4	lbs/day	-------	--------	-----	1 X Monthly	24-Hr. Comp.
Naphthalene	------	1.7	lbs/day	-------	Report	mg/l	2 X Weekly	24-Hr. Comp.
Tetrachloroethylene	-----	2.5	lbs/day	-------	Report	mg/l	2 X Weekly	24-Hr. Comp.
Phenols (4AAP)	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Chlorides	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.

Internal Outfall 605 via Outfall 034

Internal Outfall 605 limits discharges from the 84" hot strip mill and were based upon the limitations contained in the previous US Steel Gary Works permit which were more stringent than the mass limitations allocated by the federal effluent limitation guidelines. These were carried over from the then previous permit to the currently administered extended permit because they were more stringent. These same limitations will be carried over to the current permit for the same reasons.

DISCHARGE LIMITATIONS
Outfall 605

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Total Suspended Solids	725	2,175	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease	------	1,450	lbs/day	-----	Report	mg/l	5 X Weekly	3 Grab/ 24-Hrs

Internal Outfall 606 via Outfall 034

Internal Outfall 606 was established as part of a proposed special condition that required US Steel to conduct routine monitoring of the 84" x 91 " sewer and initiate corrective actions whenever discharges of process materials or process wastewaters were noted. The discharge from the 84" x 91" sewer is regulated by the end-of-pipe effluent limitations applicable to Outfall 034. The purpose of the monitoring and special condition is to provide a mechanism for early detection of possible spills or leaks. These monitoring requirements are carried over from the previous permit.

DISCHARGE LIMITATIONS
Outfall 606

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	24-Hr. Total
Oil & Grease	----	----	----	-----	Report	mg/l	1 X Weekly	Grab
Total Chromium	----	----	----	-----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Zinc	----	----	----	----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead	----	----	----	----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Phenols (4AAP)	----	----	----	----	Report	mg/l	1 X Monthly	24-Hr. Comp.

Outfall 035

Outfall 035 consists of once through non-contact cooling water discharged from the No. 5 Power Generating Station, the Lakeside Energy Co-Generation Plant non-contact cooling water, intermittent amounts of steam condensate, and some storm water. Water Quality Based Effluent Limitations for Total Residual Chlorine are established based upon the reasonable potential to exceed analysis as required in 327 IAC 5-2-11.5 and are shown in Table 10 in Attachment V. Mass calculations developed based upon a water quality effluent concentration value used a flow of 176.3 MGD. The previous permit included limitations for ammonia which are not being carried over to this permit. A reasonable potential calculation determined no reasonable potential exists and there is not a known source for this parameter except intake water which is Lake Michigan water.

DISCHARGE LIMITATIONS
Outfall 035

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Daily	Continuous
Oil & Grease	------	------	------	-------	Report	mg/l	1 X Weekly	Grab
Temperature								
Discharge	------	------	------	------	Report	°F	1 X Hour	Continuous
Intake	-------	------	------	------	Report	°F	1 X Hour	Continuous
Thermal Discharge	See Footnote [5] in the permit for Effluent Limitations					BTU/Hr	Daily	Continuous
Total Residual Chlorine	11.8	26.5	lbs/day	8	18	ug/l	Daily	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 036

This outfall is now covered under a separate permit and has been removed from this final permit.

Outfall 037

The discharge from Outfall 037 consists of non-contact cooling water from the sheet and tin mill areas. Monitoring of Oil and Grease, Zinc, and Phenols (4AAP) are carried over from the previous permit. Monitoring was established on a BPJ basis in the last permit to ensure that possible leaks of process materials or discharges of process wastewaters are detected and corrected. Water Quality Based Effluent Limitations for Total Residual Chlorine are established based upon the reasonable potential to exceed analysis as required in 327 IAC 5-2-11.5 and are shown in Table 12 in Attachment V. Mass calculations developed based upon a water quality effluent concentration value used a flow of 3.0 MGD.

DISCHARGE LIMITATIONS
Outfall 037

Parameter	Quantity or Loading Monthly Average	Daily Maximum	Units	Quality or Concentration Monthly Average	Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Flow								
Interim	Report	Report	MGD	------	------	----	1 X Weekly	Estimate
Final	Report	Report	MGD	-	-	-	Daily	Continuous
Temperature								
Discharge								
Interim	------	------	------	------	Report	°F	1 X Week	Grab
Final	------	------	------	------	Report	°F	1 X Hour	Continuous
Intake	------	------	------	------	Report	°F	1 X Hour	Continuous
Thermal Discharge					Report	BTU/Hr	Daily	Continuous
Oil & Grease	------	------	------	-----	Report	mg/l	1 X Weekly	Grab
Zinc	-----	Report	lbs/day	-----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Phenols (4AAP)	----	Report	lbs/day	-----	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Residual Chlorine	0.2	0.45	lbs/day	8	18	ug/l	Daily	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 039

Outfall 039 consists of the 84" Hot Strip Mill Reheat Furnace non-contact cooling water, the 84" Hot Strip Mill miscellaneous non-contact cooling water, the 84" Hot Strip Mill fire water distribution system, some intermittent amounts of steam condensate and cold well pump room flood protection water, the 84" Hot Strip Mill Roughing Mill Scale Pit Emergency Overflow, and some storm water. Water Quality Based Effluent Limitations for Total Residual Chlorine are established based upon the reasonable potential to exceed analysis as required in 327 IAC 5-2-11.5 and are shown in Table 13 in Attachment V. Mass calculations developed based upon a water quality effluent concentration value used a flow of 55.0 MGD.

DISCHARGE LIMITATIONS
Outfall 039

Parameter	Quantity or Loading Monthly Average	Daily Maximum	Units	Quality or Concentration Monthly Average	Daily Maximum	Units	Monitoring Measurement Frequency	Requirements Sample Type
Flow								
Interim	Report	Report	MGD	------	------	----	1 X Weekly	Estimate
Final	Report	Report	MGD	------	------	-----	Daily	Continuous
Temperature								
Discharge								
Interim	------	------	------	------	Report	°F	1 X Week	Grab
Final	------	------	------	------	Report	°F	1 X Hour	Continuous
Intake	------	------	------	------	Report	°F	1 X Hour	Continuous
Thermal Discharge					Report	BTU/Hr	Daily	Continuous
Oil & Grease	------	------	------	-----	Report	mg/l	1 X Weekly	Grab
Total Residual Chlorine	3.7	8.3 [2]	lbs/day	8	18	ug/l	Daily	Grab

			Minimum Daily	Maximum Daily			
pH	-------	-------	6.0	9.0	s.u.	1 X Monthly	Grab

Outfall 040

Outfall 040 discharges non-contact cooling water from the No. 1 Electro-galvanizing line, filter backwash, steam condensate, boiler blowdown, and storm water to Stockton Pond. Table 14 in Attachment V (Reasonable Potential Tables) shows the reasonable potential to exceed analysis as required in 327 IAC 5-2-11.5. The parameters Copper, Zinc, Total Residual Chlorine, and Ammonia - N have reasonable potential to exceed water quality standards and require water quality based effluent limitations to be placed in the permit for discharges from Outfall 040 to Stockton Pond. Mass calculations are based upon a flow to Stockton Pond of 0.2 MGD.

DISCHARGE LIMITATIONS
Outfall 040

	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	-	-	-	1 X Weekly	24 Hr. Total
Temperature	-------	---------	--------	--------	Report	°F	1 X Monthly	Grab
Oil & Grease	-------	--------	--------	-------	Report	mg/l	1 X Monthly	Grab
Zinc								
Interim	Report	Report	lbs/day	Report	Report	mg/l	3 X Monthly	24-Hr. Comp.
Final	0.14	0.3	lbs/day	0.084	0.170	mg/l	1 X Weekly	24-Hr. Comp.
Copper								
Interim	Report	Report	lbs/day	Report	Report	mg/l	3 X Monthly	24-Hr. Comp.
Final	0.022	0.035	lbs/day	0.013	0.021	mg/l	1 X Weekly	24-Hr. Comp.
Total Residual Chlorine	0.01	0.03	lbs/day	8	18	ug/l	Daily	Grab
Ammonia								
Summer								
Interim	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Final	0.82	1.35	lbs/day	0.49	0.81	mg/l	1 X Monthly	24-Hr. Comp.
Winter								
Interim	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Final	0.37	0.6	lbs/day	0.22	0.36	mg/l	1 X Monthly	24-Hr. Comp.
				Minimum Daily	Maximum Daily			
pH				6.0	9.0	s.u.	1 X Monthly	Grab

Outfalls 041A & B

Outfalls 041A & B discharge non-contact cooling water from the ore yard rectifier system.

DISCHARGE LIMITATIONS
Outfall 041A & 041B

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	-	-	-	1 X Monthly	Estimate
Oil & Grease	------	------	------	Report	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine	0.006	0.013	lbs/day	8	18	ug/l	1 X Monthly	Grab
Zinc	Report	Report	lbs/day	Report	Report	mg/l	1 X Monthly	Grab
				Minimum Daily	Maximum Daily			
pH	-------	-------		6.0	9.0	s.u.	1 X Monthly	Grab

Water Intake Screen Backwash - Outfalls BW-1, BW-2, BW-3, BW-4, and BW-5

US Steel has five service water intake structures operating off of Lake Michigan. The Pump Screen Backwash from these facilities discharge to Lake Michigan and are designated as BW-1 BW-2, BW-3, BW-4, and BW-5. A sixth (BW-6) has been closed. The permit will include conditions covering the five active water intake screen backwash facilities.

The existing intake structures at the facility were previously approved relating to the location, design, construction, and capacity of the cooling water intake structures to reflect the best technology available for minimizing adverse environment impact.

DISCHARGE LIMITATIONS

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	MGD	------	------	-----	Quarterly	Estimate

5. Special NPDES Permit Conditions and Monitoring Programs

The previous permit contained a number of special conditions and monitoring programs in addition to the interim and final effluent limitations and routine monitoring requirements. Reference is made to the permit for the specific requirements of each program.

Storm Water Requirements

The Gary Works permit issued in 1994 included provisions for US Steel to prepare a Storm Water Pollution Prevention Plan (SWPPP) at the Gary Works Facility. The original SWPPP was finalized in 1996 and revised in April 1997. US Steel has also implemented a separate SWPPP for the Coke Plant. The SWPPP for the Coke Plant Operations is consistent with the Gary Works SWPPP. The Coke Plant SWPPP was

revised in April 1997 and September 1999. US Steel as part of their overall SWPPP development took into account the General Permit for Storm Water Discharges Associated with Industrial Activity from Primary Metals Facilities. This EPA general permit applies to states in which EPA administers the NPDES Permit Program. The SWPPP requirement IDEM placed in the permit governs the requirements in the SWPPP for Gary Works, the requirements of the general EPA Permit were taken into account in developing the SWPPP.

The previous permit also included a BMP requirement for runoff control at the coal processing area. This BMP has been developed and implemented and is part of the Coke Plant SWPPP.

Based upon a review of the SWPPP's submitted for the Gary Works Facility, US Steel should continue the implementation of the SWPPP's currently in force and modify and implement additional BMP's as needed. This includes the BMP for Runoff Control at the Coal Processing Area currently implemented at the Gary Works Facility. The BMP Runoff Control at the Coal Processing Area covered Outfall(s) 001, 003, and 004. Outfall(s) 001 and 003 have been eliminated. The related stormwater runoff was re-routed to the Outfall 004 system which currently does not discharge.

A review of the current requirements for storm water monitoring is on a once a year or annual basis. Part I. J. of the permit details the specific parameters and outfalls where these sampling and monitoring requirements are to be implemented.

US Steel has also implemented the BMP requirement for the Coal processing area that was a condition from the last permit. The Coal processing area BMP was enacted in December 1994 and subsequently revised in April 1999 and April 2000. US Steel is to maintain the SWPPPs and the BMP requirement for the Coal processing area that was implemented at the Gary Works Facility in April 1997 and must revise them at least annually whenever there is a change in design, construction, operation, or maintenance which may impact the potential for pollutants to be discharged to surface waters of the state, or if the plan(s) prove to be ineffective in controlling the discharge of pollutants, or upon written notice by the commissioner.

Reporting Requirements for Solvents, Degreasing Agents, Rolling Oils, Water Treatment Chemicals and Biocides (Water Treatment Additive Approvals and Requirements)

US Steel has on an annual basis reported the total quantity (lbs/year) of each solvent, degreasing agent, water treatment chemical, rolling oil and biocide that was purchased for that year. This requirement will continue as in the previous permit.

Whole Effluent Toxicity Requirements

The reasonable potential process was applied to the Gary Works Outfalls and the results are shown in Table 15 of Appendix V. IDEM used its reasonable potential procedures

outlined in 5-2-11.5(c)(2) and 5-2-11.5(c)(3). EPA did not approve 5-2-11.5(c)(1), so IDEM is required to apply Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CRF Part 132 with one exception. The reasonable potential equation was rearranged so that it is similar to the equation that IDEM uses for other pollutants and pollutant parameters. Based upon the reasonable analysis completed the permit contains Chronic WET toxicity limitations (Tu c) at Outfall(s) 005 and 034. Limitations for chronic WET are noted in the Part I.L, Biomonitoring Requirements. A five year compliance schedule to meet the limitations for WET has been included in the permit. Additional WET monitoring requirements are included for Outfalls 010, and 028/030.

Compliance Schedule

For the parameters listed in Table 7 below a five year schedule of compliance has been included in the permit. US Steel has indicated in correspondence submitted that additional time will be required to do additional sampling, so as a result all parameters were given a five (5) year schedule of compliance. A separate schedule of compliance was developed specifically for Mercury and a reopener has been included to make the modifications necessary as a result of changes required if US Steel applies for the Steamlined Mercury Variance (SMV).

Table 7

Outfall	Parameter
005	Benzo(a)pyrene
	Free Cyanide (Season 2)
	$WETT_{(chronic)}$
010	Benzo(a)pyrene
018	Copper
034	$WETT_{(chronic)}$
040	Zinc, Copper, and Ammonia

Visible Oil Corrective Action Monitoring Program

This was implemented as part of a Consent Decree through US EPA. Even though the consent decree is no longer in effect, the monitoring program still provides a useful service and this requirement is being carried over to the current permit. Much of the Oil and Grease issues at this facility are visible oil sheens and are not exceedances over numerical limits.

Water Treatment Additives

US Steel has submitted water treatment additives from several vendors for review. US Steel has submitted water treatment additive information by email on November 18, 2002, with hard copies sent by mail. Review has been completed with the additives approved for use so far listed in the permit. Comments were sent to US Steel on March 28, 2003 requesting additional information for some of the additives. The following water treatment additives are approved at the following outfalls:

Outfall 005: Betz Flogard MS6222, Betz Karaid PC1192, Betz Novus CE2682, Betz FoamTrol AF2080, Betz PolyFloc AE1123, Betz Klaraid PC1182, GE Betz Ferrameen FWT9031, GE Betz Ferrameen FWT9034, GE Betz Ferrameen FWT9036, Sodium Hypochlorite, and ChemTreat BL126.

Outfall 010: ChemTreat P813E, ChemTreat FO120, ChemTreat CL4074, ChemTret CT-709, ChemTreat P680NV, ChemTreat P835E, Sodium Hypochlorite, and ChemTreat BL126.

Outfall 015: Betz PolyFlocAE1123, Betz KlarAid IC1172, Sodium Hypochlorite, and ChemTreat BL126.

Outfall 017: Sodium Hypochlorite and ChemTreat BL126.

Outfall 018: ChemTreat CL1355, ChemTreat BL122, ChemTreat BL197, ChemTreat BL1351, ChemTreat BL1513, ChemTreat CL1376, ChemTreat BL126, and Sodium Hypochlorite.

Outfall 019: ChemTreat CL1355, ChemTreat BL122, ChemTreat BL197, ChemTreat BL1351, ChemTreat BL1513, ChemTreat CL1376, ChemTreat BL126, and Sodium Hypochlorite.

Outfall 020: ChemTreat BL126 and Sodium Hypochlorite.

Outfall 021: ChemTreat BL126 and Sodium Hypochlorite.

Outfall 023: ChemTreat BL126 and Sodium Hypochlorite.

Outfall 026: ChemTreat BL126 and Sodium Hypochlorite.

Outfall 028: Sulfuric Acid, ChemTreat FO120, ChemTreat P891L, ChemTreat P813E, Sodium Hypochlorite, Sodium Bisulfite, ChemTreat CL3857, ChemTreat CL4074, ChemTreat P841L, ChemTreat P894L, ChemTreat CL1355, ChemTreat CL4075, ChemTreat CL206, ChemTreat CL2840, Generic KOH and NaOH, ChemTreat 1370, ChemTreat CL4442, ChemTreat CL2005, ChemTreat CL2840, ChemTreat CL2900, ChemTreat CL4437, ChemTreat CL1427, ChemTreat CL49, ChemTreat CL4125, ChemTreat P873L, and ChemTreat CL1375.

Outfall 030: Sulfuric Acid, ChemTreat FO120, ChemTreat P891L, ChemTreat P813E, Sodium Hypochlorite, Sodium Bisulfite, ChemTreat CL3857, ChemTreat CL4074, ChemTreat P841L, ChemTreat P894L, ChemTreat CL1355, ChemTreat CL4075, ChemTreat CL206, ChemTreat CL2840, Generic KOH and NaOH, ChemTreat 1370, ChemTreat CL4442, ChemTreat CL2005, ChemTreat CL2840, ChemTreat CL2900, ChemTreat CL4437, ChemTreat CL1427, ChemTreat CL49, ChemTreat CL4125, ChemTreat P873L, and ChemTreat CL1375.

Outfall 032: ChemTreat BL126 and Sodium Hypochlorite.

Outfall 033: ChemTreat BL126 and Sodium Hypochlorite.

Outfall 034: ChemTreat CT709, ChemTreat P802E, ChemTreat P813E, ChemTreat P841L, ChemTreat P846E, ChemTreat CT804, ChemTreat CT930, ChemTreat P8905L, ChemTreat P835E, ChemTreat P819L, Sodium Hypochlorite, ChemTreat C2189T, ChemTreat CL49, ChemTreat CT907, ChemTreat P873L, ChemTreat P891L, ChemTreat CL1439, and ChemTreat BL126.

Outfall 035: ChemTreat CL1355, ChemTreat BL126 and Sodium Hypochlorite.

Outfall 037: ChemTreat CT709, ChemTreat CL4358, Sodium Hypochlorite, and Sodium Bisulfite.

Outfall 039: Sodium Hypochlorite, and Sodium Bisulfite.

Outfall 040: ChemTreat BL122, ChemTreat BL4350, ChemTreat CL1352, Sodium Hypochlorite, and Sodium Bisulfite.

Outfall 041A and Outfall 041B: Sodium Hypochlorite, and Sodium Bisulfite.

Thermal Effluent Requirements

US Steel has major non-contact discharges to both the Grand Calumet River and Lake Michigan. Temperature requirements related to direct discharges to the Grand Calumet River are found in 327 IAC 2-1.5-6(c)(4) and direct discharges to Lake Michigan are covered by 327 IAC 2-1.5-6(c)(4)(D). Compliance with temperature effluent limitations can be determined in two ways. The temperature limitations can either be met at the end of the pipe prior to discharge (discharges to stream segments without dilution) or can account for the mixing zone allowed by 327 IAC 2-1.5-8(c).

WQBELs are required for a discharge that causes, has the reasonable potential to cause, or contributes to an excursion above a water quality criterion. The data for Outfall 005 show that this discharge causes excursions of the water quality criteria for temperature. Therefore, WQBELs for temperature are required for Outfall 005 to ensure that the water quality criteria for temperature are met in the Grand Calumet River. The compliance point for the temperature requirements at Outfall 005 can be taken at a point up to 100 feet downstream of Outfall 005. The data for Outfalls 010, 018, 019, 020, 028, 030 and 034 indicate that these outfalls would contribute to instream exceedances on many occasions if the instream exceedances that begin at Outfall 005 extend to these outfalls.

To ensure that the water quality criteria for temperature are met downstream of these outfalls, WQBELs will be applied downstream of Outfalls 020 and 030. Applying WQBELs downstream of Outfall 020 will ensure that the water quality criteria for

temperature are maintained downstream of the three large discharges at Outfalls 018, 019 and 020. Due to the mixing and heat dissipation that can occur between Outfall 020 and Broadway, the current monitoring location at Broadway does not indicate whether a zone of passage is being maintained. Therefore, the current instream monitoring location at Broadway is being moved closer to Outfall 020. Applying WQBELs downstream of Outfall 030 will ensure that the water quality criteria for temperature are maintained downstream of the two warmest discharges at Outfalls 028 and 030.

The limited outfalls that directly discharge to Lake Michigan will have effluent limits based upon requirements and temperature limitations established in 327 IAC 2-1.5-6(c)(4)(D). US Steel submitted a thermal study that was required in the July 1997 permit modification and it was shown that at the thermal levels discharged through Outfall 035, the temperature requirements at the 1,000 foot arc were being met. Based upon this information and since Outfall 035 has the most significant heat impact to Lake Michigan it has been determined that the temperature requirements are met at the 1,000 foot arc by the remaining Lake Michigan Outfalls. For purposes of temperature monitoring at Outfalls 035, 037, and 039 temperature is to be monitored at the Intake and Outfall locations. Significant increases in heat discharge in the future may require additional studies to be performed.

A one year schedule of compliance is proposed to incorporate continuous temperature monitoring at the outfalls. To meet the new Temperature Limitations required by the permit a three year schedule of compliance is proposed. This will allow more time to get better temperature data on a continuous basis prior to implementing the final effluent temperature limits.

Section 316(b) Requirements

Section 316(b) of the Clean Water Act requires EPA to ensure that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available to minimize adverse environmental impact. Such impacts include death or injury to aquatic organisms by impingement (being pinned against screens or other parts of a cooling water intake structure) or entrainment (being drawn into cooling water systems and subjected to thermal, physical, or chemical stresses).

EPA divided this rulemaking into three phases. Phase I for new facilities was completed in December 2001. Phase II, for existing electric generating plants that use at least 50 million gallons per day (MGD) of cooling water, was completed in July 2004. Phase III addresses existing facilities not covered by the Phase II rule that withdraw cooling water above a certain regulatory threshold. The Phase III rulemaking would also address new

EPA has proposed the following three options that, based on design intake flow and source waterbody, define three different instances in which existing facilities would be subject to new requirements. Either:

> The facility has a total design intake flow of 50 MGD or more, and withdraws from any waterbody type; or
>
> The facility has a total design intake flow of 200 MGD or more, and withdraws from any waterbody type; or
>
> The facility has a total design intake flow of 100 MGD or more and withdraws water from an ocean, estuary, tidal river, or one of the Great Lakes.

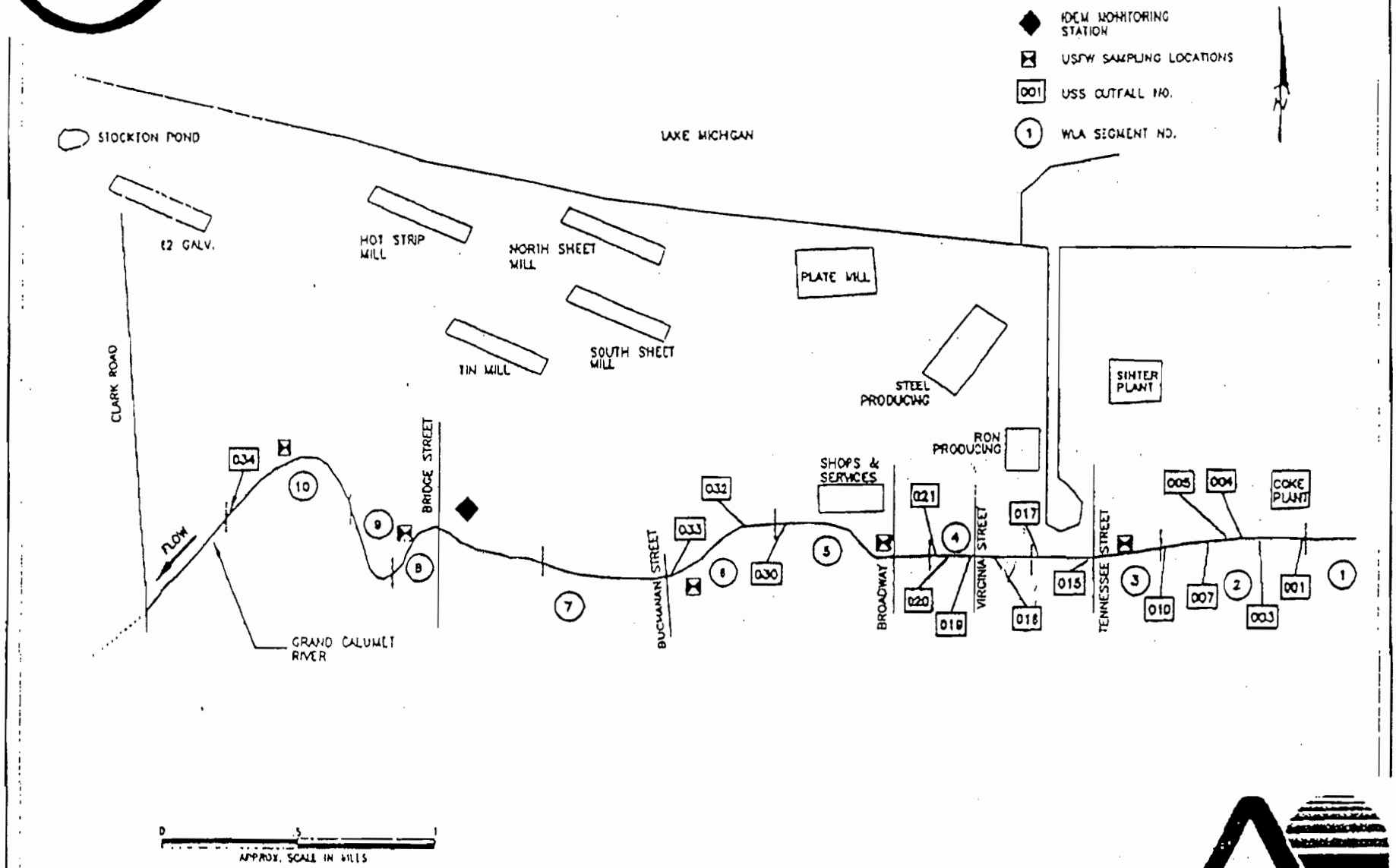
Only existing manufacturing facilities (not power producers) that have a design intake flow of 50 MGD or more and new oil and gas extraction facilities would be covered under the Phase III rule. Existing manufacturing facilities subject to the rule would have to meet the same requirements as those established in the Phase II regulations for large-flow power plants. Based upon a current interpretation of the rule, US Steel will not have to do anything further related to the 316(b) requirements.

United States Steel conducted impingement and entrainment studies on its intake structures in the 1970s. The 316(b) study was approved for the US Steel Gary Works Facility. US Steel must comply with the new 316(b) phase III requirements. The permit contains reopening language to address possible modifications related to these requirements. Additional changes related to temperature are included in Part III of the permit.

Prepared by Stan Rigney (June 2007)

USS GARY WORKS
COKE PLANT

1992 IDEM WLA MODEL SEGMENTATION



THE ADVENT GROUP, INC.

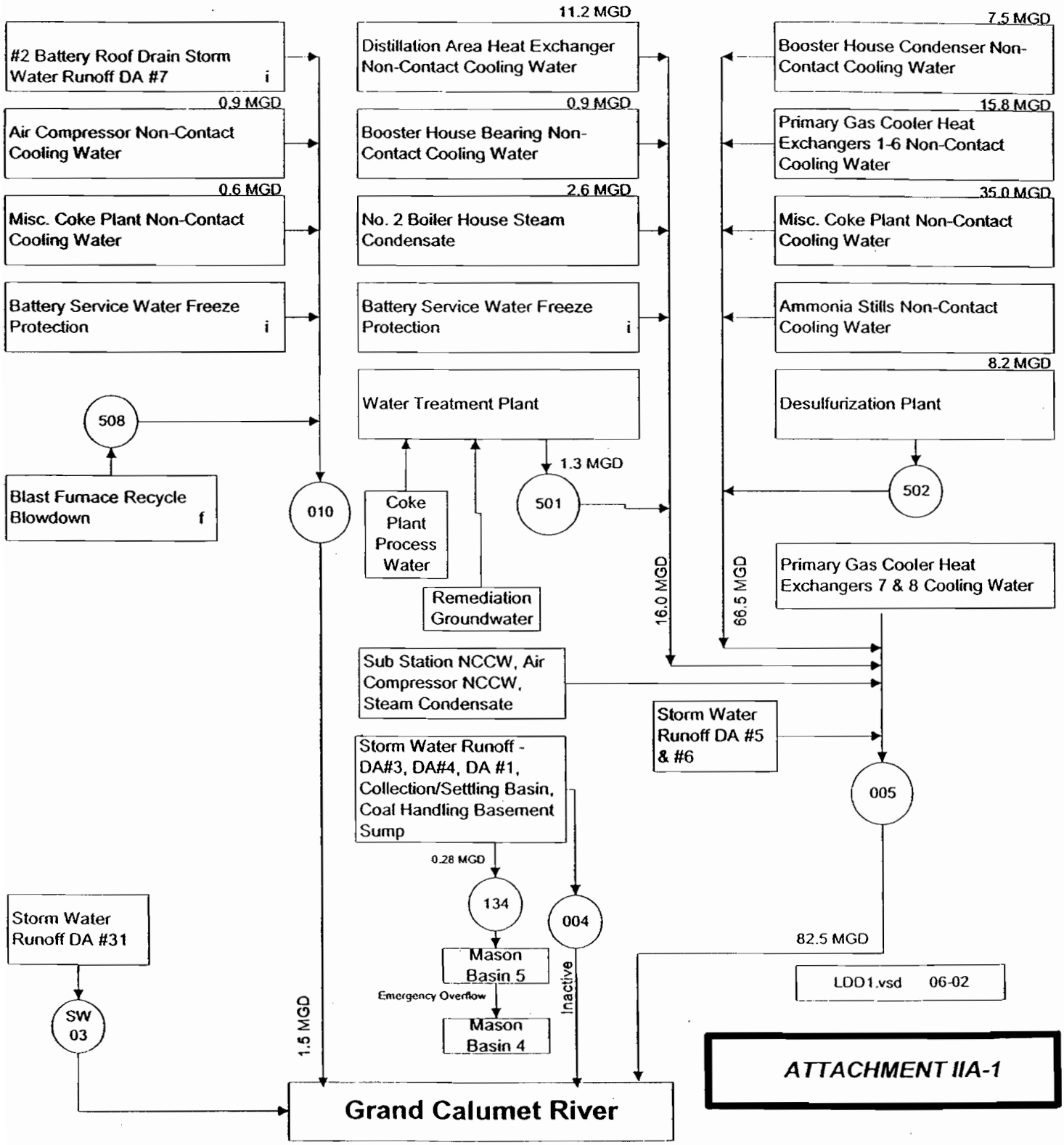
U.S. Steel - Gary Works

Line Drawing For Discharge Nos.

005 010 501 502 134

SW 03 004 508

Oct 22 3 50 PM '02



LDD1.vsd 06-02

ATTACHMENT IIA-1

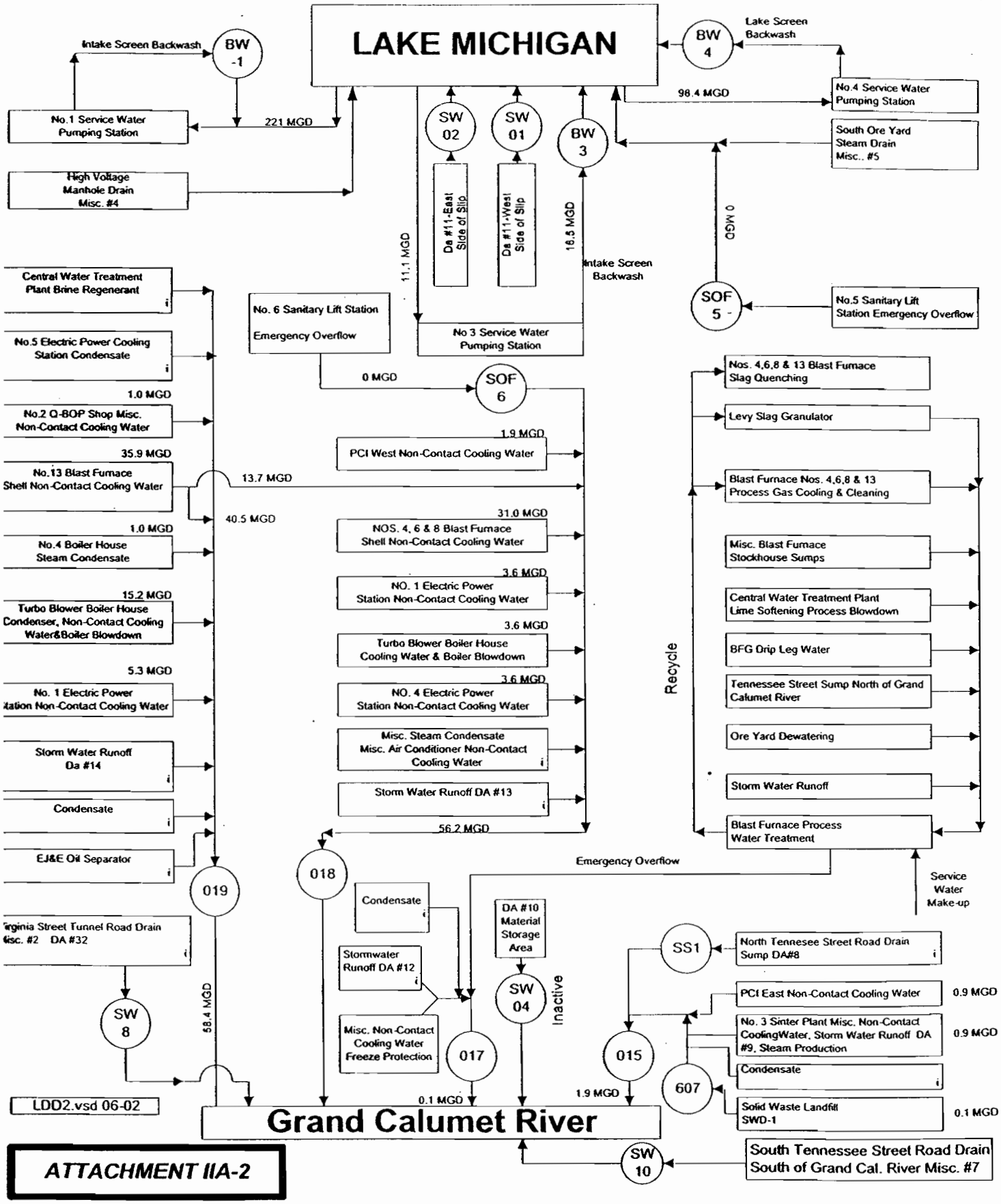
U.S. Steel-Gary Works

Line Drawings For Discharge Nos.

015 017 018 019 BW 1 BW 3 BW 4 SOF 5 SOF 6

SS 1 SW 01 SW 02 SW 04 SW 08 SW 10 607

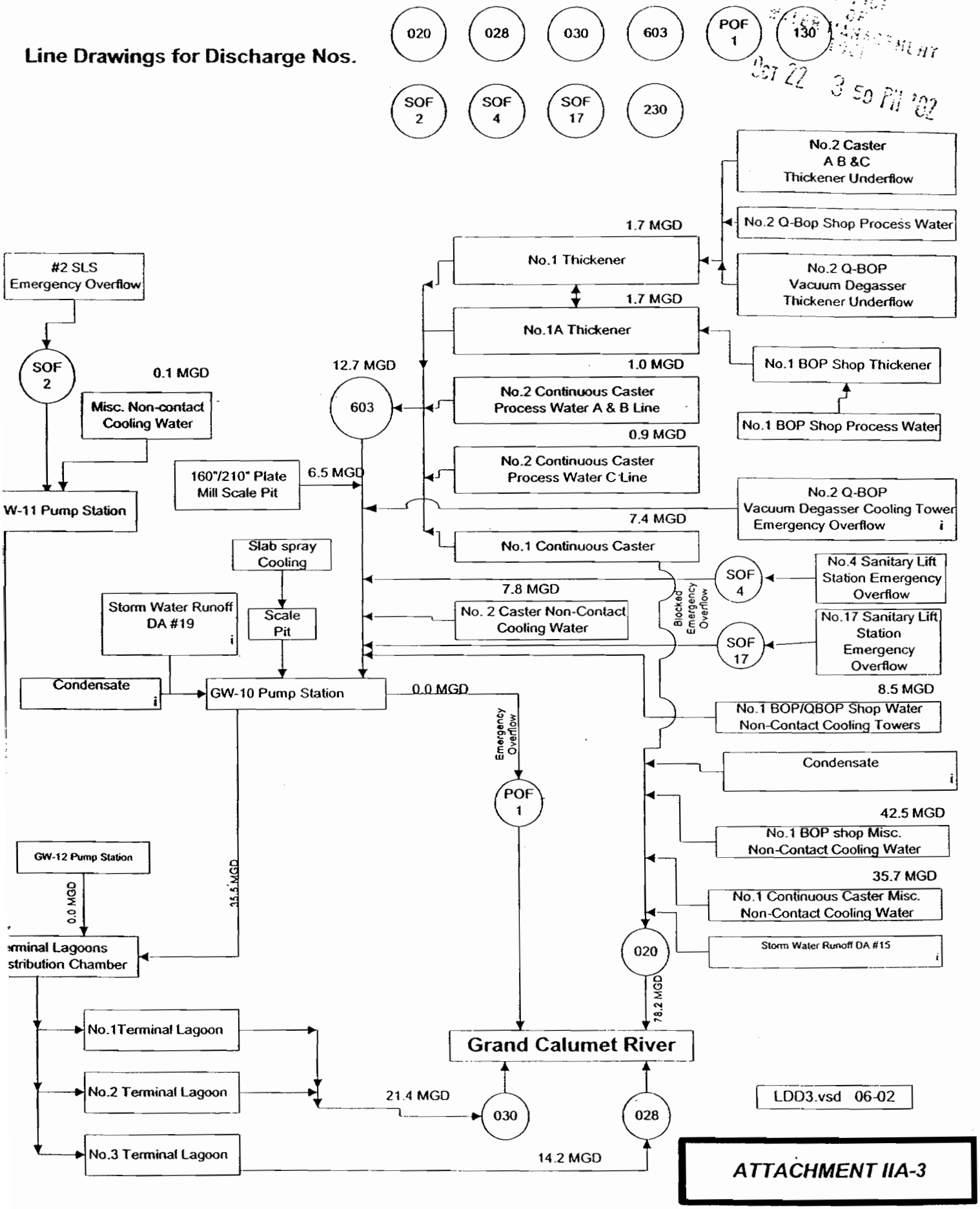
OFFICE OF WATER MANAGEMENT
OCT 22 3 50 PM '02



ATTACHMENT IIA-2

U.S. Steel - Gary Works

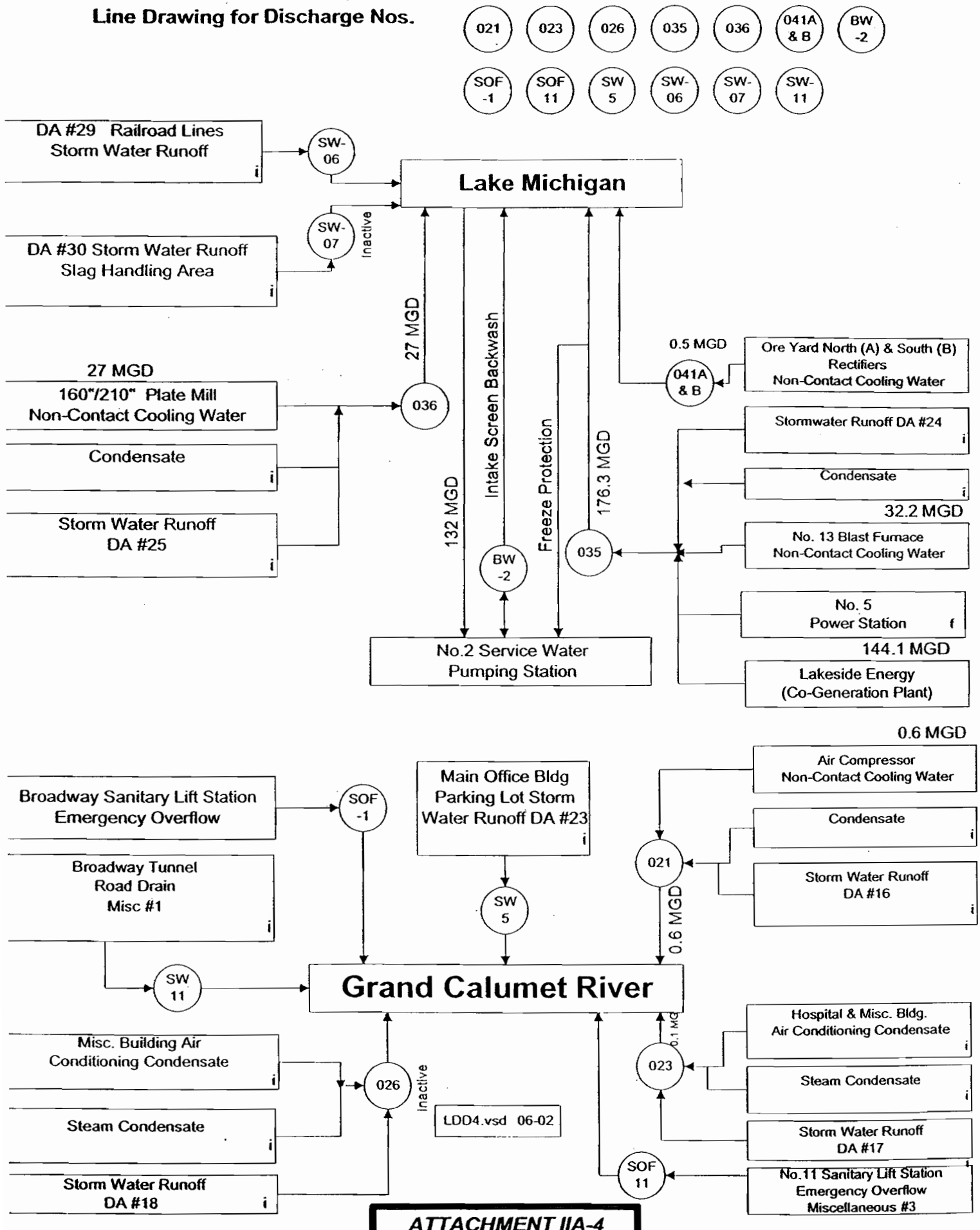
Line Drawings for Discharge Nos.



ATTACHMENT IIA-3

U.S. Steel-Gary Works

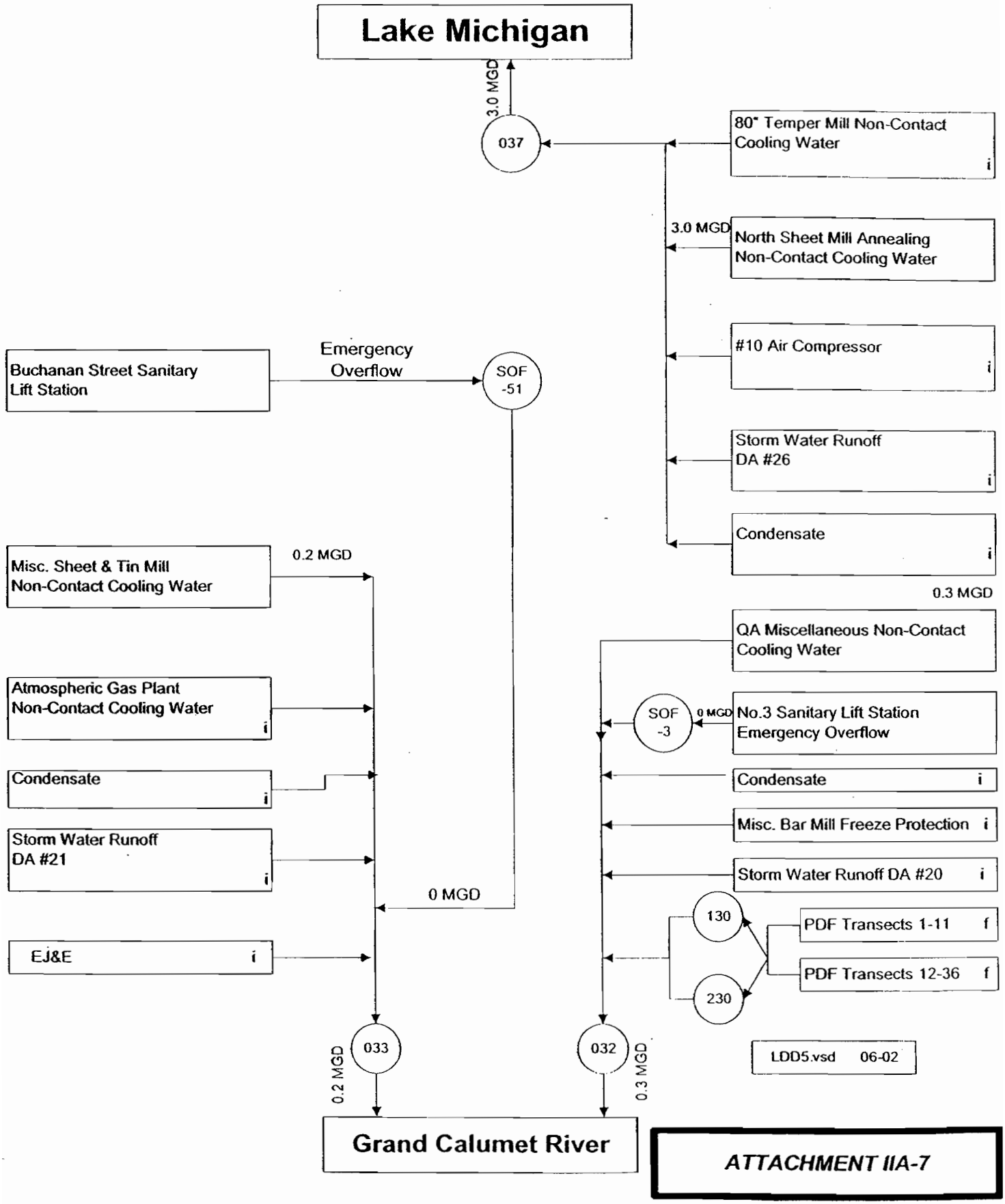
Line Drawing for Discharge Nos.



ATTACHMENT IIA-4

U.S. Steel - Gary Works

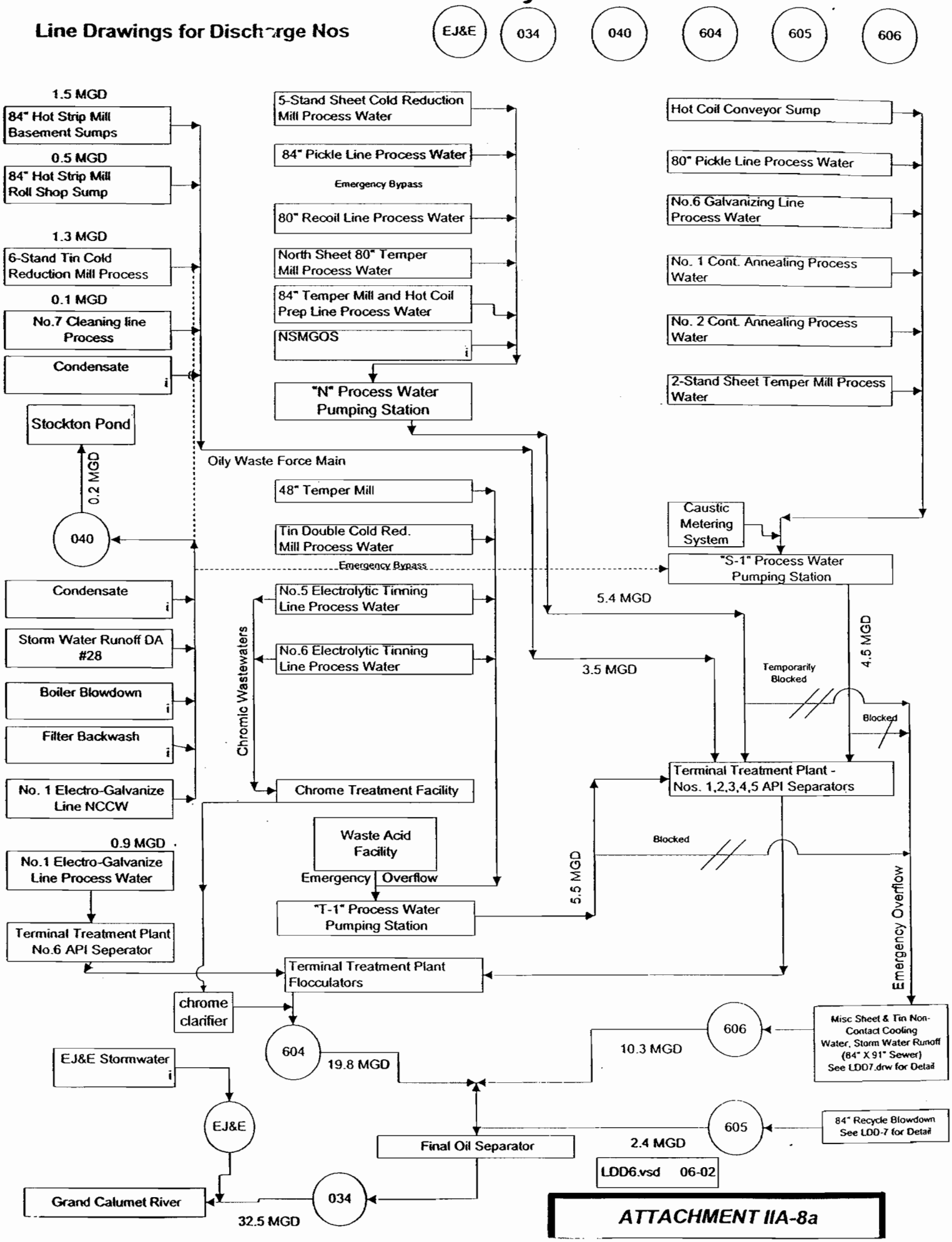
Line Drawing For Discharge Nos. 032 033 037 SOF -51 SOF -3



ATTACHMENT IIA-7

U.S. Steel - Gary Works

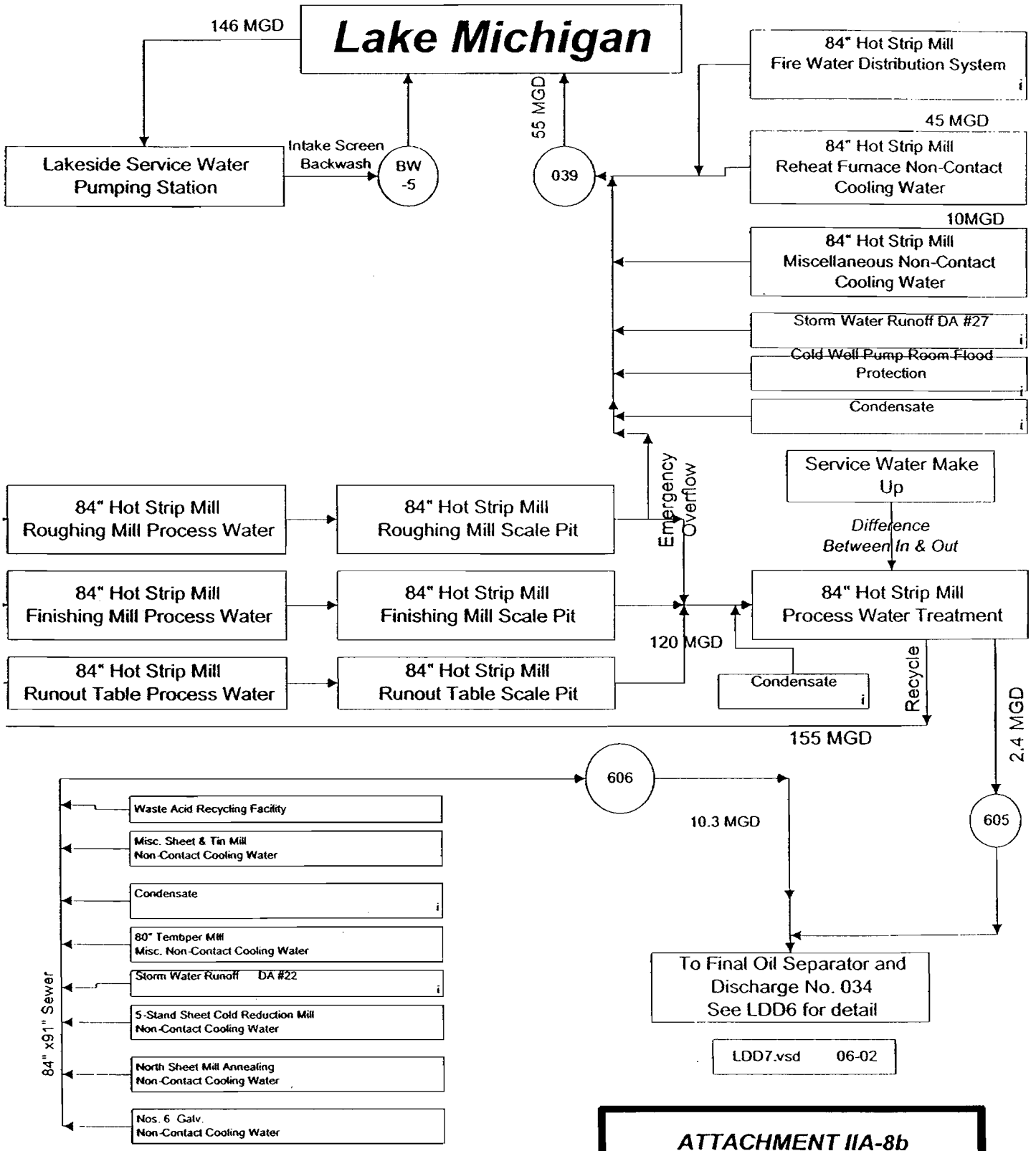
Line Drawings for Discharge Nos



ATTACHMENT IIA-8a

U.S. Steel - Gary Works

Line Drawings for Discharge Nos. 039 605 606 BW -5



ATTACHMENT IIA-8b

Technology Based Effluent Limiations

US Steel Gary Works

Internal Monitoring Station 501

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS Max	TSS Ave	Oil and Grease Max	Oil and Grease Ave	Ammonia-N Max	Ammonia-N Ave	Cyanide Max	Cyanide Ave	Phenols (4AAP) Max	Phenols (4AAP) Ave	Benzene Max	Benzene Ave
40 CFR 420.14(a)	3,950	0.172	0.0894	0.00638	--	0.0543	0.016	0.00638	0.00351	0.0000638	0.0000319	0.0000319	--
Cokemaking		**1,359**	**706**	**50.40**		**429.0**	**126.4**	**50.40**	**27.73**	**0.50**	**0.25**	**0.25**	

Naphthalene Max	Naphthalene Ave	Benzo(a)pyrene Max	Benzo(a)pyrene Ave
0.0000319	--	0.0000319	--
0.25		**0.25**	

Note: The citation to 40 CFR 420.14(a) is to the New Source Performance Standards (NSPS) promulgated in 1982.

Technology Based Effluent Limiations

US Steel Gary Works

Internal Monitoring Station 508

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS		Ammonia-N		Cyanide		Phenols (4AAP)		Lead		Zinc	
		Max	Ave	Max	Ave	Max	Ave	Max	Ave	Max	Ave	Max	Ave
40 CFR 420.32/33	19,290	0.0782	0.026	0.00876	0.00292	0.00175	0.000876	0.0000584	0.0000292	0.000263	8.76E-05	0.000394	0.000131
Ironmaking		3017.0	1003.1	338.0	112.7	67.5	33.8	2.3	1.1	10.1	3.4	15.2	5.1
Total Ironmaking													
Total		**3,017**	**1,003**	**338.0**	**112.7**	**67.5**	**33.8**	**2.25**	**1.13**	**10.15**	**3.38**	**15.20**	**5.05**

Technology Based Effluent Limiations

US Steel Gary Works

Internal Monitoring Station 603

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	Lead Max	Lead Ave	Zinc Max	Zinc Ave
40 CFR 420.42/43	11,112	0.000413	0.000138	0.00062	0.000207
#1 BOP		9.18	3.07	13.78	4.60
40 CFR 420.42/43	14,003	0.000413	0.000138	0.00062	0.000207
Q-BOP (#2 Q-BOP)		11.6	3.9	17.4	5.8
40 CFR 420.54	5,922	0.0000939	0.0000313	0.000141	0.0000469
Vacuum Degassing		1.11	0.37	1.67	0.56
40 CFR 420.62/63	5,643	0.0000939	0.0000313	0.000141	0.0000469
No. 1 Continuous Casting		1.06	0.35	1.59	0.53
40 CFR 420.64	16,824	0.0000939	0.0000313	0.000141	0.0000469
No. 2 Continuous Casting		3.16	1.05	4.74	1.58
40 CFR 420.72(c)(2)	2,797				
160"/210" Plate Mill					
Total		**26.1**	**8.7**	**39.1**	**13.1**

Technology Based Effluent Limiations Internal Monitoring 604

US Steel Gary Works

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS Max	TSS Ave	Oil and Grease Max	Oil and Grease Ave	Hex. Chromium Max	Hex. Chromium Ave	Lead Max	Lead Ave	Zinc Max	Zinc Ave	Naphthalene Max	TCE Max
40 CFR 92/93(b)(2) + (b)(4)	2,273	0.0818	0.035	0.035	0.0117			0.000526	0.000175	0.000701	0.000234		
80" South Pickle Line		372	159	159	53			2.39	0.80	3.19	1.06		
Fume Scrubber	1	12.61	5.40	5.40	1.81			0.08	0.03	0.11	0.04		
		12.61	5.40	5.40	1.81			0.08	0.03	0.11	0.04		
40 CFR 92/93(b)(2) + (b)(4)	7,730	0.0818	0.035	0.035	0.0117			0.000526	0.000175	0.000701	0.000234		
84" North Pickle Line		1,265	541	541	181			8.13196	2.7055	10.83746	3.61764		
Fume Scrubber	1	12.61	5.40	5.40	1.81			0.08	0.03	0.11	0.04		
		12.61	5.40	5.40	1.81			0.08	0.03	0.11	0.04		
40 CFR 420.92/93(b)(2)	884	0.0818	0.035	0.035	0.0117			0.000526	0.000175	0.000701	0.000234		
No. 1 Electrogalvanizing Line		144.6	61.88	61.88	20.69			0.93	0.31	1.24	0.41		
40 CFR 420.92/93(a)(3)	391	0.0526	0.0225	0.0225	0.00751			0.000338	0.000113	0.000451	0.00015		
No. 1 Tin free Steel Line		41.1	17.60	17.60	5.87			0.26	0.09	0.35	0.12		
40 CFR 420.92/93(a)(3)	489	0.0526	0.0225	0.0225	0.00751			0.000338	0.000113	0.000451	0.00015		
No.5 Electrolytic Tinning Line		51.4	22.0	22.0	7.3			0.3	0.1	0.4	0.1		
40 CFR 420.92/93(a)(3)	1,109	0.0526	0.0225	0.0225	0.00751			0.000338	0.000113	0.000451	0.00015		
No.6 Electrolytic Tinning Line		116.7	49.9	49.9	16.7			0.7	0.3	1.0	0.3		
40 CFR 420.102/103(a)(5)	2,059	0.100	0.0501	0.0417	0.0167			0.000751	0.000250	0.000501	0.000167	0.000167	0.000250
No.2 Stand Temper Mill		411.8	206.3	171.7	68.8			3.1	1.0	2.1	0.7	0.7	1.0
40 CFR 420.102/103(a)(4)	3,977	0.0225	0.0113	0.00939	0.00376			0.000169	0.0000563	0.000113	0.0000376	0.0000376	0.0000563
80" Temper Mill		179.0	89.9	74.7	29.9			1.3	0.4	0.9	0.3	0.3	0.4
40 CFR 420.102/103(a)(4)	1,413	0.0225	0.0113	0.00939	0.00376			0.000169	0.0000563	0.000113	0.0000376	0.0000376	0.0000563
80" Recoil line		63.6	31.9	26.5	10.6			0.5	0.2	0.3	0.1	0.1	0.2
40 CFR 420.102/103(a)(2)	7,634	0.00626	0.00313	0.00261	0.00104			0.0000469	0.0000156	0.0000313	0.0000104	0.0000104	0.0000156
No.5 Stand Cold Reduction Mill		95.6	47.8	39.8	15.9			0.7	0.2	0.5	0.2	0.2	0.2
40 CFR 420.102/103(a)(2)	2,425	0.00626	0.00313	0.00261	0.00104			0.0000469	0.0000156	0.0000313	0.0000104	0.0000104	0.0000156
No.6 Stand Cold Reduction Mill		30.4	15.2	12.7	5.0			0.2	0.1	0.2	0.1	0.1	0.1
40 CFR 420.102/103(a)(2)	1,376	0.00626	0.00313	0.00261	0.00104			0.0000469	0.0000156	0.0000313	0.0000104	0.0000104	0.0000156
48" Temper Mill		17.2	8.6	7.2	2.9			0.1	0.0	0.1	0.0	0.0	0.0
40 CFR 420.102/103(a)(5)	771	0.100	0.0501	0.0417	0.0167			0.000751	0.000250	0.000501	0.000167	0.000167	0.000250
Tin Double Cold Reduction Mill		154.2	77.3	64.3	25.8			1.2	0.4	0.8	0.3	0.3	0.4
40 CFR 420.102/103(a)(2)	3,210	0.00626	0.00313	0.00261	0.00104			0.0000469	0.0000156	0.0000313	0.0000104	0.0000104	0.0000156
84" Temper		40.2	20.1	16.8	6.7			0.3	0.1	0.2	0.1	0.1	0.1

Technology Based Effluent Limiations Internal Monitoring 604

US Steel Gary Works

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS Max	TSS Ave	Oil and Grease Max	Oil and Grease Ave	Hex. Chromium Max	Hex. Chromium Ave	Lead Max	Lead Ave	Zinc Max	Zinc Ave	Naphthalene Max	TCE Max
40 CFR 420.102/103(a)(2)	994	0.00626	0.00313	0.00261	0.00104			0.0000469	0.0000156	0.0000313	0.0000104	0.0000104	0.0000156
Hot Coil Prep Line		12.4	6.2	5.2	2.1			0.1	0.0	0.1	0.0	0.0	0.0
40 CFR 420.112(b)	884	0.102	0.0438	0.0438	0.0146								
No. 1 Electrogalvanizing Line		180.3	77.4	77.4	25.8								
40 CFR 420.112(b)	391	0.102	0.0438	0.0438	0.0146								
No. 1 Tin free Steel Line		79.8	34.3	34.3	11.4								
40 CFR 420.112(b)	1,238	0.102	0.0438	0.0438	0.0146								
No.2 Continuous Anneal Line		252.6	108.4	108.4	36.1								
40 CFR 420.112(b)	489	0.102	0.0438	0.0438	0.0146								
No.5 Electrolytic Tinning Line		99.8	42.8	42.8	14.3								
40 CFR 420.112(b)	1,109	0.102	0.0438	0.0438	0.0146								
No.6 Electrolytic Tinning Line		226.2	97.1	97.1	32.4								
40 CFR 420.112(b)	1,110	0.102	0.0438	0.0438	0.0146								
No.6 Galvanizing Line		226.4	97.2	97.2	32.4								
40 CFR 420.112(b)	811	0.102	0.0438	0.0438	0.0146								
No.7 Cleaning Line		165.4	71.0	71.0	23.7								
40 CFR 420.112(b)	341	0.102	0.0438	0.0438	0.0146								
No.8 Galvanizing Line		69.6	29.9	29.9	10.0								
40 CFR 420.122/123(a)(1)+(c)	1,110	0.175	0.0751	0.0751	0.025	0.00015	0.0000501	0.00113	0.000376	0.0015	0.0005		
No.6 Galvanizing Line		388.5	166.7	166.7	55.5	0.3	0.1	2.5	0.8	3.3	1.1		
Fume Scrubbers	1	84.0	35.9	35.9	12.0	0.011	0.004	0.081	0.027	0.108	0.036		
		84.00	35.93	35.93	12.02	0.01	0.00	0.08	0.03	0.11	0.04		
40 CFR 420.122/123(a)(1)+(c)	341	0.175	0.0751	0.0751	0.025	0.00015	0.0000501	0.00113	0.000376	0.0015	0.0005		
No.8 Galvanizing Line		119.4	51.2	51.2	17.1	0.1	0.0	0.8	0.3	1.0	0.3		
Fume Scrubbers	1	84.0	35.9	35.9	12.0	0.011	0.004	0.081	0.027	0.108	0.036		
		84.00	35.93	35.93	12.02	0.01	0.00	0.08	0.03	0.11	0.04		
BPJ													
84" HSM Basement	1.4	40.00	15.00	10.00									
		467	175	117	39								
Metal Finishing													
40 CFR 433.13/14(a)													
No.1 Electrogalvanizing Line													
No.1 Tin-Free Steel Line													
No.5 Electolytic Tinning Line													

Technology Based Effluent Limiations Internal Monitoring 604

US Steel Gary Works

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS Max	TSS Ave	Oil and Grease Max	Oil and Grease Ave	Hex. Chromium Max	Hex. Chromium Ave	Lead Max	Lead Ave	Zinc Max	Zinc Ave	Naphthalene Max	TCE Max
No.6 Electrolytic Tinning Line													
Total Flow mgd	3.40	60	31	52	26			0.69	0.43	2.61	1.48		
		1,702.38	879.56	1,475.40	737.70			19.58	12.20	74.05	41.99		
Total		**7,166**	**3,269**	**3,722**	**1,515**	**0.46**	**0.15**	**43.52**	**20.17**	**100.93**	**50.96**	**1.68**	**2.51**

		Cadmium Max	Cadmium Ave	Chromium Max	Chromium Ave	Copper Max	Copper Ave	Nickel Max	Nickel Ave	Silver Max	Silver Ave	Total Cyanide Max	Total Cyanide Ave	TTO Max
Metal Finishing														
40 CFR 433.13/14(a)														
Total Flow mgd	3.40	0.69	0.26	2.77	1.71	3.38	2.07	3.98	2.38	0.43	0.24	1.2	0.65	2.13
		19.58	7.38	78.59	48.52	95.90	58.73	112.92	67.53	12.20	6.81	34.05	18.44	60.43
Total		**19.58**	**7.38**	**78.59**	**48.52**	**95.90**	**58.73**	**112.92**	**67.53**	**12.20**	**6.81**	**34.05**	**18.44**	**60.43**

Technology Based Effluent Limiations

US Steel Gary Works

Internal Monitoring Station 605

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS Max	TSS Ave	Oil and Grease Max	Oil and Grease Ave
40 CFR 420.72(c)(1)	18,432	0.427	0.16	0.107	--
84" HSM		15,741	5,898	3,944	
Total		**15,741**	**5,898**	**3,944**	-
Current Limits		**2,175**	**725**	**1,450**	

Technology Based Effluent Limiations

US Steel Gary Works

Outfalls 028/030

Effluent Limitation (lbs/day)

Guideline Process	Production (tons/day)	TSS Max	TSS Ave	Oil and Grease Max	Oil and Grease Ave
40 CFR 420.42/43	11,112	0.0687	0.0229		
#1 BOP		1,527	509	-	-
40 CFR 420.42/43	14,003	0.0687	0.0229		
Q-BOP (#2 Q-BOP)		1,924	641	-	-
40 CFR 420.54	5,922	0.0073	0.00261		
Vacuum Degassing		86.46	30.91	-	-
40 CFR 420.62/63	5,643	0.078	0.026	0.0234	0.0078
No. 1 Continuous Casting		880.31	293.44	264.09	88.03
40 CFR 420.64	16,824	0.0073	0.00261	0.00313	0.00104
No. 2 Continuous Casting		245.63	87.82	105.32	34.99
40 CFR 420.72(c)(2)	2,797	0.227	0.0851	0.0568	--
160"/210" Plate Mill		1,269.84	476.05	317.74	
Total		**5,933**	**2,038**	**687.1**	**123.0**

TABLE 1 **REASONABLE POTENTIAL TO EXCEED** **USS OUTFALL 005 (61.0668 mgd)**

PARAMETER	MONTH AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Monthly Average@	Daily Maximum	Monthly Average	Daily Maximum
Manganese (mg/l) #	0.16	36	1.1	1.2	**0.19**	0.39	139	1.5	0.8	**0.31**	**0.52**	**1.21**	No	No
Mercury (ng/l) $	1.86	2	0.6	3.8	**7.07**	1.86	2	0.6	3.8	**7.07**	**1.30**	**3.20**	Yes	Yes
Selenium (ug/l) #	11.11	36	0.6	1.1	**12.22**	13.60	367	0.6	0.9	**12.24**	**4.10**	**8.20**	Yes	Yes
Zinc (ug/l) *	15	3	0.6	3.0	**45**	30	14	0.5	1.4	**42**	**50**	**116**	No	No
Benzene (ug/l) #,%	12	36	0.7	1.2	**14**	38	394	1.0	0.8	**30**	**15**	**40**	No	No
Benzo(a)anthracene (ug/l) *	0.068	2	0.6	3.8	**0.258**	0.068	2	0.6	3.8	**0.258**	**4.700**	**4.700**	No	No
Benzo(a)pyrene (ug/l) #,%	0.345	36	0.7	1.2	**0.414**	1.900	367	1.3	0.8	**1.520**	**0.091**	**0.220**	Yes	Yes
Naphthalene (ug/l) *	1.80	2	0.6	3.8	**6.84**	1.80	11	0.05	1.0	**1.80**	**18.40**	**42.80**	No	No
TRC (ug/l) #	30	16	0.05	1.0	**30**	40	435	0.2	1.0	**40**	**8.0**	**18.0**	Yes	Yes
Cyanide, Free (ug/l) #														
Season I &	5.46	36	0.2	1.0	**5.46**	16.15	415	0.4	0.9	**14.54**	**7.60**	**18.00**	No	No
Season II &	5.46	36	0.2	1.0	**5.46**	16.15	415	0.4	0.9	**14.54**	**6.00**	**13.00**	No	Yes
Chloride (mg/l) #	80	36	0.3	1.1	**88**	170	141	0.4	0.9	**153**	**104**	**242**	No	No
Fluoride (mg/l) #	0.93	36	0.4	1.1	**1.02**	1.20	367	0.4	0.9	**1.08**	**1.13**	**2.63**	No	No
Ammonia-N (mg/l) # :														
Summer +	0.11	9	0.6	1.8	**0.20**	0.47	90	0.6	0.9	**0.42**	**0.42**	**0.98**	No	No
Winter +	0.39	27	0.5	1.2	**0.47**	0.75	323	0.6	0.9	**0.68**	**0.47**	**1.09**	No	No

* Effluent data are obtained from Form 2C (with additioanl detailed data provided by USS when needed), and the July 1999 and April 2000 TMDL studies.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001 by USS.

USS's MRO data from January 1999 through December 2001, excluding outliers.

& Season 1 is from April 1 through September 30, and Season 2 is from October 1 through March 31.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the applicable samples monitored in a month.

% PELs are results of Additivity WLAs, 4.75% benzene and 95.25 benzo(a)pyrene, as these substances are probable or known carcinogens.

7/2/2007

TABLE 2 **REASONABLE POTENTIAL TO EXCEED** **USS OUTFALL 005 and 010 (62.4876 mgd)**

PARAMETER	MONTH AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Monthly Average@	Daily Maximum	Monthly Average	Daily Maximum
Manganese (mg/l) #	0.16	36	1.1	1.2	**0.19**	0.39	139	1.5	0.8	**0.31**	**0.52**	**1.21**	No	No
Mercury (ng/l) $	1.86	2	0.6	3.8	**7.07**	1.86	2	0.6	3.8	**7.07**	**1.30**	**3.20**	Yes	Yes
Selenium (ug/l) #	11.11	36	0.6	1.1	**12.22**	13.60	367	0.6	0.9	**12.24**	**4.10**	**8.20**	Yes	Yes
Zinc (ug/l) *	15	3	0.6	3.0	**45**	30	14	0.5	1.4	**42**	**50**	**116**	No	No
Benzene (ug/l) #,%	12	36	0.7	1.2	**14**	38	394	1.0	0.8	**30**	**15**	**40**	No	No
Benzo(a)anthracene (ug/l) *	0.068	2	0.6	3.8	**0.258**	0.068	2	0.6	3.8	**0.258**	**4.700**	**4.700**	No	No
Benzo(a)pyrene (ug/l) #,%	0.345	36	0.7	1.2	**0.414**	1.900	367	1.3	0.8	**1.520**	**0.091**	**0.220**	Yes	Yes
Naphthalene (ug/l) *	1.80	2	0.6	3.8	**6.84**	1.80	11	0.05	1.0	**1.80**	**18.40**	**42.80**	No	No
TRC (ug/l) #	30	16	0.05	1.0	**30**	40	435	0.2	1.0	**40**	**8.0**	**18.0**	Yes	Yes
Cyanide, Free (ug/l) #														
Season I &	5.46	36	0.2	1.0	**5.46**	16.15	415	0.4	0.9	**14.54**	**7.60**	**18.00**	No	No
Season II &	5.46	36	0.2	1.0	**5.46**	16.15	415	0.4	0.9	**14.54**	**6.00**	**13.00**	No	Yes
Chloride (mg/l) #	80	36	0.3	1.1	**88**	170	141	0.4	0.9	**153**	**104**	**242**	No	No
Fluoride (mg/l) #	0.93	36	0.4	1.1	**1.02**	1.20	367	0.4	0.9	**1.08**	**1.13**	**2.63**	No	No
Ammonia-N (mg/l) # :														
Summer +	0.11	9	0.6	1.8	**0.20**	0.47	90	0.6	0.9	**0.42**	**0.42**	**0.98**	No	No
Winter +	0.39	27	0.5	1.2	**0.47**	0.75	323	0.6	0.9	**0.68**	**0.47**	**1.09**	No	No

* Effluent data are obtained from Form 2C (with additioanl detailed data provided by USS when needed), and the July 1999 and April 2000 TMDL studies.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001 by USS.

USS's MRO data from January 1999 through December 2001, excluding outliers.

& Season 1 is from April 1 through September 30, and Season 2 is from October 1 through March 31.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the appropriate samples monitored in a month.

% PELs are results of Additivity WLAs, 4.75% benzene and 95.25 benzo(a)pyrene, as these substances are probable or known carcinogens.

7/2/2007

TABLE 3 **REASONABLE POTENTIAL TO EXCEED** **USS OUTFALL 010 (1.4208 mgd)**

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average@**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
Lead (ug/l) **	0.70	2	0.6	3.8	**2.66**	1.10	8	0.6	1.9	**2.09**	**81.55**	**189.71**	No	No
Manganese (mg/l) #	0.04	36	0.5	1.1	**0.04**	0.08	116	0.7	0.9	**0.07**	**0.52**	**1.21**	No	No
Mercury (ng/l) $	1.52	2	0.6	3.8	**5.78**	1.52	2	0.6	3.8	**5.78**	**1.30**	**3.20**	Yes	Yes
Selenium (ug/l) #	2.48	36	0.3	1.1	**2.73**	6.80	363	0.4	0.9	**6.12**	**3.53**	**8.21**	No	No
Zinc (ug/l) *	24	4	0.6	2.6	**62**	39	14	0.8	1.7	**66**	**93**	**216**	No	No
Benzene (ug/l) #,%	16	36	1.1	1.2	**19**	55	363	2.0	0.7	**39**	**69**	**161**	No	No
Benzo(a)pyrene (ug/l) #,%	0.419	36	1.1	1.2	**0.503**	2.600	363	2.0	0.7	**1.820**	**0.095**	**0.230**	Yes	Yes
Naphthalene (ug/l) *	1.00	9	0.6	1.8	**1.80**	1.80	21	0.6	1.4	**2.52**	**18.40**	**42.80**	No	No
TRC (ug/l) #	30	16	0.1	1.1	**33**	40	435	0.2	1.0	**40**	**8.0**	**18.0**	Yes	Yes
Cyanide, Free (ug/l) #														
Season 1 &	4.19	36	0.1	1.0	**4.19**	8.90	363	0.3	0.9	**8.01**	**7.60**	**17.68**	No	No
Season 2 &	4.19	36	0.1	1.0	**4.19**	8.90	363	0.3	0.9	**8.01**	**6.00**	**13.96**	No	No
Chloride (mg/l) #	22	36	0.1	1.0	**22**	34	120	0.2	1.0	**34**	**104**	**242**	No	No
Fluoride (mg/l) #	0.24	36	0.2	1.0	**0.24**	0.30	363	0.3	0.9	**0.27**	**0.28**	**0.65**	No	No
Ammonia-N (mg/l) # :														
Summer +	0.15	9	0.6	1.8	**0.27**	0.42	90	0.8	0.9	**0.38**	**0.42**	**0.98**	No	No
Winter +	0.31	27	0.5	1.2	**0.37**	1.00	273	0.7	0.9	**0.90**	**0.47**	**1.09**	No	No

* Effluent data are obtained from Form 2C (with additioanl detailed data provided by USS when needed), and the July 1999 and April 2000 TMDL studies.

** Effluent data are obtained from the USS's 6-week monitoring program in 1998, and the July 1999 and April 2000 TMDL studies.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001 by USS.

USS's MRO data from January 1999 through December 2001, excluding outliers.

& Season 1 is from April 1 through Septem 30, and Season 2 is from October 1 through March 31.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on appropriate number of samples monitored in a month.

% PELs are results of Additivity WLAs, 0.75% benzene and 99.25% benzo(a)pyrene, as these substances are probable or known carcinogens.

3/7/2007

TABLE 4 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 015 (1.6542 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average@**	**Daily Maximum**	Monthly Average	Daily Maximum
Lead (ug/l) #	5.00	36	0.05	1.0	**5.00**	10.00	470	0.05	1.0	**10.00**	**5.28**	**12.28**	No	No
Mercury (ng/l) $	1.61	2	0.6	3.8	**6.12**	1.61	2	0.6	3.8	**6.12**	**1.30**	**3.20**	**Yes**	**Yes**
Zinc (ug/l) #	56	36	0.5	1.1	**62**	177	469	1.1	0.8	**142**	**77**	**179**	No	No
TRC (ug/l) #	25	16	0.1	1.1	**28**	40	435	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**
Cyanide, Free (ug/l) **	0.70	36	0.1	1.0	**0.70**	1.50	480	0.2	1.0	**1.50**	**3.67**	**8.54**	No	No
Chloride (mg/l) *	32	2	0.6	3.8	**122**	50	8	0.6	1.9	**95**	**157**	**365**	No	No
Ammonia-N (mg/l) # :														
Summer +	0.26	9	0.6	1.8	**0.47**	0.89	276	0.8	0.8	**0.71**	**0.75**	**1.74**	No	No
Winter +	0.42	27	0.3	1.1	**0.46**	0.94	820	0.6	0.9	**0.85**	**0.47**	**1.09**	No	No

* Effluent data are obtained from the USS's 6-week sampling program in 1998, and the July 1999 and April 2000 TMDL studies.

** No free cyanide data are available. However, total cyanide data are available from MRO and free cyanide is assumed to be 10% of total cyanide.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001.

USS's MRO data from January 1999 through December 2001, excluding outliers.

\+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the appropriate samples monitored in a month.

3/7/2007

TABLE 5 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 017 (0.0637 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average@**	**Daily Maximum**	Monthly Average	Daily Maximum
Lead (ug/l) #	50.00	36	0.05	1.0	**50.00**	52.00	470	0.05	1.0	**52.00**	**52.83**	**122.90**	No	No
Mercury (ng/l) $	0.41	1	0.6	6.2	**2.54**	0.41	1	0.6	6.2	**2.54**	**1.30**	**3.20**	[1]	No
Zinc (ug/l) #	71	36	0.5	1.1	**78**	228	464	1.1	0.8	**182**	**91**	**212**	No	No
TRC (ug/l) #	26	15	0.1	1.1	**29**	40	444	0.2	1.0	**40**	**8.0**	**18.0**	[1]	[1]
Cyanide, Free (ug/l) **	0.90	36	0.1	1.0	**0.90**	3.90	480	0.4	0.9	**3.51**	**3.67**	**8.54**	No	No
Chloride (mg/l) *	19	2	0.6	3.8	**72**	21	6	0.6	2.1	**44**	**157**	**365**	No	No
Ammonia-N (mg/l) # :														
Summer +	0.08	9	0.6	1.8	**0.14**	0.72	275	1.9	0.7	**0.50**	**0.75**	**1.74**	No	No
Winter +	0.27	27	0.7	1.2	**0.32**	0.66	820	1.0	0.8	**0.53**	**0.47**	**1.09**	No	No

* Effluent data are obtained from the USS's 6-week sampling program in 1998.

** No free cyanide data are available. However, total cyanide data are available from MRO and free cyanide is assumed to be 10% of total cyanide.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001.

USS's MRO data from January 1999 through December 2001, excluding outliers.

\+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the appropriate samples monitored in a month.

[1] US Steel has recently removed all process and non-process wastewaters. This outfall is now consists now of only stormwater.

3/7/2007

TABLE 6 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 018 (49.8500 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average@**	**Daily Maximum**	Monthly Average	Daily Maximum
Copper (ug/l) *	35.30	2	0.6	3.8	**134.14**	67.00	8	0.6	1.9	**127.30**	**13.00**	**27.00**	**Yes**	**Yes**
Mercury (ng/l) $	1.56	2	0.6	3.8	**5.93**	1.56	2	0.6	3.8	**5.93**	**1.30**	**3.20**	**Yes**	**Yes**
TRC (ug/l) #	25	15	0.05	1.0	**25**	40	445	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**
Ammonia-N (mg/l) # :														
Summer +	0.075	9	0.6	1.8	**0.135**	0.120	276	0.4	0.9	**0.108**	**0.140**	**0.326**	**No**	**No**
Winter +	0.222	27	0.4	1.1	**0.244**	0.370	820	0.5	0.9	**0.333**	**0.250**	**0.582**	**No**	**No**

* Effluent data are obtained from Form 2C, USS's 6-week sampling program in 1998, and the July 1999 and April 2000 TMDL studies.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001.

USS's MRO data from January 1999 through December 2001.

\+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the appropriate samples monitored in a month.

3/7/2007

TABLE 7 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 019 (51.7500 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average@**	**Daily Maximum**	Monthly Average	Daily Maximum
Mercury (ng/l) $	1.91	2	0.6	3.8	**7.26**	1.91	2	0.6	3.8	**7.26**	**1.30**	**3.20**	**Yes**	**Yes**
TRC (ug/l) #	25	15	0.05	1.0	**25**	40	444	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**
Ammonia-N (mg/l) # :														
Summer +	0.055	9	0.6	1.8	**0.099**	0.120	276	0.5	0.9	**0.108**	**0.140**	**0.326**	**No**	**No**
Winter +	0.178	27	0.5	1.2	**0.214**	0.330	820	0.6	0.9	**0.297**	**0.250**	**0.582**	**No**	**No**

$ Effluent data are obtained in 1999 (same as TMDL) and 2001.

USS's MRO data from January 1999 through December 2001.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on appropriate samples monitored in a month.

3/7/2007

TABLE 8 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 020 (64.3833 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average @**	**Daily Maximum**	Monthly Average	Daily Maximum
Lead (ug/l) #	7.00	35	0.6	1.0	**7.00**	10.00	140	0.6	1.0	**10.00**	**13.00**	**26.00**	No	No
Mercury (ng/l) $	6.51	2	0.6	3.8	**24.74**	6.51	2	0.6	3.8	**24.74**	**1.30**	**3.20**	**Yes**	**Yes**
Zinc (ug/l) #	28	36	0.4	1.1	**31**	88	155	0.8	0.8	**70**	**53**	**123**	No	No
TRC (ug/l) #	23	15	0.05	1.0	**23**	40	440	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**
Ammonia-N (mg/l) %														
Summer +	0.15	4	0.6	2.6	**0.39**	0.15	4	0.6	2.6	**0.39**	**0.42**	**0.98**	No	No
Winter +	0.24	11	0.2	1.2	**0.29**	0.24	11	0.2	1.2	**0.29**	**0.30**	**0.70**	No	No

$ Effluent data are obtained in 1999 (same as TMDL) and 2001 by USS.

USS's MRO data from January 2004 through November 2006.

% Effluent data are obtained from Form 2C, November 1997 thru November 1998 detailed data, and the July 1999 and April 2000 TMDL studies.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on appropriate samples monitored in a month.

3/7/2007

TABLE 9 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 600 (Combined Outfall 028 and Outfall 030)

PARAMETER	Outfall 028 (11.1667 mgd) Monthly Average					Outfall 028 (11.1667 mgd) Daily maximum					Outfall 030 (20.7042 mgd) Monthly Average					Outfall 030 (20.7042 mgd) Daily Maximum					OUTFALL 600 (31.8709 mgd)					
																					PEQ		PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Mon. Avg.	Daily Max.	**Mon. Avg.@**	**Daily Max.**	Mon. Avg.	Daily Max.
Lead (ug/l) #	7.00	36	0.05	1.0	7.00	34.00	782	0.3	0.9	30.60	6.00	36	0.05	1.0	6.00	13.00	782	0.1	1.0	13.00	6.35	19.17	**13.43**	**31.24**	No	No
Mercury (ng/l) $	0.88	2	0.6	3.8	3.34	0.88	2	0.6	3.8	3.34	0.95	2	0.6	3.8	3.61	0.95	2	0.6	3.8	3.61	3.52	3.52	**1.30**	**3.20**	**Yes**	**Yes**
Zinc (ug/l) #	54	36	0.4	1.1	59	162	781	0.6	0.9	146	51	36	0.4	1.1	56	114	782	0.7	0.9	103	57	118	**79**	**184**	No	No
TRC (ug/l) #	29	15	0.10	1.1	32	40	445	0.2	1.0	40	28	15	0.05	1.0	28	40	445	0.2	1.0	40	29	40	**8.0**	**18.0**	**Yes**	**Yes**
Chloride (mg/l) *	40	2	0.6	3.8	152	70	8	0.6	1.9	133	38	2	0.6	3.8	144	49	8	0.6	1.9	93	147	107	**148**	**344**	No	No
Fluoride (mg/l) **	2.93	6	0.6	2.1	6.15	3.07	18	0.2	1.1	3.38	3.24	6	0.6	2.1	6.80	3.56	18	0.2	1.1	3.92	6.58	3.73	**6.90**	**14.00**	**No**	No
Ammonia-N (mg/l) % :																										
Summer +	0.18	4	0.6	2.6	0.47	0.18	4	0.6	2.6	0.47	0.07	1	0.6	6.2	0.43	0.09	6	0.6	2.1	0.19	0.45	0.29	**0.49**	**1.14**	No	No
Winter +	0.11	11	0.5	1.6	0.18	0.11	11	0.5	1.6	0.18	0.21	2	0.6	3.8	0.80	0.32	17	0.9	1.7	0.54	0.58	0.42	**0.60**	**1.40**	No	No

* Effluent data are obtained from Form 2C, USS's 6-week sampling program in 1998, and the July 1999 and April 2000 TMDL studies.

** Effluent data are obtained from Form 2C, USS's 6-week sampling program in 1998, the July 1999 and April 2000 TMDL studies, and USS's additional sampling in February and March 2002, and March and April 2003.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001.

USS's MRO data from January 1999 through December 2001, excluding outliers.

+ Summer months are July through September, and Winter months are October through June.

% Effluent data are obtained from Form 2C, 1996 thru 1998 detailed data, and the July 1999 and April 2000 TMDL studies.

@ Monthly average PELs were calculated based on the appropriate number of samples monitored in a month.

3/7/2007

TABLE 10 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 034 (28.4583 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average @**	**Daily Maximum**	Monthly Average	Daily Maximum
Chromium(III) (ug/l) #	30	36	0.3	1.1	**33**	166	313	0.9	0.8	**133**	**281**	**655**	No	No
Lead (ug/l) #	5.00	36	0.05	1.0	**5.00**	8.00	313	0.05	1.0	**8.00**	**5.38**	**12.52**	No	No
Mercury (ng/l) $	0.80	2	0.6	3.8	**3.04**	0.80	2	0.6	3.8	**3.04**	**1.30**	**3.20**	Yes	No
Zinc (ug/l) #	66	36	0.5	1.1	**73**	265	313	0.9	0.8	**212**	**117**	**271**	No	No
Benzo(a)anthracene (ug/l) **	0.190	3	0.6	3.0	**0.570**	0.190	3	0.6	3.0	**0.570**	**4.700**	**4.700**	No	No
Benzo(a)pyrene (ug/l) **	0.050	5	0.6	2.3	**0.115**	0.090	18	0.5	1.3	**0.117**	**0.289**	**0.672**	No	No
Naphthalene (ug/l) #	2	36	0.2	1.0	**2**	2	313	0.2	1.0	**2**	**59**	**138**	No	No
TRC (ug/l) #	35	17	0.1	1.1	**39**	40	477	0.2	1.0	**40**	**8.0**	**18.0**	Yes	Yes
Chloride (mg/l) *	59	2	0.6	3.8	**224**	83	8	0.6	1.9	**158**	**230**	**535**	No	No
5-day CBOD (mg/l) # 1:														
Summer +	6.22	9	0.6	1.8	**11.19**	11.55	124	0.4	0.9	**10.40**	**5.62**	**11.24**	Yes	No
Winter +	17.76	27	0.2	1.1	**19.54**	37.00	274	0.4	0.9	**33.30**	**19.12**	**38.24**	Yes	No
Ammonia-N (mg/l) # :														
Summer +	0.026	9	0.6	1.8	**0.047**	0.090	79	0.9	0.9	**0.081**	**0.070**	**0.163**	No	No
Winter +	0.051	27	0.5	1.2	**0.061**	0.110	234	0.9	0.8	**0.088**	**0.080**	**0.186**	No	No

* Effluent data are obtained from Form 2C, the USS's 6-week monitoring program in 1998, and the July 1999 and April 2000 TMDL studies.

** Effluent data are obtained from Form 2C, the July 1999 TMDL study, and 1996 to 1998 additional data for benzo(a)pyrene.

$ Effluent data are obtained in 1999 (same as TMDL) and 2001 by USS.

USS's MRO data from January 1999 through December 2001.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the appropriate number of samples monitored in a month.

7/2/2007

TABLE 11 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 035 (176.3 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average @**	**Daily Maximum**	Monthly Average	Daily Maximum
TRC (ug/l) #	30	15	0.05	1.0	**30**	40	444	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**
Ammonia-N (mg/l) # :														
Summer +	0.030	9	0.6	1.8	**0.054**	0.150	276	0.1	1.0	**0.150**	**0.720**	**1.674**	No	No
Winter +	0.210	27	1.3	1.4	**0.294**	1.000	820	0.1	1.0	**1.000**	**0.732**	**1.703**	No	No

USS's MRO data from January 1999 through December 2001.

+ Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on 10 samples monitored in a month.

3/7/2007

TABLE 12 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 037 (3 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average @**	**Daily Maximum**	Monthly Average	Daily Maximum
TRC (ug/l) #	30	18	0.05	1.0	**30**	40	459	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**
Zinc (ug/l) #	22	36	0.2	1.0	**22**	62	155	0.2	1.0	**62**	**114**	**265**	No	No

USS's MRO data from January 1999 through December 2001.

@ Monthly average PELs were calculated based on 10 samples monitored in a month.

3/7/2007

TABLE 13 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 039 (55 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average @**	**Daily Maximum**	Monthly Average	Daily Maximum
TRC (ug/l) #	20	18	0.05	1.0	**20**	40	459	0.2	1.0	**40**	**8.0**	**18.0**	**Yes**	**Yes**

USS's MRO data from January 1999 through December 2001.

@ Monthly average PELs were calculated based on 10 samples monitored in a month.

3/7/2007

TABLE 14 REASONABLE POTENTIAL TO EXCEED USS OUTFALL 040 (0.2 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	Maximum Effluent Value	Count	C.V.	M.F.	**PEQ**	**Monthly Average @**	**Daily Maximum**	Monthly Average	Daily Maximum
Chromium(III) (ug/l) *	26.50	2	0.6	3.8	**100.70**	50	6	0.6	2.1	**105.00**	**114**	**197**	No	No
Copper (ug/l) *	15.50	2	0.6	3.8	**58.90**	21.00	6	0.6	2.1	**44.10**	**13.20**	**21.00**	Yes	Yes
Lead (ug/l) *	2.25	2	0.6	3.8	**8.55**	3.90	6	0.6	2.1	**8.19**	**11.00**	**18.00**	No	No
Nickel (ug/l) *	15.45	2	0.6	3.8	**58.71**	25	6	0.6	2.1	**52.50**	**70**	**121**	No	No
Zinc (ug/l) #	9330	36	2.0	1.4	**13062**	9330	36	2.0	1.4	**13062**	**84**	**170**	Yes	Yes
Fluoride (mg/l) *	0.36	2	0.6	3.8	**1.35**	0.41	5	0.6	2.3	**0.9**	**2.4**	**5.6**	No	No
TRC (ug/l) #	30	18	0.2	1.1	**33**	40	459	0.2	1.0	**40**	**8**	**18**	Yes	Yes
Chloride (mg/l) *	43	2	0.6	3.8	**163**	48	6	0.6	2.1	**101**	**218**	**507**	No	No
Ammonia-N (mg/l) + :														
Summer +	0.16	1	0.6	6.2	**0.99**	0.16	1	0.6	6.2	**0.99**	**0.49**	**0.81**	Yes	Yes
Winter +	0.16	1	0.6	6.2	**0.99**	0.16	1	0.6	6.2	**0.99**	**0.22**	**0.36**	Yes	Yes

* Effluent data are obtained from Form 2C, and/or the USS's 6-week monitoring program in 1998.

\# USS's MRO data from January 1999 through December 2001.

\+ Only one value in Form 2C, so used in both summer and winter months. Summer months are July through September, and Winter months are October through June.

@ Monthly average PELs were calculated based on the appropriate samples monitored in a month.

3/7/2007

TABLE 15 REASONABLE POTENTIAL TO EXCEED FOR WHOLE EFFLUENT TOXICITY

USS Outfall 005

Parameter	Maximum Effluent Value @	Count	C.V.	M.F.	**PEQ**	**WLA**	PEQ>WLA	**WQBEL**	
								Monthly* Average	**Daily Maximum**
Acute WET (TUa)	0.0	10	0	1.0	0.0	1.0	NO	Not Required	
Chronic WET (TUc)	8.0	10	0.99	2.3	18.4	1.0	**YES**	1.0	------

USS Outfall 010

Parameter	Maximum Effluent Value #	Count	C.V.	M.F.	**PEQ**	**WLA**	PEQ>WLA	**WQBEL**	
								Monthly Average	**Daily Maximum**
Acute WET (TUa)	0.0	9	0.6	1.8	0.0	1.0	NO	Not Required	
Chronic WET (TUc)	4.0	9	0.6	1.8	7.2	11.8	NO	Not Required	

USS Outfall 028/030

Parameter	Maximum Effluent Value +	Count	C.V.	M.F.	**PEQ**	**WLA**	PEQ>WLA	**WQBEL**	
								Monthly Average	**Daily Maximum**
Acute WET (TUa)	0.0	8	0.6	1.9	0.0	1.0	NO	Not Required	
Chronic WET (TUc)	2.0	8	0.6	1.9	3.8	2.8	**[1]**	2.8	------

USS Outfall 034

Parameter	Maximum Effluent Value #	Count	C.V.	M.F.	**PEQ**	**WLA**	PEQ>WLA	**WQBEL**	
								Monthly Average	**Daily Maximum**
Acute WET (TUa)	0.0	5	0.6	2.3	0.0	1.0	NO	Not Required	
Chronic WET (TUc)	7.7	5	0.6	2.3	17.7	3.3	**YES**	3.1	-------

@ September 1999 to December 2000 WET data provided by the Advent Group in April 2002.
# Effluent data are obtained from Form 2Cs in the 1999 NPDES Permit Application.
+ Effluent data (Nov. 1994 thru August 1996) are obtained from Form 2Cs and IDEM's PCS data .
* Calculation is based on 2 tests in a month.
[1] Additional monitoring for chronic toxicity required.

03/07/07

ATTACHMENT V

Site-specific Criteria for Cyanide

US Steel has proposed to calculate site-specific criteria for cyanide using the Recalculation Procedure. Species not found to occur at the site will be eliminated from the cyanide toxicity dataset and the site-specific criteria calculated using the remaining species. The presence of salmonids in the East Branch of the Grand Calumet River (EBGCR) has been the focus of agency attention. Simon et al. (1999) documents the presence of chinook salmon in the Grand Calumet River (GCR) during the fall spawning run known to occur in October and November. Steelhead trout were also collected in this study and may be present in the GCR from October until March. IDEM is therefore proposing 'salmonids present' and 'salmonids absent' site-specific criteria to be applied during the year when salmonids are either present or absent. Since salmonids are not known to spawn in the EBGCR IDEM is proposing to use only the adult salmonid toxicity test results for calculating the 'salmonids present' cyanide criteria.

Calculation of 'Adult Salmonids Present' Site-specific Criteria for Cyanide:

Recalculated Cyanide Water Quality Criteria:

Final Acute Value (FAV)	= 70.00 µg/L[1]
Criterion Maximum Concentration (CMC)	= **35 µg/L**
Criterion Continuous Concentration (CCC)	= **8.2 µg/L**

Acute-Chronic Ratio	8.568
No. of Genera Used	14
No. of Genera Deleted	2
No. of New Genera Added	0

[1]FAV value lowered to protect adult Rainbow trout from calculated FAV = 96.53.

TABLE 1

Recalculation of Site-Specific WQC for Cyanide (CN) (Adult Salmonids Present)

Genus	GMAV (µg/L)	Rank	Cum. Prob. P (Rank/n+1)	Sq.Rt. (P)	In (GMAV)	In (GMAV)^2
Tanytarsus	2,490	14				
Asellus	2,326	13				
Physa	432	12				
Pteronarcys	426	11				
Carassius	318	10				
Gammarus	167	9				
***Salvelinus*/Adult**	**156**	8				

Pimephales	125.1	7				
Daphnia	123.6	6				
Micropterus	102.0	5				
Pomoxis	102.0	4	0.2667	0.0711	4.6250	21.3906
Lepomis	99.28	3	0.2000	0.0400	4.5979	21.1407
Perca	92.64	2	0.1333	0.0178	4.5287	20.5091
Oncorhynchus	**70.00**	1	0.0667	0.0044	4.2485	18.0498
(Adult)			---	---	---	---
			0.6667	0.1333	18.0001	81.0902

T = 4

$\sum$ In (GMAV) = 18.0001

$\sum$ In $(GMAV)^2$ = 81.0902

$\sum$ P = 0.6667

$\sum$ Sq. Rt. (P) = 0.1333

S = 0.3672

L = 4.4878

A = 4.5699

FAV = 96.5344 µg/L, lowered to 70 µg/L to protect adult Rainbow trout

Acute-Chronic Ratio = 8.568

Recalculated WQC For CN:

Final Acute Value (FAV)	= e^A (4.5699)/*	= 70 µg/L
Acute Aquatic Criterion (CMC)	= FAV/2	= 35 µg/L
Chronic Aquatic Criterion (CCC)	= FAV / A-C Ratio (8.568)	= 8.2 µg/L

The following genera were omitted from the Great Lakes Water Quality Guidance cyanide criteria dataset:

	GMAV	Sensitivity Rank
Poecilia	147.0	10
Salmo	90.0	3

Site-Specific Cyanide WQC Calculations Details:

$$S^2 = \frac{\sum \{ (\text{In GMAV})^2 \} - \sum \{ (\text{In GMAV}) \}^2 / T}{\sum (P) - \sum \{ (\sqrt{P}) \}^2 / T}$$

$$S^2 = \frac{\sum \{ (\text{In } 81.0902)^2 \} - \sum \{ (\text{In } 18.0001) \}^2 / 4}{\sum (0.6667) - \sum \{ (\sqrt{0.1333}) \}^2 / 4}$$

$$= \frac{81.0902 - 81.0009}{0.6667 - 0.0044}$$

$$= \frac{0.0893}{0.6623} = \sqrt{0.1348}; \qquad \mathbf{S = 0.3672}$$

$$L = \{ \sum (\text{In GMAV}) - S (\sum(\sqrt{P}) \} / T$$

$$\begin{aligned} \mathbf{L} &= \{ (18.0001) - 0.3672 \times 0.1333 \} / 4 \\ &= \{ 18.0001 - 0.0489 \} / 4 \\ &= 17.9512 / 4 \\ &= \mathbf{4.4878} \end{aligned}$$

$$A = S \sqrt{(0.05)} + L$$

$$\begin{aligned} \mathbf{A} &= 0.3672 \times 0.2236 + 4.4878 \\ &= 0.0821 + 4.4878 \\ &= \mathbf{4.5699} \end{aligned}$$

$$\begin{aligned} \mathbf{FAV} &= e^{A} \\ &= \mathbf{e^{(4.5699)}} = \mathbf{96.5344\ (70\ ug/L)\ /*} \end{aligned}$$

Calculation of 'Salmonids Absent' Site-specific Criteria for Cyanide:

Recalculated Cyanide Water Quality Criteria:

Final Acute Value (FAV) = 91.62 µg/L
Criterion Maximum Concentration (CMC) = **46 µg/L**
Criterion Continuous Concentration (CCC) = **10.7 µg/L**

The following genera were omitted from the EPA National database to Recalculate the Site-Specific WQC for Cyanide:

	GMAV	Sensitivity Rank
o *Salmo*	63.45	1
o *Salvelinus*	85.80	2
o *Poecilia*	147.00	9

TABLE 2

Recalculation of Site-Specific WQC for Cyanide (CN)

Genus	GMAV (ug/L)	Rank	Cum. Prob. P (Rank/n+1)	Sq.Rt. (P)	In (GMAV)	In $(GMAV)^2$
Tanytarsus	2,490	12				
Asellus	2,326	11				
Physa	432	10				
Pteronarcys	426	9				
Carassius	318	8				
Gammarus	167	7				
Pimephales	125.1	6				
Daphnia	123.6	5				
Micropterus	102.0	4	0.3077	0.5547	4.625021	.3906
Pomoxis	102.0	3	0.2308	0.4804	4.625021	.3906
Lepomis	99.28	2	0.1538	0.3922	4.597921	.1407
Perca	92.64	1	0.0769	0.2773	4.528720	.5091
			0.7692	1.7046	18.3766	84.4310

T	=	4			
Σ In (GMAV)	=	18.3766	S	=	0.3775
Σ In $(GMAV)^2$	=	84.4310	L	=	4.4333
Σ P	=	0.7692	A	=	4.5177
Σ Sq. Rt. (P)	=	1.7046			

A-C Ratio = **8.57** (Except for the resistant Isopod (***Asellus***)), derived from all Freshwater organisms)

Recalculated WQC For CN:

Final Acute Value (FAV)	= e^A (4.5177)	= 91.62 ug/L
Acute Aquatic Criterion (AAC)	= FAV/2	= 45.81 ug/L
Chronic Aquatic Criterion (CAC)	= FAV / A-C Ratio (8.57)	= 10.69 ug/L

WQC Calculations Details:

$$S^2 = \frac{\Sigma \{ (\text{In GMAV})^2 \} - \Sigma \{ (\text{In GMAV}) \}^2 / T}{\Sigma (P) - \Sigma \{ (\sqrt{P}) \}^2 / T}$$

$$S^2 = \frac{\Sigma \{ (\text{In } 84.4310)^2 \} - \Sigma \{ (\text{In } 18.3766) \}^2 / 4}{\Sigma (0.7692) - \Sigma \{ (\sqrt{1.7046}) \}^2 / 4}$$

$$= \frac{84.4310 - 84.4249}{0.7692 - 0.7264}$$

$$= \frac{0.0061}{0.0428} = \sqrt{0.1425}; \qquad \mathbf{S = 0.3775}$$

$$L = \{ E (\text{In GMAV}) - S (E (\sqrt{P}) \} / T$$

$$\mathbf{L} = \{ (18.3766) - 0.3775 \times 1.7046 \} / 4$$
$$= \{ 18.3766 - 0.6435 \} / 4$$
$$= 17.7331 / 4$$
$$= \mathbf{4.4333}$$

$$A = S\sqrt{(0.05)} + L$$

$$\mathbf{A} = 0.3775 \times 0.2236 + 0.4333$$
$$= 0.0844 + 0.4333$$
$$= \mathbf{4.5177}$$

$$\mathbf{FAV} = e^{A}$$
$$= e\,(4.5177) \quad = \mathbf{91.62}$$

Literature Cited:

Simon, T.P., P.M. Stewart, D. Sparks, A. Peine, J. Exl, J.T. Butcher and J. Smith 1999. A study of the distribution of chinook salmon (*Onchorhynchus tschawytscha*) in the Grand Calumet River and Indiana Harbor Canal, Lake County, Indiana. U.S. Fish and Wildlife Service, Bloomington, Indiana.

ATTACHMENT V

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Gammarus	167	9				
***Salvelinus*/Adult**	**156**	8				

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE OF
PUBLIC MEETING AND DRAFT NPDES PERMIT

To discharge wastewater into navigable waters of the State

PUBLIC NOTICE NO. 2007 – 7B – RD/PM **DATE OF NOTICE: JULY 4, 2007**
MEETING DATE: August 01, 2007 **RESPONSE DATE: August 11, 2007**

Permit Information: INDUSTRIAL RENEWAL

UNITED STATES STEEL (USS) – GARY WORKS FACILITY, Permit No. IN0000281, LAKE COUNTY, 1 N. Broadway, Gary, IN. This is the second public notice of the US Steel-Gary Works Facility. The first draft was public noticed on July 25, 2003 (2003-7H-RD). A Public Hearing was later held on October 3, 2003. This is the public notice of the current draft permit for this facility. This industrial facility manufactures iron and steel products, and coke and coke making byproducts. USS has several point source discharges to the East Branch of the Grand Calumet River and Lake Michigan, and one to Stockton Pond consisting of process, sanitary, contact cooling, non-contact cooling and storm water and discharges to the Grand Calumet River, Lake Michigan and Stockton Pond in Lake County. A complete listing and description of outfalls and discharge points are detailed in the draft Permit and Fact Sheet.

Tentative Determination: On the basis of preliminary staff review and application of pertinent standards and regulations, IDEM proposes to issue the Renewal permit which imposes certain effluent limitations, monitoring requirements, and special conditions. The permit term is no more than five years.

Meeting Information: IDEM has scheduled a Public Meeting concerning this Draft permit for **Wednesday August 01, 2007, at 6:00 p.m. (local time), at the Gary Public Library – Main Branch, in the Auditorium located at 220 West 5th, Gary, IN.** The purpose of the Meeting is to allow public participation in the determination of the terms and conditions of the NPDES permit. Interested parties should submit written or oral comments to the IDEM representatives at the time of the meeting.

Special Considerations
Individuals requiring reasonable accommodations for this Meeting must contact the IDEM - ADA Coordinator at 100 N Senate Av., Rm 1322N, (317) 233-4200, or via the Indiana Relay Service at 1-800-743-3333, at least 72 hours prior to the meeting.

Comment Period & Procedures for the Formulation of Final Determination
The proposed determination to issue an NPDES permit is tentative. Comments not submitted at the Public Meeting must be received/postmarked at IDEM no later than **August 11, 2007** to be considered in the formulation of the Final Determination. Anyone wishing notification of the Final Determination on this permit must provide written contact information to IDEM staff at the Public Meeting or during the specified comment period. Notice of Final Permit action will not be made to persons who fail to comment on the Draft Permit or fail to request such notice. Deliver or mail all requests or comments to the address below:

IDEM - Office of Water Quality / Industrial NPDES Permits Section
Attention: Mr. Stan Rigney - MC 65-42 IGCN Rm 1255
100 North Senate Avenue - Indianapolis, IN 46204-2251
(317) 232-8709

All email requests or comments should be sent to: srigney@idem.In.gov

Additional Information: All Draft documents are available for review at the above address, file room #1201, between 9:00 a.m. & 4:00 p.m., M-F, (copies 10¢ per page). A Draft copy is also available at the Lake County Health Dept, Gary Health Dept, Gary Public Library/Main Branch, and the Northwest Regional Office. Please tell others you think might be interested in this matter.