Donald C. Cook Nuclear Plant Unit 1 and 2

Application for Renewal of National Pollutant Discharge Elimination System Permit

March 28, 2003

NPDES Permit Renewal

Indiana Michigan Power Company Cock Nuclear Plant One Cock Plant Endgman MI 49106 616 465 5901



CERTIFIED MAIL #7000 0520 0014 6367 3082

Mr. Greg Danneffel, District Supervisor Michigan Department of Environmental Quality Surface Water Quality Division 7953 Adobe Road Kalamazoo, MI 49009

March 28, 2003

Subject: NPDES Permit MI0005827 Application

Dear Mr. Danneffel:

Enclosed is the Industrial and Commercial Wastewater Discharge Application for renewal of the Donald C. Cook Nuclear Plant National Pollutant Discharge Elimination System (NPDES) Permit. This application is being submitted 180 days prior to the expiration of the present permit.

During the term of the present permit, several permit modifications were made to improve Cook Nuclear Plant operations. We appreciate your efforts in these permit modifications.

If there are any questions, please contact me at (269) 456-5901 ext. 1153 or Blair Zordell at (269) 465-5901 ext. 2006.

Sincerely,

Jon H Harris 101 Beach Contain

John Carlson Environmental Manager

Enclosure

c: US NRC per App. B. T.S.

2003-387

ALP America's Litergy Partner -

bc: NPDES Permit
 K. D. Mack
 C. E. Hawk
 MDEQ File w/o Attachments
 Annual Operating Report
 NDM (2003-387), Mail Zone 1

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Section I

Michigan Department of Environmental Quality - Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION I - General Information

This information is required by the Part 21 Rules of Michigan Act 451, Public Acts of 1994, as amended, Part 31 A municipality, business, or industry hich violates the Part 21 Rules may be enjoined by action commenced by the Attorney General in a court of competent jurisdiction

See the facing page for instructions on completing pages 1 and 2. To submit additional information see page ii, item 8

PLEAS	SE TYPE OR PRINT							· · · · · · · · · · · · · · · · · · ·
1	NPDES PERMIT NUMBER MI 0005827			DEQ USE ONLY Permit ID # :				
	Applicant Name							
CANT	Indiana Michigan Power Company							
	Address Address			Address 2 or P.C	P.O. Box			
	One Cook Place							
ЪГ			State	ZIP Code				·····
2. AP	City Stat		MI	4910		106		
				EAX (with area code)				
	(260) 465-5901	165-5901			(269) 466-2550			
	Facility Name 1							
	Donald C. Cook Nuclear Plant							
	Facility Name 2							
Ϋ́	Facility Name 3							
Ģ		a Ni						
. FI	Street Address (do not use a P.O B	ox Number)						
3			0	·				
	City		State					
	Bridgman		1 MI		49100			
	Telephone (with area code)			FAX (with area c	code)			
•	(269) 465-5901 (269) 466-255			(269) 466-2550	1			
1	First Name		lame		Last Name			
		John	<u>n</u>					
	Title			E		Business		
		Environmenal Manager						
	Discharge Monitoring Reports	Address 1			Address 2			
		Donald C Cook Nuclea	<u> </u>	One C	Cook Place			
	Storm Water Billing	City			State			Zip Code
1		Bridgman			<u>MI</u>			49106
	Biosolids Billing	Telephone (with area code) FAX (with area c		FAX (with area co	ode)		e-mail address	
		(269) 465-5901 x 1153 (269) 466-2550		jpcarison@aep.com		ep com		
		First Name			Last Name			
i	Application Contact Blair				Zordeli			
<i>"</i>	T Facility Contract	Title			Busin	Business		
Ŭ.		Environmental Specialist Sr						
τı Α		Address 1			Address 2			
ð.	Donald C. Co		C. Cook Nuclear Plant		One C	ne Cook Place		
4	Storm Water Billing	City			State Zi		Zip Code	
		Bridgman	ridgman					49106
	L. Biosolias Billing	Telephone (with area co	e (with area code) FAX (with area c		ode)		e-mail address	
		(269) 465-5901 x 2006 (269) 466-2550		bkzordell@aep com		ep com		
		First Name			Last Name			
	Application Contact							
		Title			Business			
		Address 1			Address 2			
1				<u></u>				
}	Storm Water Billing	City				State Zip Code		Zip Code
1					<u> </u>	e-mail address		
	П Riosolias Rilling	Telephone (with area code) FAX (with area c		FAX (with area co	;ode)			

Michigan Department of Environmental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION I - General Information

PLEASE TYPE OR PRINT

• • • • • • • • • • • • • • • • • • •						
CILITY NAME Jonald C. Cook Nuclear Plant	NPDES PERMIT NUMBER					
Note: Applications for New Use discharges and applications for either Reissuance or Modification that include an increased loading of pollutants to the receiving water must submit a Rule 98 Demonstration with the application. See Item 6 below.						
 RULE 98 - ANTIDEGRADATION DEMONSTRATION (see instructions page iv, item 6) In accordance with Rule 323 1098 of the Michigan Water Quality Standards, the permittee must submit an antidegradation demonstration for any new or increased loading of pollutants to the surface waters of the state. For assistance completing this item call the Permits Section. Will this discharge be an increased loading of pollutants to the surface waters of the state? 						
 Yes, submit an antidegradation demonstration (refer to Rule 323.1) No, Continue with Item 7. 	 Yes, submit an antidegradation demonstration (refer to Rule 323.1098 on page 4 of the appendix for instructions). No, Continue with Item 7. 					
7 ADDITIONAL FACILITY INFORMATION (see instructions on page iv,	tem 7)					
A is the treatment facility within municipal boundaries?	s 🛛 No					
B Bernen	Township					
C 514, 74 74 Section	Town Range					
D Latitude 41 58' 30"	Longitude 86 34' 30"					
CERTIFIED OPERATOR Does the facility have a properly certified operator? X Yes I No (see instructions on page iv)						
Operator's Name Blair Zordell	Operator's Telephone (269) 465-5901 x 2006					
Certification Number: 4537	Certification Classification(s). A-1d, A-1h, A-2e, B-1b.					
9. OTHER ENVIRONMENTAL PERMITS Provide the information requested below for any other federal, state or local environmental permits in effect or applied for at the time of submittal of this application form, including, but not limited to, permits issued under any of the following programs Air Pollution Control, Hazardous Waste Management, Wetlands Protection, Soil Erosion and Sedimentation Control, and other NPDES permits. To submit additional information see page ii, item 8.						
Issuing Agency	Permit or COC Number Permit Type					
MDEQ-Air Quality Division	544-97 Air Use Permit					
MDEQ-Air Quality Division	460-93 Air Use Permit					
MDEQ-WMD	M 00988 Discharge To Groundwater					
Berrien County Drain Commission	3449R Soil and Erosion Permit					
MDEQ-Geological and Land Management Division	02-11-0111-P Part 325 /353					
USEPA	MID098647621 Hazardous Waste Waste ID					
rrien County Drain Commission	3298 Soil and Erosion Permit					
MDEQ-Geological and Land Management Division	01-11-0069-P Crit Dne/Sub Lands					

Michigan Department of Environmental Quality-Surface Water Quality Division Wastewater Discharge Permit Application SECTION I - General Information

PLEASE TYPE OR PRINT				
FACILITY NAME	NPDES PE	NPDES PERMIT OR COC NUMBER		
Donald C. Cook Nuclear Plant	MI0005827	MI0005827		
9. OTHER ENVIRONMENTAL PERMITS				
Provide the information requested below for any other federal, state, or local environmental permits in effect or applied for at the time of submittal of this application form; including, but not limited to, permits issued under any of the following programs: Air Pollution Control, Hazardous Waste Management, Wetlands Protection, Soil Erosion and Sedimentation Control, and other NPDES permits. To submit additional information see page ii, item 8.				
Issuing Agency	Permit or COC Number	Permit Type		
MDEQ –Geological and Land Management Division	94-BR-321-C	Right of Way Vegetation Control- Critical Dune Permit		
US Army Corps of Engineers	69-056-004-7	Dept of the Army Permit		
MDEQ –Geological and Land Management Division	02-11-0045-P	Part 323 Shorelands Protection and Management Part 353 Sand Dune Protection and Management,		

Michigan Department of Environmental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION L - General Information

	SECTION I - Ge				
CAULTE NAME Donald C. Cook N	Nuclear Plant				
Donald C. Cook h		MI0005827			
 WATER FLOW DIAGRAM AN Provide a flow diagram (using including all processes, treatr contributing wastewater and th daily average flow rates at inter- rates. Use actual measurem atmosphere and discharge. In or federal law, and for storm of blueprints. 	N. WATER FLOW DIAGRAM AND NARRATIVE DESCRIPTION Provide a flow diagram (using 8½" x 11* paper if possible) showing the wastewater flow through the facility (from intake through discharge) including all processes, treatment units and bypass piping and include a narrative description that explains the diagram. Show all operations contributing wastewater and the locations of flow meters, chemical feeds, monitoring points and discharge points. The water balance shall show daily average flow rates at intake and discharge points and approximate daily flow rates between treatment units including influent and treatment rates. Use actual measurements whenever available, otherwise use the best estimate. Show all significant losses of water to products, atmosphere and discharge. In addition provide a flow diagram for any storm water discharges from secondary structures that are required by state or federal law, and for storm water runoff from any Site of Environmental Contamination pursuant to Part 201 of the Michigan Act. Do not send blueprints.				
Do the treatment facility proce If yes, include the ponds or lag	Do the treatment facility processes described above, include any lagoons or ponds used for wastewater treatment or storage? 🛛 Yes 🗋 No If yes, include the ponds or lagoons in the flow diagram.				
Municipal Facilities - Include original construction, the facilit and other pertinent information	Municipal Facilities - Include a narrative that briefly describes the history of the wastewater treatment facility and collection system, including the original construction, the facility improvements that have been made, future plans for upgrade, the location of all constructed emergency overflows and other pertinent information.				
Industrial and Commercial I areas, sanitary flows, cooling v and the manufacturing process	Industrial and Commercial Facilities - The line diagram shall include all operations contributing wastewater including process and production areas, sanitary flows, cooling water and storm water runoff. Also include a narrative that provides a brief description of the nature of the business and the manufacturing processes				
ATTACH THIS INFORMATION	N TO THIS APPLICATION. PLEASE DO	NOT BIND THIS INFORMATION.			
Provide a detailed map on 8% ² × 11 ⁻ paper showing the location of the existing or proposed facility, wastewater and biosolid treatment system(s), and wastewater monitoring and discharge points into receiving waters (including bypasses) Include the exact location of the wastewater monitoring and discharge point(s) and all areas through which the discharge flows (e.g. wetlands, open drains, storm sewers), if applicable, between the discharge point and the receiving water. If the discharge is to a storm sewer, label the storm sewer and show its flow path to the receiving water. Also include the location of any water supply intakes or wells and groundwater monitoring wells. This map shall be a United States Geological Survey Quadrangle (7.5 minute series) or other map of comparable detail, scale and quality (which shows surface water bodies, roads, bathing beaches and other pertinent landmarks). The minimum area this map shall encompass is approximately one mile beyond property boundaries. ATTACH THIS INFORMATION TO THIS APPLICATION.					
12. CONTRACT LABORATORY T Provide the name and address	 CONTRACT LABORATORY THAT PROVIDE ANALYTICAL SUPPORT Provide the name and address of each contract laboratory or consulting firm that performed any analyses submitted as part of this application. To 				
submit additional information s	ee page II, item 8.				
Laboratory Name		Laboratory Name			
John E Dolan Labs		General Engineering Labs			
4001 Bixby Road		2040 Savage Road			
City		City			
Groveport, Ohio		Charleston, South Carolina			
Telephone (with area code)	Fax (with area code)	Telephone (with area code)	Fax (with area code)		
(614) 836-4236	(614) 836-4168	(843) 556-8171	(843) 766-1178		
Analysis Performed		Analysis Performed			
Metals, TOC, SO4, BOD5, Cyanide, TSS, NH3		Metals, TOC, SO4, BOD5, Cyanide, TSS, NH3			
Laboratory Name		Laboratory Name			
Belmonte Park Environmental Laboratories		Cook Nuclear Plant			
Street Address		Street Address			
11 E Main St.		One Cook Place			
City Dayton Obio		City Padaman Mishinga			
Alephone (with area code)	Fax (with area code)	Telephone (with area code)	Eax (with area code)		
(937) 837-3744	NA	(269) 465-5901	(269) 466-2550		
Analysis Performed	· · · · · · · · · · · · · · · · · · ·	Analysis Performed			
Table 2 Analyses		pH, TRC, Temp, Ethanolamine, Hydrazine, S04, Metals, TSS			

Waste Flow Diagram & Narrative



Section I, Item 10

WASTEWATER FLOW DIAGRAM DONALD C. COOK NUCLEAR PLANT



Section I, Item 10

Stormwater discharges from Secondary Structures

NPDES Permit MI0005827



SECTION I, ITEM 10 Cont'd NPDES Waste Stream Narrative

This narrative describes all outfalls discharging to Lake Michigan. Flows are based on a review of previous NPDES applications, Plant system descriptions, or previously submitted Discharge Monitoring Reports (DMR). The chemical additives described below may include a manufacturer's name as an example of the type of product used in a specific system. Indiana Michigan Power may substitute vendors of chemical additives provided that the chemical ingredients are similar. Discharge values are based on maximum release rates and volumes, dilution rates are based on a minimum number of pumps running.

OUTFALL 001 - Unit 1 Circulating Water Discharge

Outfall 001 is a non-contact cooling water discharge. The majority of non-contact cooling water (Circulating Water System, ~690,000 GPM) is used to condense the steam exhausting from steam driven turbines. Non-contact cooling water is drawn from Lake Michigan approximately one-half mile from shore through three 16 ft. diameter tunnels. Water enters the tunnels via intake cribs at an approximate velocity of 1.3 feet per second. The water enters to a forebay where it is screened to remove large debris that may be entrained in the water. It is routed through the Unit 1 condensers and then discharged to Lake Michigan through a 16 foot diameter tunnel. The water exits the tunnels through high velocity discharges at a rate of approximately 13 feet per second approximately 1/4 mile from shore. Outfall 001 also includes internal Outfalls (as designated by the Michigan Department of Environmental Quality) steam generator Blowdown (00A, 00B), Plant Heating Boiler (00C), Reverse Osmosis Unit (00G), and the Turbine Room Sump Emergency Overflow (00H) described in detail later in this document.

Outfall 001 also may contain the effluent flow from both Units' Essential Service Water (ESW) systems, both Units' Non-Essential Service Water (NESW) system, and monitor tank releases. ESW (~40,000 GPM) is Lake Michigan water taken from the forebay that is used to provide cooling to safety-related equipment. NESW (~18,000 GPM) is also Lake Michigan water taken from the forebay used for

non-contact cooling for various plant systems including oil coolers, a source of water for the demineralized makeup system (MUP), and a water supply for non-safety related equipment. Monitor tank releases (~15,000 to 20,000 gallons per event) are regulated by the NRC and consist of wastewater from various system and equipment leakage that may be generated within the auxiliary building area. Minor leakage from systems containing lube oil, hydrazine, carbohydrazide, ethanolamine or closed-loop cooling systems containing a maximum concentration of gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm), and nitrite (1200 ppm), may be discharged via monitor tank releases.

The non-contact cooling water for the Circulating Water, the ESW and the NESW, and Miscellaneous Sealing and Cooling Water Systems is treated for biological control using sodium hypochlorite. This same water is periodically treated using a non-oxidizing biocide to eradicate zebra mussels from the cooling systems. The biocides (Betz Spectrus CT-1300, Betz CT-4, Calgon H-130M, Calgon EVAC and NALCO Macro-Trol 9380) are all polyquats, and are used as required to protect plant systems while meeting water quality based effluent limits. The treatments can be directed to various critical plant systems from the intake structures through the entire plant cooling system, including the Circulating Water System, ESW and NESW systems and other non-contact cooling water. The biocide may be added to the systems via a chemical injection pipeline through a ring header located inside the intake crib, or directly applied at a specific system. A chemical injection pipeline is installed inside the intake piping and is designed to feed chemicals from inside the plant. The intake chemical injection header may be stored with chemical inside the pipe to prevent zebra mussel infestation. The header may also be leak checked using approved dyes such as fluorescein, or other indicators such as Nalco Trasar 23299. Noncontact cooling systems biocide treatments are dependent upon zebra mussel infestation. Concentrations and chemical feed points are chosen to minimize the amount of biocide required and to maximize the efficacy on zebra mussels. Bentonite clay may be added to detoxify the biocide prior to discharge. The plant non-contact cooling water systems may be treated concurrently or individually to allow more efficient use of chemicals. Plant systems are treated to assure safe operation of the nuclear generating units.

The piping used to apply chemicals is regularly cleaned of calcium carbonate scale buildup. A small amount of weak acid cleaner such as Betz FerroQuest FQ LP 7200 may be used to remove accumulated carbonate scale deposits. The accumulated deposits will be discharged via Outfalls 001/003. Circulating water will dilute the weak acid prior to discharge to Lake Michigan.

Condensate flushes are performed periodically to purge the plant's secondary water system from layup chemistry specifications during shutdown conditions to startup chemistry specifications prior to startup of the unit. Water containing up to 4 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboarded to Outfall 001 as required to remove contaminants to meet desired startup secondary Chemistry specifications. This flowrate averages 70 GPM, but may reach 600 GPM for short periods of time. The flowrate is dependent on chemistry specification parameters and makeup water availability. The maximum output from the MUP is approximately 600 GPM or 864,000 GPD. (See Outfalls 00A, 00B for further description.)

Monitor tanks receive treated water from the auxiliary building radioactive waste removal system and other sources such as ice production and removal processes from the ice condenser systems and other radioactively contaminated wastes generated at the facility. This system handles wastes generated from the reactor coolant pump seal leakoffs, the refueling cavity water, equipment leaks, floor drains, valve stem leakoffs, system sampling, and waste sample solutions. It also handles laboratory wastes from the radiochemistry analysis in the hot chemical laboratory, system equipment drains, non-contact cooling water, ice production/removal and decontamination processes and any contaminated liquid waste generated in the auxiliary building area. The wastes are collected in one of several tanks and are treated when enough water is collected. The treatment utilizes a demineralizer system to minimize radioactive contaminants. A small amount of wastewater may bypass the treatment because it cannot be processed by resin.

Other special drains of non-radioactive process water systems such as Component Cooling Water system flushes with biocides such as gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm) and nitrite (1200 ppm), and borated icemaking/ice removal operations, can be routed directly to the plant's monitor tanks without treatment. For maintenance purposes to prevent microbial growth, Component Cooling Water flushes are performed generating approximately 281,000 gallons per year of flushwater to the monitor tanks.

Borated icemaking/ice removal operations occur for maintenance of the plant's ice condenser systems. This process produces a solution of sodium tetraborate (approximately 2200 ppm as boron) that can be drained to the monitor tanks. This process takes place approximately every 18 months and may produce up to 10,000 gallons of sodium tetraborate solution.

Both the treated wastewater and the special drains are accumulated in the monitor tanks and sampled to ensure the waste meets the radiological requirements prior to being discharged into the Circulating Water System.

Periodically, due to equipment leaks and/or system upsets, a waste stream is generated that contains radioactively contaminated ethylene glycol and water. Incidental amounts of ethylene glycol generated from equipment leaks may be drained directly to the monitor tanks or treated by the radwaste processing system. Small amounts of ethylene glycol may be discharged to outfalls 001, 002, or 003.

Sulfur hexafluoride gas (SF6) is utilized in the non-contact cooling water systems at the plant to detect leaks in various components such as the condensers. The gas is injected in the cooling water stream and discharged to outfalls 001, 002 or 003 at less than 54 ul/l.

Aryl sulfate liquid (NALCO Trasar 23299) is utilized in the non-contact cooling water systems at the plant to determine flow through various parts of the system. The liquid is injected into the service water system to reach a target concentration of approximately 2 mg/l. The service water is discharged to Outfalls 001, 002, or 003, which would, in turn, discharge at less than 0.15 mg/l. The liquid is also injected into the circulating water system to reach a target concentration of approximately 2 mg/l.

Control Room Air Conditioning (CRAC) testing: Approximately 1440 gallons/yr. of CRAC water may mix with ESW and then be discharged to the forebay during a monthly test of the system. CRAC water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Biotrol 107 (Spectrus NX 1105), Calgon H-300, or equivalent], 60 ppm tolyltriazole [from Calgon LCS-60, Betz Copper-Trol Cu-1, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 10 ppm methyl (bis) thiocyanate (from Betz 3610), 1000 ppm molybdate from Betz Corrshield MD 4103 and 25 ppm aryl sulfate (from NALCO 22199).

Three roadway storm drains route small amounts of stormwater from a small section of roadway that traverses over the Circulating Water Forebay. The three storm drains are designed to route accumulated stormwater from this small roadway to the forebay below. A small amount of de-icing compound used on this section of road could potentially enter these small (Approximately 8") gratings. Screened material collected from the plant's intakes is also stored in this area in designated trash dumpsters. Fish exudiates are now drained to the forebay as recommended by the MDEQ stormwater and NPDES inspection team (M. Fields and J. Molloy 1997).

During upset conditions it is possible to overflow the contents of the Turbine Room Sump (See Outfall 00H) to Outfalls 001, 002 and/or 003 if the flow path to the on-site absorption pond cannot be used.

OUTFALL 002 - Unit 2 Circulating Water Discharge

Outfall 002 is a non-contact cooling water discharge. The majority of non-contact cooling water (Circulating Water System, -920,00 GPM) is used to condense the steam exhausting from steam driven turbines. Non-contact cooling water is drawn from Lake Michigan approximately one-half mile from shore through three 16 ft. diameter tunnels. Water enters the tunnels via intake cribs at an approximate velocity of 1.3 feet per second. The water enters to a forebay where it is screened to remove large debris that may be entrained in the water. It is routed through the Unit 2 condensers and then discharged to Lake Michigan through an 18 foot diameter tunnel. The water exits the tunnels through high velocity discharges at a rate of approximately 13 feet per second approximately 1/4 mile from shore. Outfall 002 also includes internal Outfalls (as designated by the Michigan Department of Environmental Quality) steam generator Blowdown (00A, 00B), Plant Heating Boiler (00C), Reverse Osmosis Unit (00G), and the Turbine Room Sump Emergency Overflow (00H) described in detail later in this document.

Outfall 002 also may contain the effluent flow from both Units' Essential Service Water (ESW) systems, both Units' Non-Essential Service Water (NESW) system, and monitor tank releases. ESW (~40,000 GPM) is Lake Michigan water taken from the forebay that is used to provide cooling to safety-related equipment. NESW (~18,000 GPM) is also Lake Michigan water taken from the forebay used for

non-contact cooling for various plant systems including oil coolers, a source of water for the demineralized makeup system (MUP), and a water supply for non-safety related equipment. Monitor tank releases (~15,000 to 20,000 gallons per event) are regulated by the NRC and consist of wastewater from various system and equipment leakage that may be generated within the auxiliary building area. Minor leakage from systems containing lube oil, hydrazine, carbohydrazide, ethanolamine or closed-loop cooling systems containing a maximum concentration of gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm), and nitrite (1200 ppm), may be discharged via monitor tank releases.

The non-contact cooling water for the Circulating Water, the ESW and the NESW, and Miscellaneous Sealing and Cooling Water Systems is treated for biological control using sodium hypochlorite. This same water is periodically treated using a non-oxidizing biocide to eradicate zebra mussels from the cooling systems. The biocides (Betz Spectrus CT-1300, Betz CT-4, Calgon H-130M, Calgon EVAC and NALCO Macro-Trol 9380) are all polyquats, and are used as required to protect plant systems while meeting water quality based effluent limits. The treatments can be directed to various critical plant systems from the intake structures through the entire plant cooling system, including the Circulating Water System, ESW and NESW systems and other non-contact cooling water. The biocide may be added to the systems via a chemical injection pipeline through a ring header located inside the intake crib, or directly applied at a specific system. A chemical injection pipeline is installed inside the intake piping and is designed to feed chemicals from inside the plant. The intake chemical injection header may be stored with chemical inside the pipe to prevent zebra mussel infestation. The header may also be leak checked using approved dyes such as fluorescein, or other indicators such as Nalco Trasar 23299. Noncontact cooling systems biocide treatments are dependent upon zebra mussel infestation. Concentrations and chemical feed points are chosen to minimize the amount of biocide required and to maximize the efficacy on zebra mussels. Bentonite clay may be added to detoxify the biocide prior to discharge. The plant non contact cooling water systems may be treated at the concurrently or individually to allow more efficient use of chemicals. Plant systems are treated to assure safe operation of the nuclear generating units.

The piping used to apply chemicals is regularly cleaned of calcium carbonate scale buildup. A small amount of weak acid cleaner such as Betz FerroQuest FQ LP 7200 may be used to remove accumulated carbonate scale deposits. The accumulated deposits will be discharged via Outfalls 002/003. Circulating water will dilute the weak acid prior to discharge to Lake Michigan.

Condensate flushes are performed periodically to purge the plant's secondary water system from layup chemistry specifications during shutdown conditions to startup chemistry specifications prior to startup of the unit. Water containing up to 4 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboarded to Outfall 002 as required to remove contaminants to meet desired startup secondary Chemistry specifications. This flowrate averages 70 GPM, but may reach 600 GPM for short periods of time. The flowrate is dependent on chemistry specification parameters and makeup water availability. The maximum output from the MUP is approximately 600 GPM or 864,000 GPD. (See Outfalls 00A, 00B for further description.)

Monitor tanks receive treated water from the auxiliary building radioactive waste removal system and other sources such as ice production and removal processes from the ice condenser systems and other radioactively contaminated wastes generated at the facility. This system handles wastes generated from the reactor coolant pump seal leakoffs, the refueling cavity water, equipment leaks, floor drains, valve stem leakoffs, system sampling, and waste sample solutions. It also handles laboratory wastes from the radiochemistry analysis in the hot chemical laboratory, system equipment drains, non-contact cooling water, ice production/removal and decontamination processes and any contaminated liquid waste generated in the auxiliary building area. The wastes are collected in one of several tanks and are treated when enough water is collected. The treatment utilizes a demineralizer system to minimize radioactive contaminants. A small amount of wastewater may bypass the treatment because it cannot be processed by resin.

Other special drains of non-radioactive process water systems such as Component Cooling Water system flushes with biocides such as gluteraldehyde (100 ppm), methyl (bis) thiocyanate (10 ppm), tolyltriazole (60 ppm), Molybdate (1000 ppm) and nitrite (1200 ppm), and borated icemaking/ice removal operations, can be routed directly to the plant's monitor tanks without treatment. For maintenance purposes to prevent microbial growth, Component Cooling Water flushes are performed generating approximately 281,000 gallons per year of flushwater to the monitor tanks.

Borated icemaking/ice removal operations occur for maintenance of the plant's ice condenser systems. This process produces a solution of sodium tetraborate (approximately 2200 ppm as boron) that can be drained to the monitor tanks. This process takes place approximately every 18 months and may produce up to 10,000 gallons of sodium tetraborate solution.

Both the treated wastewater and the special drains are accumulated in the monitor tanks and sampled to, ensure the waste meets the radiological requirements prior to being discharged into the Circulating Water System.

Periodically, due to equipment leaks and/or system upsets, a waste stream is generated that contains radioactively contaminated ethylene glycol and water. Incidental amounts of ethylene glycol generated from equipment leaks may be drained directly to the monitor tanks or treated by the radwaste processing system. Small amounts of ethylene glycol may be discharged to outfalls 001, 002, or 003.

Sulfur hexafluoride gas (SF6) is utilized in the non-contact cooling water systems at the plant to detect leaks in various components such as the condensers. The gas is injected in the cooling water stream and discharged to outfalls 001, 002 or 003 at less than 54 ul/l.

Aryl sulfate liquid (NALCO Trasar 23299) is utilized in the non-contact cooling water systems at the plant to determine flow through various parts of the system. The liquid is injected into the service water system to reach a target concentration of approximately 2 mg/l. The service water is discharged to Outfalls 001, 002, or 003, which would, in turn, discharge at less than 0.15 mg/l. The liquid is also injected into the circulating water system to reach a target concentration of approximately 2 mg/l.

Control Room Air Conditioning (CRAC) testing: Approximately 1440 gallons/yr. of CRAC water may mix with ESW and then be discharged to the forebay during a monthly test of the system. CRAC water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Biotrol 107 (Spectrus NX 1105), Calgon H-300, or equivalent], 60 ppm tolyltriazole [from Calgon LCS-60, Betz Copper-Trol Cu-1, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 10 ppm methyl (bis) thiocyanate (from Betz 3610), 1000 ppm molybdate from Betz Corrshield MD 4103 and 25 ppm aryl sulfate (from NALCO 22199).

Three roadway storm drains route small amounts of stormwater from a small section of roadway that traverses over the Circulating Water Forebay. The three storm drains are designed to route accumulated stormwater from this small roadway to the forebay below. A small amount of de-icing compound used on this section of road could potentially enter these small (Approximately 8") gratings. Screened material collected from the plant's intakes is also stored in this area in designated trash dumpsters. Fish exudiates are now drained to the forebay as recommended by the MDEQ stormwater and NPDES inspection team (M. Fields and J. Molloy 1997).

During upset conditions it is possible to overflow the contents of the Turbine Room Sump (See Outfall 00H) to Outfalls 001, 002 and/or 003 if the flow path to the on-site absorption pond cannot be used.

OUTFALL 003 - Deicing Discharge

Outfall 003 is a deicing discharge which is used when water temperatures approach freezing temperatures. A portion of the flow from Outfall 001 and /or Outfall 002 is directed through the center intake tunnel to temper the intake water and prevent ice buildup on the intake structures which could restrict intake flow. The velocity at the other two intake structures during de-icing mode increases to approximately 1.9 feet per second. Discharge velocity will be less that 13 feet per second since a portion of the discharge is routed out the center intake tunnel.

The Essential and Non-Essential Service Water System (ESW and NESW) may be recirculated with a combination of Circulating Water Pumps in service to raise the forebay temperature to prevent frazil ice formation during cold weather periods. During shutdown conditions when normal operating heat addition is not available, portable heat addition units may be placed in the forebay to prevent frazil ice formations that may prevent flow to safety systems in the plant.

OUTFALL 00A - Unit 1 Steam Generator Blowdown

The steam generators (part of the secondary water system) require ultra high purity water for operation. Makeup water used in the steam generators is withdrawn from the intake forebay (or from Lake Township water supply or a blending of both sources) and treated so most natural impurities are removed through sedimentation, filtration, reverse osmosis, and demineralization. Impurities concentrate in the steam generators as the water is turned to steam and must be removed to protect the steam turbines and

heat transfer surfaces of the steam generators. The impurities are removed by continuously draining a portion of the water from the steam generators in a process called "blowdown".

In the steam generator, steam is separated from the water, further heated, and then routed to the turbines. When the steam separates from the water, the impurities remain in the water, concentrating in the steam generator. Blowdown consists of two forms, a liquid portion (700 gpm max) and a wet steam portion, which is exhausted to the atmosphere. The liquid portion of the steam generator blowdown is discharged to the screenhouse forebay either directly (Normal Flash Tank), or after processing through mixed bed demineralizers. Impurities in this discharge may consist of small quantities of insoluble iron and copper or impurities from the Circulating Water System used to cool the condensers should condenser tube leaks occur. Steam generator additives consist of ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging.

When the units are not operating, the steam generators are placed in wet layup conditions to protect against corrosion during storage. Layup water is periodically discharged through the outfall to the Circulating Water Forebay. The layup water contains a maximum concentration of 400 ppm hydrazine [Betz Powerline Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent), and /or 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001). The waste strength of this discharge is reduced through mixing with Outfalls 001, 002, or 003.

During the Sludge Lancing Process, demineralized water or secondary water is used to pressure clean the steam generators during outage periods. The water is recirculated through temporary filters to remove entrained solids. The major constituent of the solids is iron oxide from the steam generators. The water is then returned to the steam generators and can be drained to Outfalls 00A, 00B, to Outfall 001, 002, 003, 00D or 00H. The suspended solids are analyzed for radioactivity prior to disposal.

OUTFALL 00B - Unit 2 Steam Generator Blowdown

The steam generators (part of the secondary water system) require ultra high purity water for operation. Makeup water used in the steam generators is withdrawn from the intake forebay (or from Lake Township water supply or a blending of both sources) and treated so most natural impurities are removed

through sedimentation, filtration, reverse osmosis, and demineralization. Impurities concentrate in the steam generators as the water is turned to steam and must be removed to protect the steam turbines and heat transfer surfaces of the steam generators. The impurities are removed by continuously draining a portion of the water from the steam generators in a process called "blowdown".

In the steam generator, steam is separated from the water, further heated, and then routed to the turbines. When the steam separates from the water, the impurities remain in the water, concentrating in the steam generator. Blowdown consists of two forms, a liquid portion (700 gpm max) and a wet steam portion, which is exhausted to the atmosphere. The liquid portion of the steam generator blowdown is discharged to the screenhouse forebay either directly (Normal Flash Tank), or after processing through mixed bed demineralizers. Impurities in this discharge may consist of small quantities of insoluble iron and copper or impurities from the Circulating Water System used to cool the condensers should condenser tube leaks occur. Steam generator additives consist of ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging.

When the units are not operating, the steam generators are placed in wet layup conditions to protect against corrosion during storage. Layup water is periodically discharged through the outfall to the Circulating Water Forebay. The layup water contains a maximum concentration of 400 ppm hydrazine [Betz Powerline Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent), and /or 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001). The waste strength of this discharge is reduced through mixing with Outfalls 001, 002, or 003.

During the Sludge Lancing Process, demineralized water or secondary water is used to pressure clean the steam generators during outage periods. The water is recirculated through temporary filters to remove entrained solids. The major constituent of the solids is iron oxide from the steam generators. The water is then returned to the steam generators and can be drained to Outfalls 00A, 00B, to Outfall 001, 002, 003, 00D or 00H. The suspended solids are analyzed for radioactivity prior to disposal.

OUTFALL 00C - Plant Heating Boiler

A heating boiler (150,000 lb/hr capacity) operates to supply plant heating and auxiliary steam when Unit 1 and/or Unit 2 are out of service. The boiler is also fired periodically for testing purposes to ensure its availability.

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During periods when not in operation, the heating boiler may be stored full of treated boiler water containing up to 400 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and or 50 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for corrosion protection. Prior to use, this "wet lay-up" water is drained to Outfall 00C via blowdown, which discharges to the intake forebay. The volume drained is approximately 600 gallons. This boiler may also be occasionally drained for maintenance activities, approximately 6,000 gallons of treated boiler water would be directed to Outfall 00C or 00D/00H for such purposes.

Impurities from the boiler water consisting primarily of insoluble iron and copper are discharged via blowdown (30 GPM) to the intake forebay during operation as needed for Chemistry control. Boiler water treatment additives consist of up to 15 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, up to 150 ppb hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 150 ppb carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and 25 ppm aryl sulfate (from NALCO 22199) for flow testing purposes.

Just after boiler shutdown, the boiler may be placed in dry layup. The boiler contents (up to 6,000 gallons) are drained via blowdown to the intake forebay. Boiler water treatment additives consist of up to 3 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment and up to 150 ppb hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or 150 ppb carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging. The boiler is then dried out and stored empty This process saves on chemicals and prevents unnecessary discharge of wet layup chemicals.

A smaller boiler may be installed to provide back-up heat if the permanent heating boiler was out of service. This back-up boiler may be located outdoors on the West Side of the turbine building. The blowdown line is directed to the Unit One forebay, near the same discharge point as the permanently installed heating boiler.

The same boiler treatment chemistry will be maintained in the back-up boiler as is used in the permanent heating boiler. The back-up boiler treatment additives consist of ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for pH adjustment, and hydrazine [Betz Powerline Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] and/or carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging. This boiler may be occasionally drained for maintenance activities, approximately 6,000 gallons of treated boiler water would be directed to Outfall 00C for such purposes. Impurities from the boiler water consisting primarily of insoluble iron and copper are discharged via blowdown (30 GPM maximum) to the intake forebay during operation as needed for Chemistry control.

OUTFALL 00G - Reverse Osmosis System

The Reverse Osmosis System (RO) is used to assist in the removal of dissolved solids from the lake water prior to demineralization. Reject water flow is directed to the forebay, which leads to Outfalls 001, 002, and 003. Reject water flow rates may reach up to 0.360 MGD. The RO system must maintain very clean membranes to assure efficient operation and purity of water. Several methods are used to maintain this level of cleanliness from scale and biofouling. Hydrochloric acid or sulfuric acid is fed at approximately 1.3 GPH continually when the RO is in service to lower the pH to reduce the scaling tendencies of the water. The reject water from the RO unit consists of concentrated Lake Michigan water and a small amount of acid that inhibits scale buildup in the membranes.

Approximately once per month, a flush is performed using approximately 1,000 gallons of a nominal 0.05% hydrochloric acid solution. This is followed with approximately 1,000 gallons of a nominal 0.1% sodium hydroxide solution. This flush will dissolve any scale that deposits on the membranes. The total amount of flushing solution will average approximately 5,000 gallons per event. Sodium bisulfite is used to preserve the membranes during long-term shutdown periods. Approximately 15 lbs. of sodium bisulfite per year is used in this manner.

The chemical cleaning involves several steps and may contain citric acid, hydrochloric acid, phosphoric acid, sodium hydroxide, and a neutral pH detergent. The periodic cleaning process averages approximately 10,000 gallons per event, diverted either to the Turbine Room Sump (Outfall 00H/00D), through the Neutralization Tank to the Turbine Room Sump (Outfall 00H/00D), or to the Circulating Water Forebay (Outfall 001, 002, or 003).

OUTFALL 00H - Turbine Room Sump Emergency Overflow

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Utility wastewater from within the plant is discharged via the turbine room sump (TRS) into an on-site absorption pond (Outfall 00D). The normal disposition of these wastewaters is to an on-site absorption pond, which eventually vents via groundwater to Lake Michigan. In the unlikely event that the normal flow path to the absorption pond is not available, the overflow line (Outfall 00H) will direct the TRS flow to the plant's intake forebay. The wastewaters associated with this Outfall include:

Wastes from the makeup water treatment system.

- NESW: (144,000 GPD) The main contributor to this waste stream is the degassifier pump seal water. Non-Essential Service Water (NESW) from Lake Michigan supplies the vacuum degassifier pumps which utilize up to 100 GPM to remove non-condensable gases (primarily carbon dioxide and oxygen) from the makeup plant water and exhausts them to the atmosphere.
- Pre-filter backwash: (Estimated 98,000 GPD) Six pre-filters are backwashed with Lake Michigan water to remove the suspended matter captured on the filter media. Alum solution (aluminum sulfate 0 5 lb. per gallon) is added to the pre-filter influent as a flocculent. The alum is added via a coagulant feed pump. Approximately 50 lb./day of alum is used in this process. The alum contained in the backwash is discharged in the form of insoluble aluminum hydroxide.
- Carbon filter backwash: (Estimated 42,000 GPD) Carbon filters are periodically backwashed with Lake Michigan water to the TRS. These filters primarily remove organics, chlorine and small amounts of iron.
- Demineralizer regeneration: (Estimated 50,000 gallons per regeneration) occurs 2-4 times per month when the RO is in service and more often when it is not in service. Dilute sulfuric acid and sodium hydroxide used by the system to regenerate the resin. Dilute sulfuric acid, sodium hydroxide, and contaminates from the demineralization process is discharged to the neutralization tank or TRS. The pH is then adjusted to between 5.5 and 9.0 with sulfuric acid, or sodium hydroxide prior to discharge.
- MUP Neutralization Tank provides a place for demineralization regeneration wastes, and Reverse Osmosis Unit cleaning flushes to be neutralized prior to being discharged to the TRS and ultimately

the absorption pond. When the MUP resin beds are regenerated, up to 50,000 gallons of regeneration chemicals, and backwash waters are processed in the neutralization tank. The Reverse Osmosis cleaning flushes average approximately 5,000 gallons per event. When the water is neutralized, it is pumped to the TRS via a 2,000 GPM neutralization waste pump.

- The Retention Tank is periodically blown down, discharging small volumes of solid material removed by settling. The retention tank contains a mixture of Lake Township water and filtered Lake Michigan water waiting further processing by the Makeup Plant.
- The Reverse Osmosis System (RO) Cleaning. Normal reject water flow is to Lake Michigan via Outfall 00G. The RO system must maintain very clean membranes to assure efficient operation and purity of water. Several methods are used to maintain this level of cleanliness from scale and biofouling. Hydrochloric acid or sulfuric acid is fed at approximately 1.3 GPH continually when the RO is in service to lower the pH to reduce the scaling tendencies of the water. The reject water from the RO unit consists of concentrated Lake Michigan water and a small amount of acid that inhibits scale buildup in the membranes.

Approximately once per month, a flush is performed using approximately 1,000 gallons of a nominal 0.05% hydrochloric acid solution. This is followed with approximately 1,000 gallons of a nominal 0.1% sodium hydroxide solution. This flush will dissolve any scale that deposits on the membranes. The total amount of flushing solution will average approximately 5,000 gallons per event. Sodium bisulfite is used to preserve the membranes during long-term shutdown periods. Approximately 15 lbs. of sodium bisulfite per year is used in this manner.

The chemical cleaning involves several steps and may contain citric acid, hydrochloric acid, phosphoric acid, sodium hydroxide, and a neutral pH detergent. The periodic cleaning process averages approximately 10,000 gallons per event, diverted either to the Turbine Room Sump (Outfall 00H), through the Neutralization Tank to the Turbine Room Sump (Outfall 00H), or to the Circulating Water Forebay (Outfall 001, 002, or 003).

Waste from miscellaneous processes.

 During periods when not in operation, the heating boiler may be stored full of treated boiler water containing at most 400 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and/or 50 ppm

ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for corrosion protection. Prior to use, this "wet lay-up" water is drained to the TRS. The volume drained is approximately 600 gallons.

- The Circulating Water System cooling water contained in the **condensers** during shutdowns are periodically drained to the TRS. (Six condenser halves and 2 feedpump condensers, approximately 37,000 gallons of lake water per half).
- The Component Cooling Water system (CCW) is periodically drained to allow for equipment inspection, maintenance or repair. This system uses demineralized water from the makeup plant as its source of makeup water along with a maximum of: 1200 ppm nitrite [from Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (from Betz Copper-Trol Cu-1, Calgon LCS-60, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103, and 25 ppm aryl sulfate (from NALCO 22199). The infrequent drainings release approximately 60,000 gallons of treated water to the TRS per year.
- There are four Emergency Diesel Generators that are each cooled by an Emergency Diesel Generator cooling jacket water system (DJW), which employs chemical control for corrosion with a maximum of 2000 ppm nitrite [Calgon LCS 60 or Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole [Betz Copper-Trol Cu-1, Calgon LCS-60, or equivalent]), 1000 ppm molybdate from Betz Corrshield MD 4103, and 25 ppm aryl sulfate [from NALCO 22199].

This system is drained through the floor drains to the TRS when maintenance is performed. Each system volume is approximately 1000 gallons. Any system leaks would also be directed to the floor drain during normal operations.

 Control Room Air Conditioning (CRAC) drains: Approximately 1440 gallons/yr. of CRAC water is drained to the TRS. CRAC Water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent],

methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (Calgon LCS-60, Betz Copper-Trol Cu-1, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103, and 25 ppm aryl sulfate (NALCO 22199). The system may be flushed with demineralized water, and when completed, corrosion control chemicals will be added back to the system. No additions of corrosion controlling chemicals are done during the demineralized water flush.

- The Essential Service Water systems (ESW) and Non-Essential Service Water systems (NESW) are also periodically drained to allow for equipment inspection, maintenance, or repair. These drains may discharge Lake Michigan water used for non-contact cooling into the TRS. This water may be chlorinated for zebra mussel control. During some special treatment periods, this water may contain zebra mussel biocides, used as a molluscicide for zebra mussel control. Periodically, components of the ESW or NESW systems may be chemically cleaned to remove iron deposits using vendor supplied cleaning solution such as EDTA (ethylenediaminetetraacetic acid) or ascorbic acid, acetic acid and ammonia. These wastes could either be drained to the TRS or Lake Michigan via Outfall 001, 002, or 003.
- During wet lay-up, the steam generators are stored full of water with up to 400 ppm of hydrazine from Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) and 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) are added for corrosion control. The water may also contain up to 20 ppm boron. This water is normally drained to surface water via NPDES Outfalls 00A or 00B, but may be drained to the TRS in some instances. Drain volume will be approximately 32,000 gallons for each of the unit's four steam generators.
- The Miscellaneous Drain Tanks can be aligned to discharge to the TRS. As much as 350,000 gallons per day per unit may be directed to the TRS to control the chemistry limitations on the secondary water systems. Water chemistry is primarily the same as in the steam generators. This type of batch drain occurs in concert with condensate flushing activities, or it may occur during normal operation to adjust system chemistry. The overboarded water is normal secondary water. It may contain a mixture of ethanolamine, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], or carbohydrazide (NALCO 1250 plus, or equivalent). Maximum flows may approach 240 GPM as makeup plant water supplies can deliver.

Condensate flushes are performed periodically to clean up the plant's secondary system prior to startup, and can be discharged to the TRS. Water containing up to 2 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboard to the TRS as required to remove contaminants. This flow rate averages 70 GPM, but may reach 600 GPM for short periods of time. The flow rate is dependent on water demands in the plant. Maximum output from the MUP is approximately 600 GPM.

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- Around the plant, miscellaneous sumps collect an estimated 45,000 GPD of water from various equipment drains (ESW pipe tunnel sump). Water and condensate leaks from valves and pumps (Circulating Water condenser pit sumps, ESW pipe tunnel sump, heater drain pump room sump, screen wash pump room sump, acid and caustic room sumps, elevator pit sumps, screenhouse electrical equipment enclosure sump) will also be drained to the TRS. Steam jet air ejector drains also are directed to the heater drain pump room sump prior to pumping to the TRS. Betz FerroQuest FQ LP 7200 may be added to this sump to prevent scale buildup.
- Miscellaneous floor drains are located throughout the plant to provide a safe working environment by routing spilled or leaked water to the TRS. The major chemical influx into these drains is from general floor cleaning products used to maintain the floors. Also routed to the TRS through the floor drains are fire protection water, chlorinated Lake Township water, drinking water, cooling water (ESW/NESW), and drains from bioboxes used to monitor the zebra mussel control measures and other chemical control monitors. The bioboxes will discharge chlorine and zebra mussel biocides during periods when the Service Water Systems are treated with previously mention biological control agents.
- Chemical feed tank drains (drains are limited to emergencies only). There are eight chemical feed tanks that are approximately 200 gallons each that contain hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] at approximately 2%, ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), at approximately 5%, carbohydrazide (NALCO 1250 plus, or equivalent), approximately 2%. Normal process will be to collect these tank volumes to be reused whenever possible.

- Chemical cleaning tank drains: During refueling and maintenance outages, the chemical cleaning tank, and or temporary tanks may be used to mix borax (sodium tetraborate @ approximately 2000 ppm as boron) solutions for ice making operations. Small portions of the system may be drained to the TRS. In the unlikely event that a full tank is drained, approximately 3500 gallons will be directed to the TRS.
- Non-radiological chemical lab sink and floor drains are routed to the TRS for disposal. The drains carry water and the wastes generated while performing analyses and preparing laboratory standard including those on the attached list. Also discharged will be glassware cleaning and normal laboratory cleaning wastes. The average volume directed to the TRS is estimated to be 500 -1000 GPD.
- Secondary sample water from continuous analyzers are routed to drains which discharge to the TRS and/or the miscellaneous drain tank. The analyzers are on the cycles that may contain as much as 150 ppb hydrazine from either a direct feed or (as a breakdown product of carbohydrazide, and 2.5 ppm ethanolamine. The analyzers measure corrosion transport at an average flow of 1440 gallons per day when in operation.
- Miscellaneous sealing and cooling water (MSCW) supplies cooling and sealing water to the TRS pumps, Condensate Booster Pumps, Circulating Water Pumps, Vacuum Priming Pumps, Drain Seal Reservoir Tanks, MSCW pump sealing water, screen wash pumps sealing water, and Drain Sample Coolers. The flow per day may reach approximately 576,000 gallons; this water is filtered and chlorinated Lake Michigan water.
- Non-essential service water supplies approximately 53,000 GPD of non-contact cooling water to various sample coolers throughout the plant's turbine building.

• Chemical spills that enter the TRS may be neutralized within the sump to prevent a discharge to the environment. The potential for spills to the TRS exists for the following chemicals with the proposed neutralizers listed:

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Chemical	Associated Neutralizer
Sulfuric acid	Sodium hydroxide
Sodium hydroxide	Sulfuric acid
Sodium hypochlorite	Sodium thiosulfate
Hydrazine	NESW (lake water), Hydrogen peroxide, sodium hypochlorite.
Ethanolamine	Sodium Hypochlorite, Hydrogen Peroxide, or ozone.
Ethylene glycol	Hydrogen peroxide

Reduction of hydrazine and ETA prior to discharge to the absorption pond may include additions of chemicals such as sodium hypochlorite, hydrogen peroxide, or ozone to the Turbine Room Sump in batches, or to the discharge piping as continuous treatment. A downstream treatment system provided by a vendor may be used to break down the hydrazine and ETA.

ADDITIONAL CHEMICAL LAB ANALYSES

Additional Information Section I Item 11 Donald C. Cook Nuclear Plant Surface Water Permit Application

Plant Chemistry Lab (To Outfall 00H/00D)

Laboratory sink drains from the 633' Turbine lab are directed to the 90,000 gallon Turbine Room Sump. The sump contents are normally directed to the groundwater discharge (outfall 00D). Occasionally the Emergency by-pass may be utilized and the sump's contents will be discharged to the surface water discharge (outfall 00H). The following analyses are performed in the lab. Laboratory wastes from the analyses are discarded in the sink.

Parameter	Analysis Method		
Nitrite	HACH DR-2000 Method 373,		
	HACH DR 2010 Method 373		
Hydrazine	ASTM D-1385 -88		
Oil and Grease	EPA-600-4-79-020 Method 413.1		
pH	Standard Methods for the examination of Water		
	and Wastewater, ASTM-1293		
Total Phosphorus	EPA-600-4-79-020 Method 365.3		
Sulfate	EPA-600-4-79-020 Method 375.4		
Total Residual Chlorine	EPA-600-4-79-020 Method 330.5		
Ethanolamine (ETA)	Betz Standard Operating Procedure. 9Betz		
	proprietary Method adapted from HACH Dr-2000		
	1,2- Naphthoquinone-4-sulfonic acid Method.		
ICP Metals	Standard Methods for Examination of water and		
	wastewater - 17 th ed. 1989, 3120B.		
Tolyltriazole	HACH DR-2000 Method 730		
Carbohydrazide	HACH DR-2000 Method 732		
	HACH DR-2010 Method 182		
N,N Diethylhyroxylamine (DEHA)	HACH DR-2010 Method 182		
Silica	ASTM D 859-88		

GROUNDWATER DISCHARGES

OUTFALL 00D - Turbine Room Sump

Utility wastewater from within the plant is discharged via the turbine room sump (TRS) into an on-site absorption pond (Outfall 00D). The normal disposition of these wastewaters is to an on-site absorption pond, which eventually vents via groundwater to Lake Michigan. In the unlikely event that the normal flow path to the absorption pond is not available, the overflow line (Outfall 00H) will direct the TRS flow to the plant's intake forebay. The wastewaters associated with this Outfall include:

Wastes from the makeup water treatment system.

- NESW: (144,000 GPD) The main contributor to this waste stream is the degassifier pump seal water. Non-Essential Service Water (NESW) from Lake Michigan supplies the vacuum degassifier pumps which utilize up to 100 GPM to remove non-condensable gases (primarily carbon dioxide and oxygen) from the makeup plant water and exhausts them to the atmosphere.
- Pre-filter backwash: (Estimated 98,000 GPD) Six pre-filters are backwashed with Lake Michigan water to remove the suspended matter captured on the filter media. Alum solution (aluminum sulfate 0.5 lb. per gallon) is added to the pre-filter influent as a flocculent. The alum is added via a coagulant feed pump. Approximately 50 lb./day of alum is used in this process. The alum contained in the backwash is discharged in the form of insoluble aluminum hydroxide.
- Carbon filter backwash: (Estimated 42,000 GPD) Carbon filters are periodically backwashed with Lake Michigan water to the TRS. These filters primarily remove organics, chlorine and small amounts of iron.
- Demineralizer regeneration: (Estimated 50,000 gallons per regeneration) occurs 2-4 times per month when the RO is in service and more often when it is not in service. Dilute sulfuric acid and sodium hydroxide used by the system to regenerate the resin. Dilute sulfuric acid, sodium hydroxide, and contaminates from the demineralization process is discharged to the neutralization tank or TRS. The pH is then adjusted to between 5.5 and 9 0 with sulfuric acid, or sodium hydroxide prior to discharge.

- MUP Neutralization Tank provides a place for demineralization regeneration wastes, and Reverse Osmosis Unit cleaning flushes to be neutralized prior to being discharged to the TRS and ultimately the absorption pond. When the MUP resin beds are regenerated, up to 50,000 gallons of regeneration chemicals, and backwash waters are processed in the neutralization tank. The Reverse Osmosis cleaning flushes average approximately 5,000 gallons per event. When the water is neutralized, it is pumped to the TRS via a 2,000 GPM neutralization waste pump.
- The Retention Tank is periodically blown down, discharging small volumes of solid material removed by settling. The retention tank contains a mixture of Lake Township water and filtered Lake Michigan water waiting further processing by the Makeup Plant.
- The Reverse Osmosis System (RO) Cleaning. Normal reject water flow is to Lake Michigan via Outfall 00G. The RO system must maintain very clean membranes to assure efficient operation and purity of water. Several methods are used to maintain this level of cleanliness from scale and biofouling. Hydrochloric acid or sulfuric acid is fed at approximately 1.3 GPH continually when the RO is in service to lower the pH to reduce the scaling tendencies of the water. The reject water from the RO unit consists of concentrated Lake Michigan water and a small amount of acid that inhibits scale buildup in the membranes.

Approximately once per month, a flush is performed using approximately 1,000 gallons of a nominal 0.05% hydrochloric acid solution. This is followed with approximately 1,000 gallons of a nominal 0.1% sodium hydroxide solution. This flush will dissolve any scale that deposits on the membranes. The total amount of flushing solution will average approximately 5,000 gallons per event. Sodium bisulfite is used to preserve the membranes during long-term shutdown periods. Approximately 15 lbs. of sodium bisulfite per year is used in this manner.

The chemical cleaning involves several steps and may contain citric acid, hydrochloric acid, phosphoric acid, sodium hydroxide, and a neutral pH detergent. The periodic cleaning process averages approximately 10,000 gallons per event, diverted either to the Turbine Room Sump (Outfall 00H), through the Neutralization Tank to the Turbine Room Sump (Outfall 00H), or to the Circulating Water Forebay (Outfall 001, 002, or 003).

Waste from miscellaneous processes.

- During periods when not in operation, the heating boiler may be stored full of treated boiler water containing at most 400 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) for oxygen scavenging and/or 50 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) for corrosion protection. Prior to use, this "wet lay-up" water is drained to the TRS. The volume drained is approximately 600 gallons.
- The Circulating Water System cooling water contained in the **condensers** during shutdowns are periodically drained to the TRS. (Six condenser halves and 2 feedpump condensers, approximately 37,000 gallons of lake water per half).
- The Component Cooling Water system (CCW) is periodically drained to allow for equipment inspection, maintenance or repair. This system uses demineralized water from the makeup plant as its source of makeup water along with a maximum of: 1200 ppm nitrite [from Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203, or equivalent], 100 ppm gluteraldehyde [from Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (from Betz Copper-Trol Cu-1, Calgon LCS-60, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103, and 25 ppm aryl sulfate (from NALCO 22199). The infrequent drainings release approximately 60,000 gallons of treated water to the TRS per year.
- There are four Emergency Diesel Generators that are each cooled by an Emergency Diesel Generator cooling jacket water system (DJW), which employs chemical control for corrosion with a maximum of 2000 ppm nitrite [Calgon LCS 60 or Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole [Betz Copper-Trol Cu-1, Calgon LCS-60, or equivalent]), 1000 ppm molybdate from Betz Corrshield MD 4103, and 25 ppm aryl sulfate [from NALCO 22199].

This system is drained through the floor drains to the TRS when maintenance is performed. Each system volume is approximately 1000 gallons. Any system leaks would also be directed to the floor drain during normal operations.
- Control Room Air Conditioning (CRAC) drains: Approximately 1440 gallons/yr. of CRAC water is drained to the TRS. CRAC Water is demineralized water, and may contain up to: 2000 ppm nitrite [Calgon LCS 60, Betz Corrshield NT 4205, BETZ CORRSHIED NT 4201, Betz Corrshield NT 4203 or equivalent], 100 ppm gluteraldehyde [Betz Spectrus NX 1105, Calgon H-300, or equivalent], methyl (bis) thiocyanate (10 ppm) [from Betz 3610 or equivalent], 60 ppm tolyltriazole (Calgon LCS-60, Betz Copper-Trol Cu-1, or equivalent)), 1000 ppm molybdate from Betz Corrshield MD 4103, and 25 ppm aryl sulfate (NALCO 22199). The system may be flushed with demineralized water, and when completed, corrosion control chemicals will be added back to the system. No additions of corrosion controlling chemicals are done during the demineralized water flush.
- The Essential Service Water systems (ESW) and Non-Essential Service Water systems (NESW) are also periodically drained to allow for equipment inspection, maintenance, or repair. These drains may discharge Lake Michigan water used for non-contact cooling into the TRS. This water may be chlorinated for zebra mussel control. During some special treatment periods, this water may contain zebra mussel biocides, used as a molluscicide for zebra mussel control. Periodically, components of the ESW or NESW systems may be chemically cleaned to remove iron deposits using vendor supplied cleaning solution such as EDTA (ethylenediaminetetraacetic acid) or ascorbic acid, acetic acid and ammonia These wastes could either be drained to the TRS or Lake Michigan via Outfall 001, 002, or 003.
- During wet lay-up, the steam generators are stored full of water with up to 400 ppm of hydrazine from Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H or 40 ppm carbohydrazide (NALCO 1250 plus, or equivalent) and 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001) are added for corrosion control. The water may also contain up to 20 ppm boron. This water is normally drained to surface water via NPDES Outfalls 00A or 00B, but may be drained to the TRS in some instances. Drain volume will be approximately 32,000 gallons for each of the unit's four steam generators.
- The Miscellaneous Drain Tanks can be aligned to discharge to the TRS. As much as 350,000 gallons per day per unit may be directed to the TRS to control the chemistry limitations on the secondary water systems. Water chemistry is primarily the same as in the steam generators. This type of batch drain occurs in concert with condensate flushing activities, or it may occur during normal operation to adjust system chemistry. The overboarded water is normal secondary water. It may contain a mixture of ethanolamine, hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010,

NALCO 19H], or carbohydrazide (NALCO 1250 plus, or equivalent). Maximum flows may approach 240 GPM as makeup plant water supplies can deliver.

- Condensate flushes are performed periodically to clean up the plant's secondary system prior to startup, and can be discharged to the TRS. Water containing up to 2 ppm hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H], 10 ppm carbohydrazide (NALCO 1250 plus, or equivalent), 100 ppm ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), is overboard to the TRS as required to remove contaminants. This flow rate averages 70 GPM, but may reach 600 GPM for short periods of time. The flow rate is dependent on water demands in the plant. Maximum output from the MUP is approximately 600 GPM.
- Around the plant, miscellaneous sumps collect an estimated 45,000 GPD of water from various equipment drains (ESW pipe tunnel sump). Water and condensate leaks from valves and pumps (Circulating Water condenser pit sumps, ESW pipe tunnel sump, heater drain pump room sump, screen wash pump room sump, acid and caustic room sumps, elevator pit sumps, screenhouse electrical equipment enclosure sump) will also be drained to the TRS. Steam jet air ejector drains also are directed to the heater drain pump room sump prior to pumping to the TRS. Betz FerroQuest FQ LP 7200 may be added to this sump to prevent scale buildup.
- Miscellaneous floor drains are located throughout the plant to provide a safe working environment by routing spilled or leaked water to the TRS. The major chemical influx into these drains is from general floor cleaning products used to maintain the floors. Also routed to the TRS through the floor drains are fire protection water, chlorinated Lake Township water, drinking water, cooling water (ESW/NESW), and drains from bioboxes used to monitor the zebra mussel control measures and other chemical control monitors. The bioboxes will discharge chlorine and zebra mussel biocides during periods when the Service Water Systems are treated with previously mention biological control agents.
- Chemical feed tank drains (drains are limited to emergencies only). There are eight chemical feed tanks that are approximately 200 gallons each that contain hydrazine [Betz Cortrol OS5035, Betz Cortrol OS5010, NALCO 19H] at approximately 2%, ethanolamine (Betz Powerline 1440, Betz Powerline 1480, NALCO 92UM001), at approximately 5%, carbohydrazide (NALCO 1250 plus, or equivalent), approximately 2%. Normal process will be to collect these tank volumes to be reused whenever possible.

- Chemical cleaning tank drains: During refueling and maintenance outages, the chemical cleaning tank, and or temporary tanks may be used to mix borax (sodium tetraborate @ approximately 2000 ppm as boron) solutions for ice making operations. Small portions of the system may be drained to the TRS. In the unlikely event that a full tank is drained, approximately 3500 gallons will be directed to the TRS.
- Non-radiological chemical lab sink and floor drains are routed to the TRS for disposal. The drains carry water and the wastes generated while performing analyses and preparing laboratory standard including those on the attached list. Also discharged will be glassware cleaning and normal laboratory cleaning wastes. The average volume directed to the TRS is estimated to be 500 -1000 GPD.
- Secondary sample water from continuous analyzers are routed to drains which discharge to the TRS and/or the miscellaneous drain tank. The analyzers are on the cycles that may contain as much as 150 ppb hydrazine from either a direct feed or (as a breakdown product of carbohydrazide, and 2.5 ppm ethanolamine. The analyzers measure corrosion transport at an average flow of 1440 gallons per day when in operation.
- Miscellaneous sealing and cooling water (MSCW) supplies cooling and sealing water to the TRS pumps, Condensate Booster Pumps, Circulating Water Pumps, Vacuum Priming Pumps, Drain Seal Reservoir Tanks, MSCW pump sealing water, screen wash pumps sealing water, and Drain Sample Coolers. The flow per day may reach approximately 576,000 gallons; this water is filtered and chlorinated Lake Michigan water.
- Non-essential service water supplies approximately 53,000 GPD of non-contact cooling water to various sample coolers throughout the plant's turbine building.

• Chemical spills that enter the TRS may be neutralized within the sump to prevent a discharge to the environment. The potential for spills to the TRS exists for the following chemicals with the proposed neutralizers listed:

Chemical	Associated Neutralizer
Sulfuric acid	Sodium hydroxide
Sodium hydroxide	Sulfuric acid
Sodium hypochlorite	Sodium thiosulfate
Hydrazine	NESW (lake water), Hydrogen peroxide, sodium hypochlorite.
Ethanolamine	Sodium Hypochlorite, Hydrogen Peroxide, or ozone.
Ethylene glycol	Hydrogen peroxide

Reduction of hydrazine and ETA prior to discharge to the absorption pond may include additions of chemicals such as sodium hypochlorite, hydrogen peroxide, or ozone to the Turbine Room Sump in batches, or to the discharge piping as continuous treatment. A downstream treatment system provided by a vendor may be used to break down the hydrazine and ETA.

ADDITIONAL CHEMICAL LAB ANALYSES

Additional Information Section I Item 11 Donald C. Cook Nuclear Plant Surface Water Permit Application

Plant Chemistry Lab (To Outfall 00H/00D)

Laboratory sink drains from the 633' Turbine lab are directed to the 90,000 gallon Turbine Room Sump. The sump contents are normally directed to the groundwater discharge (outfall 00D). Occasionally the Emergency by-pass may be utilized and the sump's contents will be discharged to the surface water discharge (outfall 00H). The following analyses are performed in the lab. Laboratory wastes from the analyses are discarded in the sink.

Parameter	Analysis Method
Nitrite	HACH DR-2000 Method 373,
	HACH DR 2010 Method 373
Hydrazine	ASTM D-1385 -88
Oil and Grease	EPA-600-4-79-020 Method 413.1
pH	Standard Methods for the examination of Water
	and Wastewater, ASTM-1293
Total Phosphorus	EPA-600-4-79-020 Method 365.3
Sulfate	EPA-600-4-79-020 Method 375.4
Total Residual Chlorine	EPA-600-4-79-020 Method 330.5
Ethanolamine (ETA)	Betz Standard Operating Procedure. 9Betz
	proprietary Method adapted from HACH Dr-2000
	1,2- Naphthoquinone-4-sulfonic acid Method.
ICP Metals	Standard Methods for Examination of water and
	wastewater - 17 th ed. 1989, 3120B.
Tolyltriazole	HACH DR-2000 Method 730
Carbohydrazide	HACH DR-2000 Method 732
-	HACH DR-2010 Method 182
N,N Diethylhyroxylamine (DEHA)	HACH DR-2010 Method 182
Silica	ASTM D 859-88

OUTFALL 00E - Sanitary Waste Discharges

The system operates at a designed flow of 50,000 GPD with a maximum flow capacity of 60,000 GPD. The Sequencing Batch Reactor (SBR) system treats the wastewater and discharges to an effluent tank where it can be filtered prior to discharge to one of two seepage lagoons. The lagoons discharge into the · groundwater with the ultimate disposition venting to Lake Michigan. The sludge removed from the digester tank basins is taken to a local POTW (public owned treatment works) for disposal or dewatered – and stored as low level radioactive waste, and disposed of as appropriate.

To aid in the settling process, flocculents such as ferric chloride, pH controllers such as magnesium hydroxide, or polymers (such as Axchem AF4500) are added to the process. To selectively enhance biosolids, bioaugmentation nutrients (such as Bioprime Dosfolat) are added to the process. This is a nutrient that encourages the growth of beneficial microbes in the activated sludge. Sodium hypochlorite is added in small amounts to the process to control filamentous bacteria growth if needed. Sodium hypochlorite and detergent are also added to the sand filters to clean them periodically. These are then backwashed into the equalization basin to be reprocessed by the SBR treatment process.

Plant sanitary waste consists of shower and rest room facilities, and janitor washbasins located throughout the Plant's non-radiological property. Kitchen wastes are generated from the plant cafeteria, the Cook Energy Information Center and Training buildings.

The chemistry training laboratory discharges to the sewage treatment plants through a limestone bed neutralization tank. The chemistry lab is used to train technicians on analyses performed in the plant The discharge from the lab carries water and wastes generated while performing analyses and preparing laboratory standards including those on the attached list. The training building HVAC system also drains through the limestone bed.

The wastewater treatment plant laboratory discharges to the sewage treatment plants. The discharge from the lab carries water and wastes generated from performing analyses and preparing laboratory standards used for compliance monitoring of the sewage treatment plant under groundwater discharge permit M00988.

Portable toilet wastes on the plant site may be collected and discharged to the sewage treatment plants. A biodegradable deodorant is used in the portable toilets Sludge effluent waste may also be recycled through the plants to decrease the amount of sludge for processing when possible.

Miscellaneous rinsing of waste receptacles and possible cleaning operations waste, utilizing various detergents, may be rinsed to the sewage treatment plants.

Site Map



MI0005827

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Donald C. Cook Nuclear Plant Part 11

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MI0005827



Adjacent Property Owners

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SECTION I - General Information

PLEASE TYPE OR PRINT

NODES DERMIT	NUMP

FACILITY NAME		NPDES PERMIT NUMBER		
nald C Cook Nuclear Plant		MI0005827		
13 LIST ADJACENT PROPERTY OWNE	RS			
List the names and addresses of all	property owners adjacent to the fa	icility, treatment systems, and discharge	ge locations	To submit additional
information see page II, item 8.				
Name	Address	City	State	ZIP Code
Tengerstrom, Eric H	3415 S, 59 th St	Cicero	IL	60650
Gielniewski, Michael Z & Teresa B	4500 Lake Rd	Stevensville	м	49127
Vesely, Alan Kobler, Rich+Matthews	5004 S. Long Ave	Chicago	<u> </u>	60638
Lewis, James G Jr	4183 Lake Ct	Stevensville	MI	49127
Gilpin, Clark and Nancy	4291 Lake Rd	Stevensville	мі	49127
Giese, Marie E.	3180 N Lakeshore Drive	Chicago	60657	
Gottschall, Bruce A & Susan M	5216 Blackstone Dr	Chicago	<u> </u>	60615
Baika, Ronald A & Janet M	3334 Louise Dr	Lansing	IL	60438
Michigan Dept of Natural Resources	PO Box 307358	Lansing	м	48909
Franklin Real Estate	c/o PO Box 60	Ft Wayne	IN	46801
emmel, Edward P.	9617 E. Shore Dr	Oak Lawn	IL	60453
Caparo, William E. & Oyler, Kathryn	122 S. Ellsworth Pl	South Bend	IN	46635
Rosemary Beach Corp	3415 S 59 th St	Cicero	IL	60650
Lake Charter Twp	3220 Shawnee Road	Bridgman	м	49106
Indiana Michigan Power	PO Box 60	Ft Wayne	IN	46801
Technisand, Inc	PO Box 177	Wedron	IL	50557

14. STORM WATER DISCHARGES

Is the storm water from this facility discharged to the waters of the state either directly or through a separate storm water drainage system? Α

Yes 🗌 No

B Is the discharge (see definitions on page in of the application)

Non-Regulated Storm Water

Regulated Storm Water

C. Is any of the storm water discharged from

Secondary containment structures that are required by state or federal law

🗋 Areas identified on Michigan's list of Sites of Environmental Contamination, pursuant to the Natural Resources and Environmental Protection Act, PA 451 of 1994, Part 201 (formerly 307)

nis completes Section I. TWTDS requesting authorization for domestic wastewaters or biosolids should complete Section II. All other applicants should complete Section III.

If assistance is needed completing this application, contact the Permits Section, telephone number: 517-373-8088.

FACILITY NAME Donald C Cook Nuclear Plant		NPDES PERMIT NUMBER MI0005827		
 LIST ADJACENT PROPERTY OW List the names and addresses of information see page ii, item 8. 	NERS all property owners adjacent to the	facility, treatment systems, and discha	arge locations	To submit additions
Name	Address	City	State	ZIP Code
Ruff, Tmothy	7500 Thorton Dr	Stevensville	м	49127
Emery, Martin; Hopkins, Elwood J	7499 Thorton Dr.	Stevensville	MI	49127
Indiana Michigan Power	PO Box 24400	Canton	он	44701
Blue Jay Association	PO Box 2000	St. Joseph	м	49085
Michigan Dept of Transportion		Lansing	м	48900
Franklin Real Estate	c/o PO Box 60	Ft. Wayne	IN	46801
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This completes Section I. TWTDS requesting authorization for domestic wastewaters or biosolids should complete Section II. All other applicants should complete Section III.

If assistance is needed completing this application, contact the Permits Section, telephone number: 517-373-8088.

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Section II

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SECTION II - Sanitary Wastewater

Section II is to be completed by Publicly Owned Treatment Works discharging treated or untreated sanitary and industrial wastewater to the surface waters. Section II is also to be completed by all privately owned treatment facilities discharging treated sanitary wastewater to the surface waters. The privately owned treatment facilities in this category generally include Mobile Home Parks, Campgrounds, Condominiums, Hotels and Motels, Nursing Homes, etc.

		A. Facility	Information	
FA	CILITY NAME		NPDES PERMIT NUMBER	
1.	 SERVICE AREA INFORMATION A List the source(s) of water supply in the area water(s) from which intake water is drawn. Publicly Owned Treatment Works shall provide B List the governmental jurisdictions (cities, to population in each jurisdiction? Is the jurisdiction? Is the jurisdictioned, what percentage is combined? 	a served by sewers Ident e the following information winships, villages, etc.) that liction's collection system a To submit additional inform	ify groundwater wells, surface water intakes and on: at this facility serves (applicants should include is separate, combined or both? If the collection synation see page ii, item 8	t the name(s) of any surface themselves) What is the rstem is both separate and
	Name Pol	pulation Served	Type of Collection System	Percent Combined
-				
r	bivatoly Owned Treatment Works shall provide	a the following information	on'	
£	D. Provide the number of residential units serv	ed by this facility		
	E. Describe the service area (mobile home par	rk, condominium, nursing l	home, industrial facility, etc)	
2.	BIOMONITORING FOR ACUTE AND CHRONIC Publicly Owned Treatment Works (POTWs) me effluent toxicity (WET) tests for each of the facil greater than or equal to one (1) million gallons p 3) POTWs required to develop a FIPP At a minimum, these results must include quart prior to this application. In addition, submit with	C TOXICITY eeting one or more of the fo lity's discharge points excl ber day, 2) POTWs with ar eerly WET testing for a 12- h this application the result	ollowing criteria must submit with this application uding combined sewer overflows: 1) POTWs with a approved Federal Industrial Pretreatment Prog month period prior to this application, or at least to of any other WET tests from the past 5 years	n the results of whole th a design flow rate gram (FIPP); and/or t annually from the 5 years If a WET test in the past
	4-½ years revealed toxicity, provide all the init conducted For WET Test Guidance and Rec	formation on the cause o quirements see page 14 o	of toxicity or the results of all toxicity reduction of the N.P.D.E.S. Permit Application Appendi	n evaluations, if any were x.

Michigan Department of Environmental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION II - Sanitary Wastewater

B. Outfall Information

STRUCTIONS FOR COMPLETING SECTION II, ITEM B.1.

This item requests detailed information on each outfall at the facility. For this item, outfall refers to the discharge of treated wastewater. Fill in the Outfall Number in the top right hand box identifying the outfall by number, e.g., 001, 002, etc. (applicants with existing NPDES permits should refer to the facility's current NPDES permit for outfall number identification). For each outfall provide the location, the expected and/or measured volume of effluent discharged, the frequency of discharge and the flow variation of the discharge.

- A WATERSHED: Identify the receiving stream's watershed Each receiving stream will eventually discharge into one of the Great Lakes or one of the connecting waters (i.e. Detroit River, St. Mary's River, St. Clair River). Indicate from which river the discharge eventually discharges to the Great Lakes. For example: Sycamore Creek is tributary to the Red Cedar River, which is tributary to the Grand River, which discharges to Lake Michigan. Consequently a discharge to the Sycamore Creek is a discharge to the Grand River Watershed.
- B. RECEIVING WATER: Identify the exact location of the wastewater discharge point(s) and all areas through which the discharge flows (e.g. storm sewers, open drains, wetlands), if applicable, between the discharge point and the receiving water. Examples of receiving waters are rivers, creeks, drains, etc
- C. COUNTY / TOWNSHIP: Provide the county and township where the outfall is located.
- D. STATE PLANAR COORDINATES: Provide the location of the discharge to the receiving water in State Planar Coordinates. Report State Planar Coordinates using quarter-quarter section, quarter section, section, town and range (e g, NE 1/4, SE 1/4, Section 34, T1N, R12E)
- E LATITUDE / LONGITUDE: Provide the latitude and longitude of the discharge accurate within 15 seconds (e.g., Latitude = 42°27'15", Longitude = -83°02'30") or accurate within 0 004 decimal degrees (e.g., Latitude = 42 454167, Longitude -83 041667).
- F. FACILITY ANNUAL AVERAGE DESIGN FLOW: Enter the Annual Average Design Flow that the facility is designed to treat in millions of gallons per day (MGD) Seasonal dischargers shall enter the total volume (million gallons per year (MGY) of wastewater the facility is designed to treat and discharge per year. This number will be used in determination of appropriate effluent limitations. Also provide the actual annual average facility flow and the maximum daily facility flow for the past three years.
- G. SEASONAL DISCHARGE: A discharge is considered to be seasonal if the facility treats and then stores wastewater throughout the year or portion of the year and discharges it a few days, weeks or months a year. Provide the dates the facility discharges the treated wastewater (e.g., October 15 through November 10) and the average discharge flows (e.g., 5 MGD).
- H. CONTINUOUS DISCHARGE: A discharge is any discharge that is not a seasonal discharge. Provide the approximate hours per day and the number of days per year that the discharge occurs from this outfall. Batch Dischargers shall provide the peak batch flow rate, the number of batches per day, the per batch minimum, average and maximum volumes in gallons, and the per batch minimum, average and maximum batch discharges in minutes.

Sector Last a

SECTION II - Sanitary Wastewater

B Outfall Information

aplete a separate Section II. B. Outfall Information (pages 7 - 15) for each outfall at the facility. Make copies of Section II. B. for each additional outfall that discharges treated wastewater

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LIT	YNAME			NF	DES PERMIT N		OUTF	ALL NUMBER
οU	TFALL INFORMATION (see page 6 for	Instruction on com	pletion of this p	oage)		I	
Ą	Watershed			<u> </u>				
3	Receiving Water			· · · -				
c .	County				Township			
Э.	1/4, 1/4	1/4		Section	<u> </u>	Town	Range	
Ξ	Latitude	ł		<u>I</u>	Longitude	<u></u>	<u>I</u>	
:.	Facility <u>Annual Averag</u> i	e Design Flow	Seasonal Discha Continuous Disc	arge harge	MGY (i	Continue with Item G.) Continue with Item H)		ţ
;	Seasonal Discharge List the discharge perio	ds (by month)	in the space provid	ed below. (for	further guidance	e see the directions for	Item G on page	6)
	From		Through		C	Discharge Volume (MGI	D)	Annual Tota
	From	···	Through		. C	lischarge Volume (MGI	D)	
	From		Through		C)ischarge Volume (MGI	D)	-
	From		Through		C	Discharge Volume (MGI	D)	
1	Continuous Discharge How often is there a dis Provide the actual facil Annual Average Daily	scharge from th ty flows for the Flow (MGD)	is outfall (on the av past three years	verage)	Hours/C	Day Days/ Two Years Ag	Year o	Last Year
	Maximum Daily Flow i	n a Single Day	(MGD)					
	Batch dischargers mi	ist provide the	following addition	onal informati	on:			
	Is there effluent flow ec	ualization?	🗋 Yes	🗋 No				
	Batch Peak Flow Rate	<u></u>		N	umber of batche	es discharged per day.		
	Datch Malure 4		Minimum		Av	erage	Махи	num
	Batch volume (g	anons)						

SECTION II - Sanitary Wastewater

B. Outfall Information

ASE TYPE OR PRINT					
. JILITY NAME		NPDES PERMIT N	IUMBER	OUTFA	
2 EFFLUENT CHARACTERISTICS - CONVENTIONA	L POLLUTANTS		· · · · · · · · · · · · · · · · · · ·		
Existing TWTDS must provide effluent testing dat "maximum daily concentration" and "maximum mont	a for the paramete	rs listed below. (S	ee pages II and III	for sampling definil	ions, including
New TWTDS must provide estimated effluent concer	ntrations for the para	ameters listed below.			
For analytical requirements, see page ii number i item 9 on page ii for addıtional instructions.	5. If Alternate Test	Procedures have	been approved for	any parameter list	ed below, see
Check this box if additional information is includ	led as an attachmen	it. To submit additio	nal information see	page II, Item 8.	
Parameter	Maximum Daily Concentration	Maximum Monthly Concentration	Units	Number of Analyses	Sample Type
Biochemical Oxygen Demand - five day (BOD ₅)			mg/l		Grab
BODs Lowest % Removal	Do Not Use		%		
Carbonaceous BOD ₅ (CBOD ₅)			mg/l		Grab
Carbonaceous BOD ₅ , Lowest % Removal	Do Not Use		%		Grab
Ammonia Nitrogen (as N)			mg/l		Grab
al Suspended Solids			mg/l		
Total Suspended Solids, Lowest % Removal	Do Not Use		%		
Total Dissolved Solids			mg/l		Grab
Total Phosphorus (as P)			mg/l		
Fecal Coliform Bacteria (report geometric means)	max. 7-day		counts/100 ml		Grab
Total Residual Chlorine			μg/l mg/l		Grab
Dissolved Oxygen	min daıly	Do Not Use	mg/l		Grab 24 Hr Comp
рН	ուսար	maximum	standard units		Grab
Temperature			□ °F □ °C		Grab
					Grab
					Grab
					Grab
					24 Hr Comp Grab
······································	 				24 Hr Comp
· · ·					24 Hr Comp

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Michigan Department of Envi mental Quality- Water Division

WASTEWATER DISCHALJE PERMIT APPLICATION

SECTION II - Sanitary Wastewater

B. Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME						NPDI	ES PERMIT	NUMBER	(OUTFALL N	UMBER				
 3 EFFLUENT CH Existing Publicly a FIPP or othen specifically lister discharged using At a minimum, e 	EFFLUENT CHARACTERISTICS - TOXIC POLLUTANTS Existing Publicly Owned Treatment Works (POTWs) with a design flow greater than or equal to 1 0 MGD or an approved Federal Industrial Pretreatment Program (FIPP), or required to develop a FIPP or otherwise required by the permitting authority to provide the information, must provide effluent testing data for the pollutants listed below. Any effluent testing data for pollutants not specifically listed must be included using the in the blank rows provided on page 15. Provide the results of a minimum of three effluent analyses for each outfall through which effluent is discharged using approved methods pursuant to 40 CFR Part 136. Do not include information on combined sewer overflows in this section. At a minimum, effluent testing data must be based on at least three pollutant scans for each outfall discharging effluent to waters of the state. For analytical requirements, see page if number 5.														
All existing POT be present in fac listed in table 5 identified in this	All existing POTWs must provide (unless already provided as specified above): the results of at least one effluent analysis (taken in the last 5 years) for any chemical that is known or believed to be present in facility effluent that is listed in Tables 2, 3 and 4 of the appendix; a measured or estimated effluent concentration for any chemical that is known or believed to be present that is listed in table 5 of the appendix; a measured or estimated concentration for any toxic or otherwise injurious chemical known or believed to be present in facility effluent that is not previously identified in this application; and, results of all other effluent analyses that have been performed within the past 5 years for any chemical listed in Tables 2, 3, 4 and 5.														
New POTWs mu effluent concentr	New POTWs must provide: An estimated effluent concentration for any chemical expected to be present in facility effluent that is listed in Tables 2, 3, 4 and 5 of the appendix, and an estimated effluent concentration for any toxic or otherwise injurious chemical known or believed to be present in facility effluent that is not previously identified in this application.														
Note If the effi that are withdray All effluent data If Alternate Test	Note If the effluent concentrations are estimated, place an E in the "Analytical Method" column. In accordance with Rule 323.1211(7), facilities whose supply water contains toxic pollutants that are withdrawn from and discharged to the same body of water may qualify for intake credits for those toxic pollutants. See Rule 1211(7) for qualification and demonstration requirements. All effluent data submitted in response to this part should be recorded on pages 9–15. To submit additional information see page ii, item 8. If Alternate Test Procedures have been approved for any parameter listed below, see Item 9 on page II for additional Instructions.														
SAMPL	E DATE 🗲											ęs.	n as cra	\$ 53.4 N	a a fine day ta sample Vingan. Rash a santa sample Vingan.
PARAMETER	- CAS () No 2	ୁକ Conc.ୁ ପୁଏସୁ/l)	Conc. (ug/l)	∉ Conc. ⊷ (ug/l)	'⊋ Conc. ⊜ (úġ/l)	° Conc. ∵ (ug/l)	ä Conc;⊜ ∑ (ûg/l) ອ	* Conc. 🐩	Conc. (úg/l)	, Conc.™ ≤ (ug/l)	Conc. (ug/l)	Sample Type	Analytic: Method	OL.	S DL
METALS (TOTAL RE	COVERABL	.E), CYANID	E, PHENOI	S, AND HA	RDNESS							1			
Antimony	7440360														ŗ
Arsenic	7440382												,		· · · ·
Beryllium	7440417														
Cadmium	7440439														•
Chromium	7440473														
Copper	7440508														
Lead	7439921							,							
Mercury (EPA Method 1631)	7439976		·		1 / 1	x .				, , , , , , , , , , , , , , , , , , ,		3			

Michigan Department of Envinemental Quality- Water Division WASTEWATER DISCHAL SE PERMIT APPLICATION SECTION II - Sanitary Wastewater B. Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME					1	NPDES PERMI		OUTFALL NUMBER							
SAMPL	E DATE 🗲				f										
PARAMETER	CAS No.	- Conc. ∰ .⊒∛(ùg/l)~ -	Conc. (ug/l)	Conc. (ug/l)	Conc.	Conc. (ug/l)	Conc. (ug/l)	Conc.	Conc. (ug/l)	້ Conc. ຈໍ (ug/l) ນີ້	22 Conc. 14 27 (ug/l)	ି Sample / ଁ Type ିତ	Analytic Method	QL	DL-
Nickel	7440020													7	'n
Selenium	7782492														
Silver	7440224													,	- *
Thallium	7440280														
Zinc	7440666		· · · · · ·												-
Cyanide	57125														
Total phenolic compounds	None														
Hardness (as CACO ₃)	None														
SAMPL	E DATE 🗲												hing the	, je stati	
PARAMETER	CAS No.	Conc. (ug/l)	Conc.) کر (ug/l)	Conc. (ug/l)	Conc.	∰ Conc.	Conc. (ug/l)	Conc.) (ug/l)	Conc. (ug/l)	Conc: (ug/l)	∴ Conc. ∛ ** (ug/l)	Sample.	Analytic Method	QL	DL
VOLATILE ORGANIC	COMPOUN	IDS											,		
Acrolein	107028														
Acrylonitrile	107131														
Benzene	71432														
Bromoform	75252														
Carbon tetrachloride	56235														
Chlorobenzene	108907														
Chlorodibromometh ane	124481										····				
Chloroethane	75003														
2-chloro-ethylvinyi ether	110758														

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Michigan Department of Enviremental Quality- Water Division

WASTEWATER DISCHARS JE PERMIT APPLICATION

SECTION II - Sanitary Wastewater B. Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME					N	PDES PERMI			OUTFALL NUMBER						
SAMPL	E DATE 🗲												er i	र इ.स. इ.स.	
PARAMETER	CAS No.	Conc (ug/l)	Conc: (ug/l)	Conc. (ug/l)	Conc. (ug/l)	(ug/l)	Conc. 😥 (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	ず Conc	Sample Type	Analytic Method		DL 7
Chioroform	67663														······
Dichlorobromo- methane	75274														
1,1-dichloroethane	75343														
1,2-dichloroethane -	107062							-							
Trans-1,2-dichloro- ethylene	156605														
1,1- dichloroethylene	75354		-												
1,2-dichloropropane	78875													÷	×
1,3-dichloro- propylene	542756					~						ŧ			1
Ethylbenzene	100414												-		-
Methyl bromide	74839													,	
Methyl chloride	74873														
Methylene chloride	75092				1										
1,1,2,2-tetra- chloro ethane	79345														
Tetrachioroethylene	127184														
Toluene	108883														
1,1,1- trichloroethane	71556														
1,1,2- trichloroethane	79005	· · · · · · · · · · · · · · · · · · ·													
Trichloroethylene	79016						-								
Vinyl chloride	75014														

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Michigan Department of Env mental Quality- Water Division WASTEWATER DISCHARS JE PERMIT APPLICATION SECTION II - Sanitary Wastewater B. Outfall Information

PLEASE TYPE OR PRINT

1 44/104 11/14 01																
FACILITY NAME				·	1	IPDES PERM	IT NUMBER	ł		OUTFALL NUMBER						
SAMPL	.E DATE 🗲															
PARAMETER	CAS . No.	Conc. (ug/l)	Conc.	ूँ Conc. (ug/l) के	Conc. ≅ (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc: (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Sample≬ ™Type`**	Analytic : Method	QL	DL	
ACID-EXTRACTABL	E COMPOU	NDS													"	
P-chloro-m-creso	None														5	
2-chlorophenol	95578														-	
2,4-dichlorophenol	120832														, ,	
2,4-dimethylphenol	105679														١	
4,6-dinitro-o-cresol	534521															
2,4-dinitrophenol	51285															
2-nitrophenol	88755															
4-nitrophenol	100027															
Pentachlorophenol	87865															
Phenol	108952															
2,4,6- trichlorophenol	88062															
SAMPL	E DATE 🗲											in a start and a start				
PARAMETER	CAS	Conc. ((ug/l)	Conc. (ug/l)		<u>_}Conc.</u> `(ug/l)	Sonc. ✓ (ug/l)	<u> </u>	Conc. (ug/l)	Conc. (ug/l)	Conc.] (ug/l)	Conc. (ug/l)	Sample : Type	Analytic	QL	DL	
BASE-NEUTRAL CO	MPOUNDS															
Acenaphthene	83329															
Acenaphthylene	208968															
Anthracene	120127															
Benzidine	92875															
Benzo(a)-	56553															

Michigan Department of Environmental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION II - Sanitary Wastewater B. Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME					NF	PDES PERMI	T NUMBER			OUTFALL NUMBER					
SAMPL	E DATE 🗲				I		<u></u>		L			的异理	nr.e	A Profiles in	
PARAMETER	CAS No.	€ Conc. (ug/l)	Conc.	Conc.	Conc. (ug/l)	Conc.	∴Conc. ≨ ੈ`(ug/l)` à		Conc. (ug/l)	Conc.	Conc.	-Sample Type	Analytic Method		DL
Benzo(a)pyrene	50328						· -								
3,4 benzo- fluoranthene	205992														
Benzo(ghi)perylene	191242								1						
Benzo(k)fluoranthe ne	207089														
Bis (2-chloroethoxy) methane	111911													•	÷
Bis (2-chloroethyl)- ether	111444			J									-		-
Bis (2-chloroiso- propyl) ether	108601	-										•		- ~	*
Bis (2-ethylhexyl) phthalate	117817												-	1	•
4-bromophenyl phenyl ether	101553											,		· · · ·	
Butyl benzyl phthalate	85687														
2- chloronaphthalene	91587			-											
4-chlorophenyl phenyl ether	7005723														
Chrysene	218019														
Dı-n-butyi phthalate	84742												-		
Di-n-octyl phthalate	117840														
Dibenzo(a,h) anthracene	53703														1
1,2- dichlorobenzene	95501														
1,3- dichlorobenzene	541731														
1,4- dichlorobenzene	106467														
3,3- dichlorobenzidine	91941						r	2							

Michigan Department of Environmental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION II - Sanitary Wastewater B Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME					NF	PDES PERM	IT NUMBER			OUTFALL NUMBER					
SAMPL	e date 🗲													1 ¹² , ² , 2)	10 - ² - 1
PARAMETER	CAS No.	≫ Conc	l⇔ Conc. 5 ⊖ (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc.	Conc. (ug/l)	Sample . Type	Analytic Method	QL	1
Diethyl phthalate	84662														į
Dimethyl phthalate	131113														
2,4-dinitrotoluene	121142														
2,6-dinitrotoluene	606201														
1,2- diphenylhydrazine	122667														
Fluoranthene	206440														۰ ۱
Fluorene	86737														,
Hexachlorobenzene	118741														
Hexachlorobutadien e	87683														
Hexachlorocyclo- pentadiene	77474														
Hexachloroethane	67721														
Indeno(1,2,3- cd)pyrene	193395														
Isophorone	78591														
Naphthalene	91203														
Nitrobenzene	98953														
N-nitrosodi-n- propylamine	None														
N- nitrosodimethylami	62759														
N- nitrosodiphenylami	86306														
Phenanthrene	85018														
Pyrene	129000													-	



PLEASE TYPE OR PRINT

FACILITY NAME					Ν	NPDES PERMI	T NUMBER			OUTFALL NUMBER				r r	
SAMPL	E DATE 🗲											r seve			
PARAMETER	CAS No.	⊯ Conc. ≝ (ug/l) 🐰	Conc.	Conc. (ug/l)	Conc.	-≷ ♥ Conc. (ug/l)		,	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Sample	Analytic Method	ÂL.	
1,2,4- trichlorobenzene	120821		1												
	,														
-															• .
														,	•
														1	
														ı	
	1														
		······		1 1											
							· · · · · · · · · · · · · · · · · · ·			<u> </u>					
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										<u> </u>					
		<u></u>													
										<u> </u>		. <u> </u>			

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SECTION II - Sanitary Wastewater

C. Combined Sewer System Information

<u>ה</u> ונ	ILITY	NAME			NPDES PERMIT	NUMBER			
 ·	COL Com wast	LECTION SYSTEM If plete this item if there tewater occur. If there	NFORMATION e are outfalls at the treatmeter are more than 10 outfalls	nent facility or along the	collection system	m from which discl	harges of untreated or partially treated		
	ΑE	Estimate the percentage	ge of the collection syster	m that is combined	%				
	вз	System Map Provide :	a map that shows all CS(D discharge points					
	C.S Id c s	System Diagram Prov ocations of major trunk combined sewer system stations.	ride a diagram, either in th k line sewers, both combi m; the locations of in-line	he above map or on a so ined and separate sanit: and off-line storage stri	eparate drawing, ary; the locations uctures; location	of the combined so of points where so of flow regulating	sewer collection system that includes the separate sanitary sewers feed into the g devices and the locations of pump		
•	OUT A la n	FALL INFORMATION dentify the outfall by n number identification, r	umber (e g 001, 002, etc provide the name of the r	c). Applicants with exis receiving water to which	ting NPDES pen the outfall disch	mits should refer to arges.	o their current NPDES permit for outfall		
	ΒĘ	Enter the county and c	aty/township (where apple	cable) in which the outfa	all is located				
	C F	Provide the location in	State Planar Coordinates	S.					
l	DC	Describe the location u	ising latitude and longitud	de (accurate within 15 se	econds)				
ote	: If ti	he outfall discharges e	effluent from a retention to	reatment basin attach a	summary of infl	uent and effluent o	lata from the last five years		
	A	Outfall Number	Receiving Water						
1	в.	County			City or Town	ship			
(c.	1/4,1/4	1/4	Section	Town Range				
I	D.	Latitude (accurate w	nthin 15 seconds)		Longitude (accurate within 15 seconds)				
	A.	Outfall Number	Receiving Water						
ĺ	в.	County			City or Town	ship	• • • • • • • • • • • • • • • • • • •		
(c.	¥4,¥4	1/4	Section	<u>- 1</u>	Town	Range		
I	D.	Latitude (accurate w	nthin 15 seconds)	I	Longitude (a	ccurate within 15 s	seconds)		
,	A. Outfall Number Receiving Water								
E	в.	County	<u></u>		City or Town	ship			
(с.	74,74	1/4	Section		Town	Range		
		Latitude (accurate w	uthin 15 seconds)						

SECTION II - Sanitary Wastewater

C. Combined Sewer System Information

- TASE	TYPE OR PRINT	-		· · · · · · · · · · · · · · · · · · ·	•	-					
J ILITY	NAME		N	IPDES PERMIT NUM	MBER						
OUT	FALL INFORMATION	- Continued	```_		· · · · · · · · · · · · · · · · · · ·						
Use	this sheet to describe	additional outfails Make	additional copies of this	page if necessary.							
. A.	Outfall Number	Receiving Water									
В	County			City or Township			٦.				
С	1/4,1/4	1/4	Section	To	wn	Range	_ ,				
D.	Latitude (accurate v	vithin 15 seconds)		Longitude (accurate within 15 seconds)							
А	Outfall Number	Receiving Water					٦				
в	County City or Township										
C.	1/4,1/4	1/4	Section	То	wn	Range					
D.	Latitude (accurate v	vithin 15 seconds)		Longitude (accurate within 15 seconds)							
А	Outfall Number	Receiving Water			······································						
В	County			City or Township							
C.	1/4,1/4	1/2	Section	Town Range							
D	Latitude (accurate v	vithin 15 seconds)	I	Longitude (accurate within 15 seconds)							
	Outfall Number	Receiving Water			· · · · · · · · · · · · · · · · · · ·						
А							,				
В	County			City or Township							
C.	1/4,1/4	1/4	Section	To	wn	Range					
D.	Latitude (accurate v	vithin 15 seconds)		Longitude (accura	ate within 15 seconds)		,				
А	Outfall Number	Receiving Water									
В	County			City or Township		· · · · · · · · · · · · · · · · · · ·					
C.	1/4,1/4	1/4	Section	To	wn	Range					
D.	Latitude (accurate v	vithin 15 seconds)	I	Longitude (accura	ate within 15 seconds)	, l , l ,					
	L			_1							

SECTION II - Sanitary Wastewater

D. Non-Domestic Wastewater Information

EASE TYPE OR PRINT	· · · · · · · · · · · · · · · · · · ·		-
CILITY NAME		NPDES PERMIT NUMBER	-
SEPTAGE - Does this facility accept s	eptage?	I	·····
No, continue with Item 2 below	ι.		
Yes, on a separate sheet, des nondomestic wastewater a the number of gallons and	cribe the allocation of the Maximu ind septage. The MAHL should in concentrations of the following po	im Allowable Headworks Loading (MAHL) can nclude the treatment plant's design and curre illutants, BOD, TSS, PO4, and NH3 attributat	pacity to domestic wastewater, ent loading, and at a minimum, ble to each wastewater.
INDUSTRIAL AND COMMERCIAL SO	URCES		
A. Does this facility receive any none carned wastes other than human a	domestic wastewater from any ind and household wastes)	dustrial or commercial facilities? (Nondomes	stic wastewater refers to water
🗋 No, c	continue with Section II E.	Yes, continue with B below	<i>ι</i> .
B. Provide the following information			
1) Estimate the average volume	of non-sanitary wastewater receiv	ed by this facility: gallons/day	
Describe the type of nondomes	stic wastewater(s) received by this	s facility in the space provided below (check a	Il that are appropriate).
Wastewater Type	Volume (MGD)	Wastewater Type	Volume (MGD)
Industrial Process Wastewater		Landfill leachate	
Contact cooling water		Trucked Industrial Wastewa	ter
Noncontact cooling water		Other	
C. Is an Industrial Pretreatment Prog also complete Item 5 on page 19	ram (IPP) currently required by t	he DEQ? Note: Applicants with an Industria	al Pretreatment Program must
No, continue with Item 3. below	v.		
Yes, provide the most recent a	pproval date for the following eler	nents of your program Continue with Item 3	. below
Sewer Use Ordinance	Interjurisdictiona	al Agreements Pro	ocedures
Other Legal Authority	Enforcement Re	esponse Plan Lo	cal Limits
RESOURCE CONSERVATION AND F	RECOVERY ACT (RCRA) WASTE	EWATER	
Does the treatment works receive or ha	as it in the last three years receive	ed RCRA hazardous waste by truck, rail or de	edicated pipe?
No, continue with 4 below.			
Yes, provide the following informat "EPA Hazardous Waste Num	ion on a separate sheet The met ber", and the amount of waste rec	hod that the waste is received (truck, rail, or o eived in either mass or volume	dedicated pipe), the waste's
REMEDIATION WASTEWATER			
Does the treatment facility receive (or I	has it been notified that it will rece	eive in the next 5 years) wastes from remedia	activities?
No, continue with Section II.E			
Yes, provide a list on a separate sh	neet that contains the following inf	formation for each current and future remedia	ition site
1) Describe the site and type of fa	icility at which the CERCLA/RCR/	Vor other remedial waste originates or will or	iginate.
2) List the hazardous constituents	that are or are expected to be re	ceived at the POTW Include data on volume	e and concentration if known
3) Describe in detail any treatmen			
by Describe in detail any reacher	t the waste receives before being	discharged to the POTW.	

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SECTION II - Sanitary Wastewater

D. Non-Domestic Wastewater Information

SIG	INIFICANT INDUSTRIAL USER (SIU) INFO	RMATION						
Sup	ply the following information for <u>each</u> SIU th	at discharge	s to the treat	nent plant. Make addition	al copies of this p	bage when necessary.		
А	SIU location information			-				
	Company			-				
	Facility Address							
	City		State	~		Zıp		
B	Describe all of the industrial processes that a	affect or cont	tribute to the	SIU's discharge				
	Describe all of the principal processes and	raw mater	als that affect	t or contribute to the SIU's	discharge			
. .	Describe an of the principal processes and	aw materia	als that allee		disonarge			
		mole) of was	tewater disch	arged to the collection sys	stem Are the disc	charge(s) continuous or interr		
D. I	Flow Rate. What are the average daily volur	ne(3) 01 was		arged to the concouct of				
D. 1	Flow Rate. What are the average daily volur							
D. 1	Flow Rate. What are the average daily volur		Volume of Di	scharge (gpd)	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater		Volume of Di	scharge (gpd)	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater		Volume of Di	scharge (gpd)	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards, Indicate whether th		Volume of Di	scharge (gpd)	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the	ne SIU is sub	Volume of Di	scharge (gpd)	Continuo	ous or Intermittent		
D.1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the Local Limits	ne SIU is sub	Volume of Di	scharge (gpd)	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the Local Limits Categorical Pretreatment Standards	ne SIU is sub Category	Volume of Di	scharge (gpd)	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the Local Limits Categorical Pretreatment Standards	ne SIU is sub Category Category	Volume of Di	scharge (gpd) • both of the following Subcategor	Continuo	bus or Intermittent		
D. 1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the Local Limits Categorical Pretreatment Standards	ne SIU is sub Category Category Category	Volume of Di	scharge (gpd) • both of the following Subcategor Subcategor	Continuo	bus or Intermittent		
D.1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the Local Limits Categorical Pretreatment Standards	Category Category Category Category	Volume of Di	scharge (gpd) both of the following Subcategor Subcategor Subcategor	Continuo	bus or Intermittent		
D.1	Flow Rate. What are the average daily volur Type of Wastewater Process Wastewater Non-Process Wastewater Pretreatment Standards. Indicate whether the Local Limits Categorical Pretreatment Standards Describe any problems at the treatment plant	ne SIU is sub Category Category Category Category t or in the col	Volume of Di	scharge (gpd) • both of the following Subcategor Subcategor Subcategor Subcategor Subcategor Subcategor	Continuo y y y y y gh, interference, I	bus or Intermittent		

SECTION II - Sanitary Wastewater

E. Biosolids Information

EASE TYPE OR PRINT										
-ACILITY NAME			NPDES	PERMIT NUMB	ER					
1. BIOSOLIDS HANDLING			<u> </u>							
Provide total English dry tons p	per 365-day period	of residuals handle	ed under the	following practi	ces.					
Amount generated at the facility	y:		Am	ount sent to mu	nicipal solid waste	landfill.				
Amount received from off-site			Am	ount sold or give	en away in a bag o	r other				
Amount treated on-site (includii	ng blending)		container for application to the land.							
Amount used or disposed by a	nother practice:		Amount Transported to another POTW							
	ionici produce.		т	ransport Compa	ny					
Amount applied to land in bulk	form:	<u> </u>	R	eceivina POTW						
Amount fired in incinerator										
2. BIOSOLIDS STORAGE										
Enter the volume of residual sto	prage capacity at th	nis facility.	D :	million gallons	or 🗌 cubic fee	t				
3. BIOSOLIDS CHARACTERISTI	ICS									
Report one year residuals more	nitoring data, and i	n no case less tha	n three san	npling events fo	r the following par	ameters Prov	nde the actual			
analytical data sheets as an att	achment. Analytic	cal methods shall be	e in accorda	ance with R 323	2406 (2) Methods	for Biosolids.				
	Average 🝸	anite visiting :-	، مېگېلومېد کې د	s and the second second second	EF KERC'	ar (* 1941)	Second Land			
Parameter	Monthly	Maximum	Units	Number of			Quantification			
	Concentration	Concentration;	- FEASTL		Sample Type	Method	Level			
otal Solids			%							
Fotal Arsenic			Ma/ka							
					Composite					
Total Cadmium			Mg/kg							
Fotal Copper			Mg/kg		Grab					
Fotal Lead			Ma/ka		Grab					
		<u> </u>		······································	Grab					
			Mg/kg	•						
Fotal Molybdenum	i i		Mg/kg		Grab					
Total Nickel			Mg/kg		Grab					
Fotol Colonium					Grab					
			Mg/kg							
Fotal Zinc			Mg/kg		Grab					
Total Kjeldahl Nitrogen			Mg/kg		Grab					
Ammonium Nıtrogen			Ma/ka		Grab					
Tatal Dhanahama				I	Composite					
			Mg/kg							
Total Potassium			Mg/kg		Grab		<u>ـر</u>			

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SECTION II - Sanitary Wastewater

E. Biosolids Information

			E. 1	BIOSOIIUS	monna		~	5 7	
ACILITY NAME	,			<u> </u>	NPDES F		ER .		
 4 POLLUTANTS OF CONG Are there currently or is concentrations that wouli No, continue with Iter 	CERN there potential for d make them unsu m 5.	or pollutant Itable for la	ts (othe and app	r than para dication?	ameters lis	sted on the pre	evious page) to be	present in the r	esiduals at
Yes, on a separate s	heet provide repre	sentative a	analytica	al data for t	hose pollut	tants.			
5 ADDITIONAL BIOSOLID Report any biosolids mo analytical data sheets as suspect that the informa assistance completing th	S MONITORING I nitoring data from an attachment ation provided (or is item call the Pe	DATA the last pe Upon subr not provi rmits Secti	ermit cy mittal re ided) do ion To	rcle for para view, addit bes not ad submit add	ameters no uonal moni- lequately c ditional info	ot specifically li toring may be i characterize the irmation see pa	sted on the previous required if the Wate e residuals propose ige ii, item 8	s page. Include r Division has re d to be land a	the actual eason(s) to pplied. For
Parameter	Average	Monthly	Ma:	ximum	Units 🕅	Number of	Sample Type		Quantification
a sadi a san a		tration	Conc	entration	1487	"Апатурер		Methon	CAN LEVEL 30
							Grab		1
							Composite		
							Grab		
				-	ļ		Composite	<u> </u>	<u></u>
							Grab		
-					Î l				
									<u> </u>
				1					
							Grab		1
							Composite		
							Grab		
					<u> </u>		Composite		
Provide the following info should have been submi should be included with submitting a completed s additional information se	prmation for every itted to the MDEQ this form. Addit Site Identification F e page II, item 8	new or exi on a Site bonal sites form with t	Isting si Identifi s may I the appi	te that may cation Forn be added 1 ropriate atta	/ be used i n (with atta to the Lan achments a	in the next five achments) sinc ad Application and waiting the	years (biosolids per e January 1, 1998 Site List during the required ten day no	mit cycle). Eacl or the required biosolids perm tification period	n listed site information int cycle by To submit
Site Identification Number	Latitude	Longit	ude 了	Acres	学习的	* Owners Las	t Name	New Site	CPLR Site
								. D	
- ``									
				1					

SECTION II - Sanitary Wastewater

F Signature Page

JILITY NAME		
		NPDES PERMIT NUMBER
CERTIFICATIO Rule 323.2114(N 1-4) promulgated under the Michigan Act, requires that	It this application be signed as follows:
 A. For a municipation of the second second	cipal, state, or other public facility, by a principal exercise manager or clerk) nization, company, corporation or authority, by a princership, by a general partner. iroprietor, by the proprietor.	cutive officer or ranking elected official (such as the mayor, village president, ipal executive officer.
Note: If the sign	natory is not listed above, but is authorized to sign the	application, please provide documentation of that authorization
"I certify under j and that, based and complete	penalty of law that I have personally examined and an I on my inquiry of those individuals immediately respo I am aware that there are significant penalties for subi	n familiar with the information submitted in this application and all attachments nsible for obtaining information, I believe that the information is true, accurate mitting false information, including the possibility of fine and imprisonment."
Print Name		Title
Representing		
Signature		Date
If the application home, prison, o official from the unit of governm the local unit of <i>"This is to cert</i> <i>P.A. of 1994 as</i>	n is for a privately owned treatment system serving a r other facility for treatment of domestic wastewater fi local unit of government shall sign the permit applica ent is aware of its responsibilities as set forth in Sec government to sign the application does not reduce its ify that I am aware of and recognize the responsibili- amonded "	mobile home park, campground, apartment complex, condominium, nursing rom two or more residences, a principal executive officer or a ranking elected ition in the space provided The signature is only a certification that the local tion 3109(2) of Michigan Act 451, P A. of 1994, as amended The refusal of s liability under the statute.
If the application home, prison, o official from the unit of governm the local unit of "This is to cert P A. of 1994, as	n is for a privately owned treatment system serving a r other facility for treatment of domestic wastewater fi local unit of government shall sign the permit applica ent is aware of its responsibilities as set forth in Sec government to sign the application does not reduce its ify that I am aware of and recognize the responsibilities amended "	mobile home park, campground, apartment complex, condominium, nursing rom two or more residences, a principal executive officer or a ranking elected tition in the space provided The signature is only a certification that the local tion 3109(2) of Michigan Act 451, P A. of 1994, as amended The refusal of is liability under the statute. ties of the municipality as set forth in Section 3109(2) of Michigan Act 451,
If the application home, prison, o official from the unit of governm the local unit of <i>"This is to certi</i> <i>P A. of 1994, as</i> Print Name	n is for a privately owned treatment system serving a r other facility for treatment of domestic wastewater fi local unit of government shall sign the permit applica ent is aware of its responsibilities as set forth in Sec government to sign the application does not reduce its ify that I am aware of and recognize the responsibilities amended "	mobile home park, campground, apartment complex, condominium, nursing rom two or more residences, a principal executive officer or a ranking elected tition in the space provided The signature is only a certification that the local tion 3109(2) of Michigan Act 451, P A. of 1994, as amended The refusal of is liability under the statute. ties of the municipality as set forth in Section 3109(2) of Michigan Act 451, ties of the municipality as set forth in Section 3109(2) of Michigan Act 451,
If the application home, prison, o official from the unit of governm the local unit of "This is to cert P A. of 1994, as Print Name Representing	n is for a privately owned treatment system serving a r other facility for treatment of domestic wastewater fi local unit of government shall sign the permit applica ent is aware of its responsibilities as set forth in Sec government to sign the application does not reduce its ify that I am aware of and recognize the responsibility amended "	mobile home park, campground, apartment complex, condominium, nursing rom two or more residences, a principal executive officer or a ranking elected tition in the space provided The signature is only a certification that the local tion 3109(2) of Michigan Act 451, P A. of 1994, as amended The refusal of is liability under the statute. ties of the municipality as set forth in Section 3109(2) of Michigan Act 451,

This completes Section II. Return the completed application, (Sections I, II and any attachments) to the appropriate district office. See pages 2 and 3 of the appendix for district office addresses and a map of district boundaries.

If assistance is needed completing this application, contact the Permits Section, telephone number: 517-373-8088.

Section III.A

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SECTION III - Industrial and Commercial Wastewater

Section III is to be completed by all facilities classified as Industrial or Commercial facilities. Industrial and Commercial facilities include but are not limited to facilities that discharge or propose to discharge a wastewater generated by; a production process, a service provided or through a remediation project Municipal and public facilities are not required to complete Section III (unless requesting authorization for discharges other than sanitary wastewater)

		A. Facili	ity Infor	mation							
PLEASE TYPE OR PRINT			NPDES								
Donald C. Cook Nuclear Plan	it		MI0005	827							
1. BUSINESS INFORMATI A Provide up to four (4 economic importance	ION), Standard Industrial C e, which best describe	lassification (SIC) or N the major products or :	Iorth Am	erican Industry Classi provided by this facili	fication System (NAIC	S) codes, in order of					
1. 4911	2	<u> </u>	3		4						
 B. Indicate if this facility is a primary industry (refer to Table 1 of the appendix to determine if this facility is a primary industry) Yes, this facility is a primary industry. Indicate the primary industry as identified in Table 1 of the appendix: <u>Steam Electric</u> No, this facility is not a primary industry, continue with Item C Is this facility a concentrated animal feeding operation or an aquatic animal production facility? Yes, contact the Permits Section, telephone number: 517-373-8088 No, continue below. 											
 WATER SUPPLY AND DISCHARGE TYPE A. Identify all water sources entering the facility and treatment system and provide average flows. The volume may be estimated from water supply meter readings, pump capacities, etc Provide the name of the source where appropriate (i e., Grand River, Lake Michigan, City of Millpond). To submit additional information see page II, item 8 											
r	Name and L	ocation of Source		Average Volur	ne or Flow Rate	Indicate Units					
Municipal Supply	Lake Township			0.368		MGD					
Surface Water Intake	Lake Michigan			2029	MGD						
Private Well	NA			NA	NA						
Other (specify)	NA			NA		NA					
 B. Identify water disch subsequently used cooling water and t amount of water use 	arged by the facility ar for another purpose, ir hen for process water, age If they are differer	id treatment system a idicate the type and a indicate the amount o it, provide an explanati	and provi amount c of proces ion.	de average flows If of the last use. For e is water. The amoun	water is first used for example, if water is in t of water from source Average Flow Rate	one purpose and then tally used for nonconta s should approximate the Indicate Units	ıs ict he				
	Average Flow Rate]		<u></u>						
Process Wastewater	0.809	MGD	l s	Sanitary Wastewater	0 022	MGD					
Contact Cooling Water	NA	NA	Regulated Storm Water 5 169 (Calc) MGD								
Noncontact Cooling Water	Cooling Water 2029 MGD High Pressure Test Water NA NA										
Groundwater Clean Up	NA	NA	Other:		NA	NA					
1											

Note: For A and B above, indicate units either as MGD (million gallons per day), MGY (million gallons per year), GPD (gallons per day), or other appropriate unit

Michigan Department of Environmental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

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19. ..

STRUCTIONS FOR COMPLETING SECTION III, ITEM B 1.

This item requests detailed information on each outfall at the facility. Fill in the Outfall Number in the top right hand box identifying the outfall by number, e.g., 001, 002, etc. (applicants with existing NPDES permits should refer to the facility's current NPDES permit for outfall number identification). For each outfall provide the location, the type of wastewater, the expected and/or measured volume of effluent discharged, the frequency of discharge and the flow variation of the discharge.

- A WATERSHED Identify the receiving stream's watershed Each receiving stream will eventually discharge into one of the Great Lakes or one of the connecting waters (i e. Detroit River, St Mary's River, St Clair River). Indicate from which river the discharge eventually discharges to the Great Lakes. For example: Sycamore Creek is tributary to the Red Cedar River, which is tributary to the Grand River, which discharges to Lake Michigan. Consequently a discharge to the Sycamore Creek is a discharge to the Grand River Watershed.
- B. RECEIVING WATER. Identify the exact location of the wastewater discharge point(s) and all areas through which the discharge flows (e.g. storm sewers, open drains, wetlands), if applicable, between the discharge point and the receiving water. Examples of receiving waters are rivers, creeks, lakes, etc.
- C. COUNTY / TOWNSHIP: Provide the county and township where the outfall is located.
- D. STATE PLANAR COORDINATES: Provide the location of the discharge to the receiving water in State Planar Coordinates Report State Planar Coordinates using quarter-quarter section, quarter section, section, town and range (e.g., NE 1/4, SE 1/4, Section 34, T1N, R12E).

LATITUDE / LONGITUDE: Provide the latitude and longitude of the discharge accurate within 15 seconds (e.g., Latitude = 42°27'15' Longitude = -83°02'30") or accurate within 0 004 decimal degrees (e.g., Latitude = 42 454167, Longitude -83.041667).

- F. WASTEWATER TYPES: Indicate the type(s) of wastewater the facility is requesting authorization to discharge. Check as many types of wastewater as are appropriate for this outfall. If a water is used in multiple areas, such as water that is first used for noncontact cooling, and then for another use, such as process water, indicate the final use only. For other common wastewater types see "Table 9 Other Types of Wastewater" in the appendix.
- G. MAXIMUM DESIGN FLOW RATE: When reporting the Maximum Design Flow Rate, provide the design flow for this specific outfall, (e.g., batch treatment system flow, package treatment system flow, or some other finite treatment system flow). Please provide an explanation if "Pollution Prevention" measures are expected to provide flow reductions.
- H. MAXIMUM AUTHORIZED DISCHARGE FLOW: Provide the maximum discharge flow rate that the facility is expecting to discharge in the next five years. NOTE: Discharges of flows greater than the Discharge Flow Rates authorized in the permit constitute a violation of Act 451 of 1994, as amended, Part 31, and are subject to the penalties specified therein.
- I. SEASONAL DISCHARGE: A discharge is considered to be seasonal if the facility treats and then stores wastewater throughout the year or a portion of the year and discharges it a few days, weeks or months a year. Provide the dates the facility discharges the treated wastewater (e g, October 15 through November 10) and the average discharge flows (e.g., 5 MGD).
- J. CONTINUOUS DISCHARGE: Provide the average number of hours per day and the number of days per year that the discharges occur. Batch dischargers shall provide the peak batch flow rate, the number of batches per day, the per batch minimum, average and maximum volumes in gallons, and the per batch minimum, average and maximum batch discharges in minutes.

TE: The units are as follows. GPD = gallons per day, MGD = millions of gallons per day, MGY = millions of gallons per year.

Section III.B



Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

∕ ^or /t	nplet he ap	te a separate Section III.B oplication for additional out	Outfall Inf alls as nece	ormation (pa essary.	ges 26-31) f	or each outfai	ll at the facility. Mal	ke copies o	of this blank section			
PLE	ASE	TYPE OR PRINT	· •	- • ••	· ·		·····					
FAC	ILITY	NAME			NF	PDES PERMIT	NUMBER					
Don	ald C	. Cook Nuclear Plant			M	0005827		[I7	NIAKE			
1.	OUT	FALL INFORMATION (see page	e 25 for inst	ruction on com	pletion of this	page)						
		Watershed										
	А	Lower St Joseph				4						
	-	Receiving Water										
	в	Lake Michigan										
	C.	County				Township						
		Berrien	1/		Center	Lake	Tour	Bas				
	D. SW NW 06 06 06S 19W											
		Latitude			00	Lonaitude						
	Е	41 58' 30"				86 34' 30"						
	F.	Type of Wastewater Discharge	d (Check al	I that apply to I	this outfall):							
		Contact Cooling	∏ sa	anitary Wastew	rater	Ground	lwater Cleanup	Stor	m Water (regulated)			
				ncess Wastew	ater	Hvdros	tatic Pressure Test	 □ Stor	m Water (not regulated)			
		Storm water subject to effly	ient quidelini	es (indicate ur	nder which cat	enory)		_				
				-			-					
		Other – specify (see "Table	8 - Other C	ommon Types	of Wastewate	r" in appendix)	<u></u>					
ł	J.	What is the maximum Facility I	Design Flow	Rate. <u>2369</u>	MGD							
Ì	G	What is the maximum dischard	e flow autho	orized for this d	outfall Seas	onal Discharge	ers	MGY C	ontinue with Item H.			
	0.					Disahar		MCD.C	entinue with Itom I			
					Cont	inuous Dischar	gers INTAKE	MGDC	onunue with item i.			
	н	Seasonal Discharge										
		List the discharge periods (by	month) and t	he volume disc	charged in the	space provide	d below					
		From		Through			Discharge Volume		Annual Total			
		11011		Intough					-			
		From		Through			Discharge Volume		,			
		.										
		From		Inrougn			Discharge volume					
		From		Through			Discharge Volume					
				I								
	Ι.	Continuous Discharge										
		How often is there a discharge	from this ou	tfall (on the av	erage)?	INTAKE Hou	irs/Day	Days/Ye	ar			
		Batch dischargers must pro-	vide the foll	owing additio	nal informati	on:						
		Is there effluent flow equalizati	on? 🗖	Yes					-			
		Batch Peak Flow Rate:			Number ö	f batches discri	argeo per day	-				
		1										
		Minimum Average Maximum										
ļ		Batch Volume (gallons)										
1		Batch Duration (minutes	5)									
I		L.,	l	·····	<i></i> .			-				
Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

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B. Outfall Information

PLEASE TYPE OR PRINT		
	NPDES PERMIT NUMBER	OUTFALL NUMBER
Donald C. Cook Nuclear Plant	MI0005827	INTAKE
 PROCESS STREAMS CONTRIBUTING TO OUTF This information is used to determine the applicable the type of facility. Page 7 of the appendix contain application. For assistance call the Permits Section process. If the wastestream is not regulated under potential to be present in the discharge To submit 	ALL DISCHARGE e federal regulations for this discharge. The information requins an abbreviated list of various industries and the types of in All industries shall provide the name of each process and federal categorical standards, the applicant shall report all pro- additional information see page ii, item 8.	ured to be reported is dependent on information each shall report in this d the SIC or the NAICS code for the iollutants which have the reasonable
PROCESS INFORMATION A. Name of the process contributing to the dischar B SIC or NAICS code: C. Describe the process and provide measures of	ge	information to be reported).
PROCESS INFORMATION A Name of the process contributing to the dischar		
B. SIC or NAICS code		
C. Describe the process and provide measures of	production (see the instructions to determine the appropriate	information to be reported)
PROCESS INFORMATION A. Name of the process contributing to the dischar B. SIC or NAICS code		
C Describe the process and provide measures of	production (see the instructions to determine the appropriate	information to be reported)
PROCESS INFORMATION A. Name of the process contributing to the dischar		
B. SIC or NAICS code:		
C. Describe the process and provide measures of	production (see the instructions to determine the appropriate	information to be reported)
PROCESS INFORMATION A. Name of the process contributing to the dischar	ge	
B. SIC or NAICS code		
C. Describe the process and provide measures of	production (see the instructions to determine the appropriate	information to be reported)

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

ISTRUCTIONS FOR COMPLETING SECTION III, ITEM B.3.

1

In accordance with 40 CFR 122.21, all applicants must report CBOD₅, Chemical Oxygen Demand, Total Organic Carbon, Total Suspended Solids, Ammonia as N, Temperature (both summer and winter), and pH. The applicant may, however, request that reporting of data for one or more of these required parameters be waived Such request must be supported by adequate rationale. The request shall be included as an attachment to this application.

Report available discharge data for the parameters listed. Actual data shall be provided for existing discharges and expected or estimated data provided for proposed discharges Please include an explanation if "Pollution Prevention" is expected to provide reduction of pollutants. See Page 8 of the appendix for a list of specific parameters for which data must be provided for specific types of discharges (e.g., noncontact cooling waters, gasoline groundwater cleanups, etc.). For assistance in determining the appropriate parameters to report, call the Permits Section

If data are available for other parameters not listed in Section III.B 3, the applicant shall report these data in the blank spaces provided or attach the information to this application on 81/2" x 11" paper.

Report all data in the units provided and for the sample types specified in the table. If more than one option is available, check the appropriate box. The units are as follows: $\mu g/l = micrograms$ per liter, mg/l = milligrams per liter, $^{\circ}F =$ degrees Fahrenheit, $^{\circ}C =$ degrees Celsius See page ii number 5 for analytical requirements.

To analyze for pH, temperature, total residual chlonne, oil and grease, and fecal coliform use Grab Samples unless other frequency-sample type analyses are available. To analyze for total BOD_5 , total phosphorus, COD, TOC, ammonia nitrogen and total suspended solids use 24-hour composite samples unless other frequency-sample type analyses are available.

r or two or more substantially identical outfalls, permission may be requested from the appropriate district office to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If the request is granted by the district office, on a separate sheet attached to the application form, identify which outfall was sampled and describe why the outfalls which were not sampled are substantially identical to the outfall which was sampled. See pages ii and iii for sampling definitions, including "maximum daily concentration", and "maximum monthly concentration".

REPORTING OF INTAKE DATA

Applicants are required to report intake water data when they are attempting to demonstrate eligibility for "net" effluent limitations for one or more pollutants A "net" effluent limitation is determined by subtracting the average level of the pollutant(s) present in the intake waters remaining after treatment which is not removed by the treatment system. NPDES regulations allow net limitations only in certain circumstances (see 40 CFR Part 122.45(g)). To demonstrate eligibility, report the average concentration and/or mass of the results of the analyses on the intake water. If the intake water is treated prior to use, report the intake concentrations and/or mass after treatment. In addition to the analytical results, the following information shall be submitted for each parameter:

a) A statement that the intake water is drawn from the body of water into which the discharge is made. If the discharge is not to the same body of water from which the water is withdrawn, the facility is not eligible for net limitations.

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- b) A statement of the extent to which the level of the pollutant in the intake water is reduced by treatment of the wastewater. Limitations for the net removal of pollutants are adjusted only to the extent that the pollutant is not removed
- c) When applicable (for example, when the pollutant represents a class of compounds, e.g., BOD₅, TSS, etc.), a demonstration of the extent to which the pollutants in the intake vary physically, chemically and biologically from the pollutants contained in the discharge. Limitations are adjusted only to the extent that the concentrations of the intake pollutants vary from the discharged pollutants

Note: Applicants for groundwater remediation discharges should also report the intake characteristics of contaminated groundwater.

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

PLEASE TYPE OR PRINT					
ACILITY NAME		NPDES PERMIT NU	JMBER	OUTFAL	
Donald C. Cook Nuclear Plant		MI0005827		INTAKE	
3 WASTEWATER CHARACTERISTICS - CONVENTION	VAL POLLUTANTS	- Instructions for cor	mpleting this page a	re on the facing pag	e.
Check this box if additional information is included	as an attachment.	To submit additional	information see pag	ge iı, ıtem 8	
Replace Black Contractor	😹 🤆 Maximum 👾	🚧 Maximum 🎉	弱致的(falt)	-6875555	STRACTURE
	Daily	Monthly	图1999年1月1日	Number of	
Parameter	^C Concentration	- Concentration	N Units	🔨 * Analyses 🖏 🌠	Sample Type
Biochemical Oxygen Demand - five day (BOD ₅)	3	3	mg/l	1	Grab
COD (Chemical oxygen demand)	6	6	mg/l	1	☐ Grab ⊠ 24 Hr Comp
			ma/l		🗌 Grab
TOC (Total organic carbon)	2	2		1	🛛 24 Hr Comp
			ma/l		🔲 Grab
Ammonia Nitrogen (as N)	<0 05	<0.05		1	🛛 24 Hr Comp
		1-	mg/l		Grab
I otal Suspended Solids	40	15		12	24 Hr Comp
Total Duppeluad Colida	NA	NA	mg/l	NA	
Total Phosphorus (as P)	NA	NA	mg/l	NA	24 Hr Comp
	maximum-7day				
Fecal Coliform Bacteria (report geometric means)	NA	NA	counts/100ml	NA	Grab
			⊠ mg/l		
otal Residual Chlorine	<0 08	<0.08	μg/l	1	Grab
	minimum daily		mo/l		🗍 Grab 🔍
Dissolved Oxygen	NA			NA	24 Hr Comp
рН	minimum	maximum	standard units		🛛 Grab
(report maximum and minimum of individual samples)	7.93	7.93		1	24 Hr Comp
Towns and the Summary	90.9	74.0	⊠°F⊡°C	100	Grab
	000	74.0		100	
Temperature Winter	48.8	42.7	⊠℉⊡℃	170	
Oil & Grease	NA	NA	mg/l	NA	Grab
· · · · · · · · · · · · · · · · · · ·					Grab
					24 Hr Comp
					Grab
			l		24 Hr Comp
					Grab
					24 Hr Comp
					Grab
			 		24 Hr Comp
	· · · · · · · · · · · · · · · · · · ·				
					Grah
					24 Hr Com
					Grab
					24 Hr Comp

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

PLI	EASE TYPE OR PRINT	,	
		NPDES PERMIT NUMBER	OUTFALL NUMBER
Do	nald C Cook Nuclear Plant	MI0005827 -	INTAKE
4.	PRIMARY INDUSTRY PRIORITY POLLUTANT INFORMATION		
	Existing primary industries that discharge process wastewater must identified in Table 2 (as determined from Table 1, <u>Testing Require</u> identified in Table 3 Existing primary industries must also provide 2 known or believed to be present in facility effluent	at submit the results of at least one effluent ana ements for Organic Toxic Pollutants by Industr a the results of at least one effluent analysis fo	lysis for <u>selected</u> organic pollutants <u>al Category</u>), and all the pollutants r any other chemical listed in Table
	In addition, submit the results of all other effluent analyses perform	ed within the last 5 years for any chemical liste	d in Tables 2 and 3
	New primary industries that propose to discharge process waster	water must provide an estimated effluent conc	entration for any chemical listed in

5. DIOXIN AND FURAN CONGENER INFORMATION

Tables 2 and 3 expected to be present in facility effluent

Existing industries that use or manufacture 2,3,5-trichlorophenoxy acetic acid (2,4,5-T), 2- (2,3,5-trichlorophenoxy) propanoic acid, (Silvex, 2,3,5-TP), 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon), 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnel), 2,4,5-trichlorophenol (TCP) or hexachlorophrene (HCP), or knows or has reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is present in facility effluent, must submit the results of at least one effluent analysis for the dioxin and furan congeners listed in Table 6 All effluent analyses for dioxin and furan congeners must be conducted using EPA Method 1613.

In addition, submit the results of all other effluent analyses performed within the last 5 years for any dioxin and furan congener listed in Table 6

New industries that expect to use or manufacture 2,3,5-trichlorophenoxy acetic acid (2,4,5-T), 2- (2,3,5-trichlorophenoxy) propanoic acid (Silvex, 2,3,5-TP); 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon), 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothionate (Ronnel), 2,4,5-trichlorophenol (TCP) or hexachlorophrene (HCP), or knows or has reason to believe that 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) is present in facility effluent must provide estimated effluent concentrations for the dioxin and furan congeners listed in Table 6.

6 OTHER INDUSTRY PRIORITY POLLUTANT INFORMATION

Existing secondary industries, or existing primary industries that discharge non-process wastewater, must submit the results of at least one effluent analysis for any chemical listed in Tables 2 and 3 known or believed to be present in facility effluent

In addition, submit the results of all other effluent analyses performed within the last 5 years for any chemical listed in Tables 2 and 3.

New secondary industries, or new primary industries that propose to discharge non-process wastewater, must provide an estimated effluent concentration for any chemical listed in Tables 2 and 3 expected to be present in facility effluent.

7. ADDITIONAL TOXIC AND OTHER POLLUTANT INFORMATION

All existing industries, regardless of discharge type, must provide the results of at least one analyses for any chemical listed in Table 4 known or believed to be present in facility effluent, and a measured or estimated effluent concentration for any chemical listed in Table 5 known or believed to be present in facility effluent. In addition, submit the results of any effluent analysis performed within the last 5 years for any chemical listed in Tables 4 and 5.

New industries, regardless of discharge type, must provide an estimated effluent concentration for any chemical listed in Tables 4 and 5 expected to be in facility effluent

8 INJURIOUS CHEMICALS NOT PREVIOUSLY REPORTED

New or existing industries, regardless of discharge type, must provide a measured or estimated effluent concentration for any toxic or otherwise injurious chemicals known or believed to be present in facility effluent that have not been previously identified in this application. Quantitative effluent data that are less than 5 years old for these chemicals must be reported.

NOTE: All effluent data submitted in response to questions 4, 5, 6, 7, and 8 above should be recorded on page 31. To submit additional information see page ii, item 8. If the effluent concentrations are estimated, place an E in the "Analytical Method" column. The following fields must be completed for each data row. Parameter, CAS No, Concentration(s), Sample Type, Analytical Method, Quantification Level and Detection Level See page ii, number 5 for analytical test requirements

Section III.B.6 and 7

Additional Sample Data Summary Sheet

Parameter	03/12/02	03/14/02	03/18/02	03/19/02	03/20/02	03/21/02	03/25/02	03/26/02	03/27/02	04/01/02	04/02/02	04/03/02	05/30/02	Sample type	Max Daily	Analytical	Max monthly	# of Analyses
Table 2 The Track Street	ein stars	The second	Ter (Ter 1	and the second	1945-422	#Exvisit	9872 .225	1497.642	Marian	DAY JAN N	1926 2000	'ARSINE P	24.4 1	47783	Sylicity & Asig	M. S. W. W. S.	A HERING	du the of the state
No Data	1	1	l		1						- <u> </u>	a de la companya de l	A.M	C C PT IN ACTO	<u>, , , , , , , , , , , , , , , , , , , </u>			1
Table 3 1 - Fording	Action	inner is Si	the persons	E21274.3.1		196 X 2	W. C. S. Sec	things they	through the	11.18 2394	-iojatika	right de	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	"The property of the	7849°B7	Arts, Joing 1998.	19.17. 19.20 19 19 19 19 19 19 19 19 19 19 19 19 19	
Antimony (ug/l)				l		<1						CONCOL OF DRIVE		Grab	<1	200 7	<1	1
Arsenic (ug/l)						<1								Grab	<1	200 7	<1	1
Beryllium (ug/l)						<0 2								Grab	<0.2	200 7	<0 2	1
Cadmium (ug/l)						<0 2								Grab	<0.2	200 7	<0.2	1
Chromium (ug/l)						<2								Grab	<2	200 7	<2	1
Copper (ug/l)						1							<1	Grab	1	200 7	1	2
Lead (ug/l)				i		<1							<u>.</u>	Grab	<1	2007	<1	1
Selenium (ug/l)						<1								Grab	<1	270 3	<1	1
Silver(ug/l)						<0.2								Grab	<0 2	2007	<0 2	1
Nickel (ug/l)						<3								Grab	<3	2007	<3	1
Thallium -(ug/l)						<1								Grab	<1	279 2	<1	- 1
Zinc (ug/l)						5							<4	Grab	5	2007	5	- 2
Cyanide (mg/l)						<0.01								Grab	<0 01	335 2	<0.01	1
Mercury (ng/l)						2.11							1 04 (1 08	Grab	2.11	1631	2.11	3
Table 4 Art School	Compare the 23	Star Carrie		rskill)	家门等街	B ARK+	information in and the second		Ést site	appleting of	2000 C	h pinger	1493) - Jagan	M. SPITARA	"But figs	សៀវ ុះស្មើនផ្ទំរួ	() Standard ()	A the first the the first of the
Fluoride (mg/l)	02	01	0.1	01	01		01	0.1	01	01	01	01		Grab	01	340 2	0.1	11
lron (mg/l)	0 35	0 21	0.31	0 24	0 18		0.97	0.72	0 82	0 23	0 2	0 78		Grab	0 97	200.7	0 48	11
Magnesium (mg/l)	118	11.7	12.2	12 1	12		14	14 2	14 3	12 1	123	129		Grab	14.3	200 7	12 8	· 11 ′
Sulfate (mg/l)	22	22	23	23	22	23	28	26	27	23	24	23		Composite	28	375 4	24	~ 12
Table 5	P. D. Street,	9779973 (BP		i de siteri	6 to be the	er en skieder se	tin din tari Manakar		a s. h. Friday Start	NUMBER OF	erze anteriore alle e	apinion of the	and a property and	ጟኯ፼ኯፚቘ	Tankin Tanga Ig	2453-44	xprogram or going the	1 the state of the second s
No Data																		•
Additional Data	ter and	State Me	Martin Torres	And in the		6 5	States in	33 Mik	A LANDE A		*Eak/Safet	States &	1 Star Star	Margaress Strikers	27279 125 ·	National and the second	***********	Mary and a Co
Calcium (mg/l)	36 3	36 2	39 5	39 2	37.9		44 4	45 7	45 2	38 7	39	41.5		Grab	45 7	200 7	40 6	11
Chloride (mg/l)	15	13	12	13	12		15	15	15	17	20	16		Grab	20	325 3	17.7	11
Hardness (mg/l)	139	139	149	147	144		169	173	172	146	148	157		Grab	173	130 2	154 0	11
Silica (mg/l)	1 79	1 68	2 07	2 05	1 87	<0.2	1 92	2 14	2 07	1.71	1.73	1 67		Grab	2 14	2007	19	12

Analysis performed by Belomonte Park Labs

Intake

Inform	ation ·	12-THP-0	5020.ADM.01	0	Rev. 5B	Page	7 of 8
	•	AN	ALYTICAL	RESULT	S.	•	
. Data Si	neet 2	· .	NPDES R	.esults	· · · · · · · · · · · · · · · · · · ·	Page:	7
Sample Iden Sample Date Received Da	tification:	1 pc I 3-26-0	NTAKE Z	· S S R	ampler's Initi ample Time: eceiver's Init	ials: K- 0730 ials: K-	·
Allarysis Da	.e					•	
	······································	CALCU	JLATIONS/RE	SULTS	**************************************		
. STD#	(Wr) (Wr)	- (Wi)	x 1000 / (V)	•	• •	= ppm .	CDMS Trend (S)(I)(D) Results in Spe
Analysis Time:	Equip ID.		Analyst's Initials:		******		-
O&G ·	R = (W _r)	- (W)	B=((W _f) - (- ^ ·	CDMS Trend . (S)(I)(D) Results in Spe
STD#	$\frac{(R)}{(R)}$	· - (B) · - (Wi) - (B)	/(v) Вес /(V)	(Wr) - (W _i)	■ ppm ■ mg. ■ ppm	· · ·
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TSS	(A)	. - (B)	x 1000 / (C)	· · · · ·	• • •	⇒ ppm	CDMS Trend (S)(I)(D) Results in Spe
STD# . Analysis Time:	(A) Equip ID.	- (B)	x 1000 / (C) Analyst's Initials:	· · · · · · · · · · · · · · · · · · ·		ppm	
SO4	(Dilution Fac	tor) x (S	ample Reading)	• •		■ _ mg/L(ppm)	CDMS Trend (S)(I)(D) Results in Spe
. Analysis Time:	(Dilution Fac Equip ID.	tor) x (S	tandard Reading) Analyst's Initials:	•		e mg/L(ppm)	
STD# 44 Analysis Time: 27	Sample Temp Theoretical V 35 Equip ID.	CPC. 151	dard Temperatúre: Analyst's Initials:	7.9. 13.2 Resul	3 11= 6.97	•	CDMS Trend (S)(I)(D) Results in Spe
Total P	Result -	– ppm	STD#:	Result =	ppm	utstagerutstaa andi	CDMS Trend (S)(I)(D)
Analysis Time:	Equip ID.		Analyst's Initials:	•		•	Results in Spe
analysis	Analys	is Time	Equipment ID	Results	Analysts Initials	CDMS Trend	
The	073	$\frac{38}{40}$	R 209 R 2010-4	374.	phin B	N/9	
Commente	Corrective A	ctions/Notif		108	/0	<u> </u>	
							<u>.</u>
		•					

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Michigan Department of Envinemental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

PLEASE TYPE OR P	PRINT														
FACILITY NAME Donald C Cook Nucle	ear Plant					NPDES PERMI MI0005827	T NUMBER			OUTFALL N	UMBER		<u> </u>		
SAMPL	E DATE 🔿	3/12/02	3/14/02	3/18/02	3/19/02	2 3/20/02	3/25/02	3/26/02	3/27/02	4/1/02	4/2/02		·	1 4 - 1 - 1 4 + 2 - 1 - 1 - 1 - 4 + 	
PARAMETER	CAS No.	Conc. (ug/l)	Conc. (ug/l)	ੀ Conc. ਦ੍ਰ ਕਿ (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	* Conc.* * /(ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc.	Sample Type	Analytic	QL	DL
Fluoride		200	100	100	100	100	100	100	100	100	100	Grab	340 2	100	8
Iron		350	210	310	240	180	970	720	820	230	200	Grab	200.7	10	10
Sulfate		22000	22000	23000	23000	22000	28000	26000	27000	23000	24000	Grab	375.4	1000	470
See Attached															
for additional															
data.															
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Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

PLEASE TYPE OR PRINT

FAC		NPDES PERMIT NUMBER								
Dor		WI0003827								
9.	WATER TREATMENT ADDITIVES Water treatment additives include any material that is additive treat the water.	ed to water used at the facility or to a wastewater gen	nerated by the facility to condition or							
	Approvals of water treatment additives are authorized by constitute approval of the water treatment additives that are	the DEQ under separate correspondence The issue e included in this application	ance of an NPDES permit does not							
	A. Are there water treatment additives in the discharge from	m this facility?								
	No, proceed to item 4									
	Yes									
	B Have these water treatment additives been previously a	approved?								
	No, continue with C below.									
	Yes Submit a list of the previously approved water tre updated if it has changed since the previous approval	eatment additives and the date they were approved. T	he information listed in C 1-8 must be							
	C. Submit a list of water treatment additives that are or ma additive	ay be discharged from the facility Applicants must sub	omit the information listed below for each							
	1. The water treatment additive Material Safety Data She	eet								
	2. The proposed water treatment additive discharge concentration.									
	3 The discharge frequency (i.e., number of hours per day, week, etc.)									
/	4. The outfall the water treatment additive is to be dischard	arged from								
	5 The type of removal treatment, if any, that the water tr	reatment additive receives prior to discharge								
	6 The water treatment additive function (i.e., microbiocid	de, flocculant, etc)								
	7. A 48-hour LC50 or EC50 for a North American freshw	rater planktonic crustacean (either Ceriodaphnia sp., D	Daphnia sp , or Simocephalus sp.)							
	8 The results of a toxicity test for one other North Amen requirement of Rule 323.1057(2)(a) of the Water Qual a rainbow trout, bluegill, or fathead minnow	ican freshwater aquatic species (other than a plankton Ity Standards Examples of tests that would meet this	ic crustacean) that meets a minimum requirement include a 96-hour LC50 for							
	The required toxicity information (described in items 7 and on the DEQ's Internet page http://www.deq.state.mi.us additives on this list, only the information in items 1 through	18 above) is currently available in the SWQD files for s/swq/gleas/docs/wta/WTAlist.doc If you intend to h 6 above needs to be submitted to the SWQD.	the water treatment additives listed to use one of the water treatment							
	Note: The availability of toxicity information for a water trea	atment additive does not constitute approval to dischar	ge the water treatment additive							
10.	WHOLE EFFLUENT TOXICITY TESTS									
	Have any acute or chronic WET tests been conducted on a If yes, identify the tests and summarize the results below u	any discharges or receiving water in relation to facility on inless the test has been submitted to the department in	discharges within the last three years? In the last 5 years							

Section III.B Outfall 001

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Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

or the a	ete a separate Section III.B.	- Outfall Information (pa tfalls as necessary.	ges 26-31) f	or each outfa	Il at the facility Ma	ake copies of t	his blank section
PLEAS	E TYPE OR PRINT	- • •	· ~		· · · · · · · · · · · · · · · · · · ·		
FACILI	TY NAME		NF	PDES PERMIT	NUMBER		FALL NUMBER
1 OI	ITFALL INFORMATION (see pa	age 25 for instruction on com	pletion of this	page)			
	Metershed		·				
A	Lower St Joseph		-				
В	Receiving Water						
	County			Township			
Ŭ	Berrien	1/.	Section	Lake	Town	Range	
D	SW	NW	06		065	19W	
E.	Latitude 41 58' 30"			Longitude 86 34' 30"			
E.	Type of Wastewater Dischard	ed (Check all that apply to '	this outfall)				
	Contact Cooling	Sanitary Wastew	vater	🗍 Ground	dwater Cleanup	Storm 🛛	Water (regulated)
-	Noncontact Cooling	ater	Hydros	static Pressure Test	Storm	Water (not regulated)	
	Storm water subject to eff	luent guidelines (indicate ur	nder which cal	tegory) <u>423-</u>	Steam Electric		
	Other – specify (see "Tab	le 8 - Other Common Types	of Wastewate	er" in appendix)),		
l J	What is the maximum Facility	Design Flow Rate 2369	MGD				
G	What is the maximum discha	rge flow authorized for this (outfall: Seas	onal Discharge	ers	MGY Cont	inue with Item H.
			Cont	inuous Dischai	rgers <u>1500</u>	MGD Cont	inue with Item I.
н.	Seasonal Discharge						
	List the discharge periods (by	month) and the volume disc	charged in the	space provide	ed below.		
	From	Through			Discharge Volume		Annual Total
	From	Through			Discharge Volume		
	From	Through			Discharge Volume		
	From	Through			Discharge Volume		
I.	Continuous Discharge How often is there a discharg Batch dischargers must pro Is there effluent flow equaliza Batch Peak Flow Rate	Je from this outfall (on the avoide the following additionation?	verage)? onal informati No Number c	24 Hours/Da on: of batches discl	ay <u>365</u> Days/Ye harged per day	ear	
		Minimum			Average	M	aximum
l	Batch Volume (gallons	\$}					
1	Batch Duration (minute	es)					

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

FASE TYPE OR PRINT

	CILITY NAME	NPDES PERMIT NUMBER	OUTFALL NUMBER
	Donald C. Cook Nuclear Plant	MI0005827	001
2.	PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE This information is used to determine the applicable federal regulatio the type of facility. Page 7 of the appendix contains an abbreviated application. For assistance call the Permits Section All industries s process. If the wastestream is not regulated under federal categorica potential to be present in the discharge. To submit additional informa-	ns for this discharge. The information required to be list of various industries and the types of informati hall provide the name of each process and the SIC al standards, the applicant shall report all pollutants (tion see page ii, item 8	e reported is dependent on on each shall report in this or the NAICS code for the which have the reasonable
	PROCESS INFORMATION A Name of the process contributing to the discharge: <u>00A</u>		
	B SIC or NAICS code. <u>4911</u>		
	C. Describe the process and provide measures of production (see the Generator Blowdown. 1 MGD maximum flow 2247 MWE total planet.	e instructions to determine the appropriate information intelectrical generation	on to be reported): Steam
	PROCESS INFORMATION A. Name of the process contributing to the discharge: <u>00B</u>		
	B. SIC or NAICS code: 4911		
	C. Describe the process and provide measures of production (see th Generator Blowdown 1 MGD maximum flow 2247 MWE total pla	e instructions to determine the appropriate informati int electrical generation	on to be reported) Steam
<u> </u>	PROCESS INFORMATION A Name of the process contributing to the discharge: 00C		
	B SIC or NAICS code: 4911		\bigcirc
	C. Describe the process and provide measures of production (see th heating boiler blowdown. 0 043 MGD maximum flow 2247 MWE	e instructions to determine the appropriate informati total plant electrical generation.	on to be reported): Plant
	PROCESS INFORMATION A. Name of the process contributing to the discharge ⁻ <u>00G</u>		
	B. SIC or NAICS code: 4911		
	C. Describe the process and provide measures of production (see th osmosis reject stream 0.366 MGD maximum flow. 2247 MWE tot	e instructions to determine the appropriate information all plant electrical generation	on to be reported) [,] Reverse
	PROCESS INFORMATION A. Name of the process contributing to the discharge ^{- 00H}		
	B. SIC or NAICS code 4911		
	C. Describe the process and provide measures of production (see the Miscellaneous equipment drains and processes Maximum flow is emergency purposes only	e instructions to determine the appropriate informations 5.2 MGD 2247 MWE total plant electrical generat	on to be reported): ion. This Outfall is used for

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

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B. Outfall Information

T' EASE TYPE OR PRINT		
CILITY NAME	NPDES PERMIT NUMBER	
Donald C Cook Nuclear Plant	MI0005827	001
2 PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHAI This information is used to determine the applicable federal regu the type of facility Page 7 of the appendix contains an abbrevi application For assistance call the Permits Section All industri process. If the wastestream is not regulated under federal categ potential to be present in the discharge To submit additional information.	RGE ulations for this discharge The information required to to iated list of various industries and the types of informat ies shall provide the name of each process and the SIC gorical standards, the applicant shall report all pollutants formation see page ii, item 8.	be reported is dependent on tion each shall report in this C or the NAICS code for the s which have the reasonable
PROCESS INFORMATION A Name of the process contributing to the discharge [•] Unit One	Cooling Water	· · ·
B SIC or NAICS code: 4911		
C. Describe the process and provide measures of production (se through non-contact cooling, maximum flow is 1500 MGD, 22	ee the instructions to determine the appropriate informa 247 MWE total plant electrical.	tion to be reported) Once-
PROCESS INFORMATION A. Name of the process contributing to the discharge <u>Unit Two</u>	Cooling Water	
B. SIC or NAICS code: 4911	ì	
C Describe the process and provide measures of production (see through non-contact cooling, maximum flow is 1820 MGD, 22	ee the instructions to determine the appropriate informa 247 MWE total plant electrical.	tion to be reported) Once-
PROCESS INFORMATION A Name of the process contributing to the discharge: <u>Misc_Min</u>	or Stormwater drains	
B SIC or NAICS code 4911		
C Describe the process and provide measures of production (se drains from the screenhouse roof, small roadway gratings ab	ee the instructions to determine the appropriate informa pove the forebay road.	tion to be reported) Roof
PROCESS INFORMATION A Name of the process contributing to the discharge:		
B SIC or NAICS code		
C. Describe the process and provide measures of production (se	ee the instructions to determine the appropriate informa	tion to be reported):
PROCESS INFORMATION A Name of the process contributing to the discharge:		
B. SIC or NAICS code		
C. Describe the process and provide measures of production (se	ee the instructions to determine the appropriate informa	tion to be reported)

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Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

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B. Outfall Information

STRUCTIONS FOR COMPLETING SECTION III, ITEM B.3.

In accordance with 40 CFR 122.21, all applicants must report CBOD₅, Chemical Oxygen Demand, Total Organic Carbon, Total Suspended Solids, Ammonia as N, Temperature (both summer and winter), and pH. The applicant may, however, request that reporting of data for one or more of these required parameters be waived. Such request must be supported by adequate rationale. The request shall be included as an attachment to this application.

Report available discharge data for the parameters listed. Actual data shall be provided for existing discharges and expected or estimated data provided for proposed discharges. Please include an explanation if "Pollution Prevention" is expected to provide reduction of pollutants. See Page 8 of the appendix for a list of specific parameters for which data must be provided for specific types of discharges (e.g., noncontact cooling waters, gasoline groundwater cleanups, etc.). For assistance in determining the appropriate parameters to report, call the Permits Section.

If data are available for other parameters not listed in Section III.B.3, the applicant shall report these data in the blank spaces provided or attach the information to this application on 8½" x 11" paper.

Report all data in the units provided and for the sample types specified in the table. If more than one option is available, check the appropriate box. The units are as follows: $\mu g/l = micrograms$ per liter, mg/l = milligrams per liter, $^{\circ}F =$ degrees Fahrenheit, $^{\circ}C =$ degrees Celsius. See page ii number 5 for analytical requirements.

To analyze for pH, temperature, total residual chlorine, oil and grease, and fecal coliform use **Grab Samples** unless other frequency-sample type analyses are available. To analyze for total BOD₅, total phosphorus, COD, TOC, ammonia nitrogen and total suspended solids use **24**hour composite samples unless other frequency-sample type analyses are available.

For two or more substantially identical outfalls, permission may be requested from the appropriate district office to sample and analyze onlyone outfall and submit the results of the analysis for other substantially identical outfalls. If the request is granted by the district office, on a separate sheet attached to the application form, identify which outfall was sampled and describe why the outfalls which were not sampled are substantially identical to the outfall which was sampled. See pages if and iii for sampling definitions, including "maximum daily concentration", and "maximum monthly concentration".

REPORTING OF INTAKE DATA

Applicants are required to report intake water data when they are attempting to demonstrate eligibility for "net" effluent limitations for one or more pollutants. A "net" effluent limitation is determined by subtracting the average level of the pollutant(s) present in the intake waters remaining after treatment which is not removed by the treatment system. NPDES regulations allow net limitations only in certain circumstances (see 40 CFR Part 122.45(g)). To demonstrate eligibility, report the average concentration and/or mass of the results of the analyses on the intake water. If the intake water is treated prior to use, report the intake concentrations and/or mass after treatment. In addition to the analytical results, the following information shall be submitted for each parameter:

- a) A statement that the intake water is drawn from the body of water into which the discharge is made. If the discharge is not to the same body of water from which the water is withdrawn, the facility is not eligible for net limitations.
- b) A statement of the extent to which the level of the pollutant in the intake water is reduced by treatment of the wastewater. Limitations for the net removal of pollutants are adjusted only to the extent that the pollutant is not removed.
- c) When applicable (for example, when the pollutant represents a class of compounds, e.g., BOD₅, TSS, etc.), a demonstration of the extent to which the pollutants in the intake vary physically, chemically and biologically from the pollutants contained in the discharge. Limitations are adjusted only to the extent that the concentrations of the intake pollutants vary from the discharged pollutants.

Note: Applicants for groundwater remediation discharges should also report the intake characteristics of contaminated groundwater.

NPDES Permit MI0005827

STATE OF MICHIGAN



JOHN ENGLER, Governor DEPARTMENT OF ENVIRONMENTAL QUALITY PLAINWELL DISTRICT OFFICE

"Better Service for a Better Environment" HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET www.deg.state.mi.us RUSSELL J. HARDING, Director

January 28, 1999

Mr. John P. Carlson Environmental Compliance Manager Cook Nuclear Plant One Cook Place Bridgman, Michigan 49106

Dear Mr. Carlson:

SUBJECT: Application for Renewal of NPDES Permit No. MI0005827

We have reviewed the information provided in your letter of January 25, 1999. In that letter you request that representative outfalls be used to characterize effluent characteristics for similar outfalls. We approve your request as follows:

1. Effluent from Outfall 001 will be considered representative of outfalls 001, 002, and 003.

2. Effluent from Outfall 00B will be considered representative of outfalls 00A and 00B.

Please feel free to contact me if you have any questions.

Sincerely, Gregory A. Danneffel

Plainwell District Office Surface Water Quality Division 616-692-6968

cc: Mr. Blair Zordell, Cook Nuclear Plant Mr. Dan Dell, Permits Section, SWQD Ms. Sylvia Heaton, GLEAS, SWQD



1342 SR 89 W STE B PLAINWELL MI 49080-1915

EQP 0100e (Rev 1/98)

American Electric Power Cook Nuclear Plant One Cook Place Brdgman, MI 49106 616 465 5901

> AMERICAN ELECTRIC POWER

Mr. Fred Morley Surface Water Quality Division Michigan Department of Environmental Quality 1342 SR89 West Suite B Plainwell, MI 49080

January 25, 1999

Dear Mr. Morley:

Subject: NPDES Permit No. MI0005827 Application

We are currently preparing the Wastewater Discharge Permit Application to renew our current NPDES operating permit. As noted in Section III - Industrial and Commercial Wastewater, Part B. Outfall Information Item 6, paragraph 5 contains instructions to request permission to use a single sample for similar outfalls for application purposes.

We request that Outfall 001 be used as a representative sample for Outfalls 002 (Unit Two Noncontact Cooling Water) and Outfall 003 (De-icing Mode) for application use only. Outfalls 002 and 003 are substantially identical to Outfall 001. The source of these Outfalls is Lake Michigan; similar waste streams enter each Outfall prior to discharge.

In addition, we are requesting Outfall 00B (Unit Two Steam Generator Blowdown) to be used as a representative sample for Outfall 00A (Unit One Steam Generator Blowdown). Outfall 00A and Outfall 00B are substantially identical discharges, with the exception that Outfall 00A originates from the Unit One Steam Generators, and Outfall 00B originates from the Unit Two Steam Generators.

If you have any questions, please contact me at (616) 465-5901, ext. 1153.

Sincerely,

John P. Carlson Environmental Compliance Manager

/tlm

c: Greg Danneffel - MDEQ Plainwell
Sylvia Heaton - MDEQ Lansing

Page Two Mr. Morley January 25, 1999

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this and all attached documents, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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D. E. Cooper Plant Manager

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

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B. Outfall Information

	I				
Donald C Cook Nuclear Plant		MI0005827	001FA		
3. WASTEWATER CHARACTERISTICS - CONVENTION	NAL POLLUTANTS	- Instructions for co	mpleting this page a	re on the facing pag	je.
Check this box if additional information is included	as an attachment.	To submit additional	information see page	ge il, item 8.	
	S Maximum	Maximum			States -
	Contraction Daily	Monthly.		S Number of	
Parameter	Concentration	Concentration	Units	Analyses	Sample Type
			mg/l		Grab
Biochemical Oxygen Demand - five day (BOD₅)	3	3		2	24 Hr Comp
COD (Chemical avugen demand)	6	6	mg/l	2	
		ļ		<u> </u>	
TOC (Total organic carbon)	4 5	45	mg/l	2	
······································					Grab
Ammonia Nitrogen (as N)	<0 5	<0 5	mg/l	2	24 Hr Comp
			ma/l		🔲 Grab
Fotal Suspended Solids	29	29		2	🛛 24 Hr Comp
			ma/l		🔲 Grab
Total Dissolved Solids	NA	NA		NA	24 Hr Comp
Total Phoenhorus (as P)	0.37	0.37	mg/l	1	Grab
	maximum-7day	0.07		I	XI 24 Hr Comp
Fecal Coliform Bacteria (report geometric means)	NA	NA	counts/100ml	NA	Grab
			mg/l		
al Residual Chlorine	386	180	μg/l	252	Grab
	minimum daily	Do Not Use	ma/l		Grab 🗸
Dissolved Oxygen	NA			NA	24 Hr Comp
		maximum	standard units	00	Grab
report maximum and minimum of individual samples)	70	6.5		98	24 Hr Comp
Femperature Summer	105.2	96.4	⊠℉⊡℃	188	
Femperature, Winter	798	73 5	⋈⋴ғ⊡∘с	170	
Dil & Grease	<5	<5	mg/i	2	Grab
					🔲 Grab
see Attached for additional Data					24 Hr Comp
					Grab
					24 Hr Comp
					Grab
					24 Hr Comp
					Grab
					24 Hr Comp
					Grab
					24 Hr Comp
					Grab
					24 Hr Comr

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

EASE TYPE OR PRINT		
	NPDES PERMIT NUMBER	
	MI0005827	
Existing primary industries that discharge process wastew identified in Table 2 (as determined from Table 1, <u>Testing</u> identified in Table 3 Existing primary industries must als 2 known or believed to be present in facility effluent.	A HON vater must submit the results of at least one effluent an g Requirements for Organic Toxic Pollutants by Indust io provide the results of at least one effluent analysis f	alysis for <u>selected</u> organic pollutants trial Category), and all the pollutants or any other chemical listed in Table
In addition, submit the results of all other effluent analyses	s performed within the last 5 years for any chemical list	ed in Tables 2 and 3
New primary industries that propose to discharge proces Tables 2 and 3 expected to be present in facility effluent	ss wastewater must provide an estimated effluent con	centration for any chemical listed in
5 DIOXIN AND FURAN CONGENER INFORMATION	,	
Existing industries that use or manufacture 2,3,5-trichlor TP); 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropiol trichlorophenol (TCP) or hexachlorophrene (HCP), or kno facility effluent, must submit the results of at least one effl dioxin and furan congeners must be conducted using EPA	ophenoxy acetic acid (2,4,5-T), 2- (2,3,5-trichloropherinate (Erbon), 0,0-dimethyl 0-(2,4,5-trichlorophenyl) ows or has reason to believe that 2,3,7,8-Tetrachlorodi luent analysis for the dioxin and furan congeners listed A Method 1613	noxy) propanoic acid, (Silvex, 2,3,5 phosphorothionate (Ronnel), 2,4,5 benzo-p-dioxin (TCDD) is present in I in Table 6. All effluent analyses fo
In addition, submit the results of all other effluent analyse	s performed within the last 5 years for any dioxin and f	uran congener listed in Table 6.
New industries that expect to use or manufacture 2,3,5- 2,3,5-TP), 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropro trichlorophenol (TCP) or hexachlorophrene (HCP), or kno facility effluent must provide estimated effluent concentrat	trichlorophenoxy acetic acid (2,4,5-T), 2- (2,3,5-trichloppionate (Erbon), 0,0-dimethyl 0-(2,4,5-trichlorophenyl) by s or has reason to believe that 2,3,7,8-Tetrachlorodin tions for the dioxin and furan congeners listed in Table	orophenoxy) propanoic acid (Silvex) phosphorothionate (Ronnel), 2,4,5 benzo-p-dioxin (TCDD) is present in 6.
 OTHER INDUSTRY PRIORITY POLLUTANT INFORMAT Existing secondary industries, or existing primary industri analysis for any chemical listed in Tables 2 and 3 known of 	TON es that discharge non-process wastewater, must subm or believed to be present in facility effluent	nit the results of at least one effluen
In addition, submit the results of all other effluent analyses	s performed within the last 5 years for any chemical list	ted in Tables 2 and 3
New secondary industnes, or new primary industries t concentration for any chemical listed in Tables 2 and 3 ex	hat propose to discharge non-process wastewater, pected to be present in facility effluent.	must provide an estimated effluer
7. ADDITIONAL TOXIC AND OTHER POLLUTANT INFORM	MATION	
All existing industries, regardless of discharge type, mus believed to be present in facility effluent, and a measured be present in facility effluent. In addition, submit the re Tables 4 and 5	It provide the results of at least one analyses for any or estimated effluent concentration for any chemical lisults of any effluent analysis performed within the last	chemical listed in Table 4 known o isted in Table 5 known or believed to st 5 years for any chemical listed in
New industries, regardless of discharge type, must provid be in facility effluent	le an estimated effluent concentration for any chemica	l listed in Tables 4 and 5 expected t
B. INJURIOUS CHEMICALS NOT PREVIOUSLY REPORTE New or existing industries, regardless of discharge type injurious chemicals known or believed to be present in effluent data that are less than 5 years old for these chemicals	ED , must provide a measured or estimated effluent con facility effluent that have not been previously ident nicals must be reported.	centration for any toxic or otherwis ified in this application Quantitativ
NOTE: All effluent data submitted in response to question see page ii, item 8 If the effluent concentrations are completed for each data row Parameter, CAS No, Cor See page ii, number 5 for analytical test requirements	ns 4, 5, 6, 7, and 8 above should be recorded on page estimated, place an E in the "Analytical Method" co ncentration(s), Sample Type, Analytical Method, Quar	31. To submit additional informatio lumn. The following fields must b itification Level and Detection Leve



Michigan Department of En Imental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

PLEASE TYPE OR P	RINT														
FACILITY NAME					Ν	IPDES PERMI	T NUMBER			OUTFALL N	UMBER				
Donald C Cook Nucl	ear Plant				N	/10005827				001					
SAMPL	E DATE 🗲	1/8/01	7/17/01	8/7/01	8/14/01	9/4/01	9/18/01	10/9/01	10/23/01	11/6/01	1/22/02	a and a set			risting Delive
PARAMETER	CAS No.	(ug/l)	l≃ Conc. : : (ug/l)	Conc. ∛ (ug/l) [√]	Conc. (ug/l)	Conc. (ug/l) ~	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)) Conc. (ug/l)	`Sample Type	Analytic al		
Hyrazıne	7803578	<10	<3	<3	<3	<3	<3	<3	<3	<3	58	Grab	D1385	3	10
Date		2/4/02	2/8/02	1/4/00	1/5/00	1/8/00	1/26/00	2/12/00	2/17/00	2/19/00	2/21/00				
Boron	7440428	114	28 9	638	297	224	383	857	627	466	603	Grab	200.7	13.1	39 3
See Attached															
for additional															
data.															
· ·															
							-								
								·							
								·					· · · · · · · · · · · · · · · · · · ·		
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Section III.B.6 and 7

Additional Sample Data Summary Sheet

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For Outfall 001

							Max	# of
Parameter	2/1/99	3/21/02	5/30/02	Sample type	Max Daily	Analytical	monthly	Analyses
Table 2	MANN AVEN	柳花红的		式 statistics		S CARLE	and a straight of the	. Carl Sol and a second second
See Attached data set from B	elmonte Park La	boratories.						
Table 3	er ter der sides	你不会说 -1929	制造公司社	Steel Charles	已在自己的		Real Parts and the	Contract to be
Antimony (ug/I)	<1	<1	-	Grab	<1	204.2/200.7	<1	2
Arsenic (ug/I)	<1	1	<1	Grab	1	206 2/200.7	1	3
Beryllium (ug/l)	<1	<0 2	-	Grab	<1	200.7	<1	2
Cadmium (ug/l)	<0 2	<0 2	•	Grab	<0.2	213.2/200.7	<0.2	2
Chromium (ug/I)	<10	<2	•	Grab	<10	200 7	<10	2
Copper (ug/l)	<1	3	2	Grab	3	220 2/200.7	3	3
Lead (ug/l)	<1	1	<2	Grab	1	239 2/200 7	1	3
Nickel (ug/l)	<5	<3	•	Grab	<5	249 2/200.7	<5	2
Total Phenols (ug/l)	· <10	•	•	Grab	<10	420.1	<10	1
Selenium (ug/l)	• * *	<1.0	-	Grab	<1.0	270.3	<10	1-
Silver(ug/I)	<0 5	<0.2	-	Grab	<0.5	272.2/200.7	· <0 5	2
Thallium -(ug/l)	- <1	. <1	•	Grab	<1	279.2	<1	2
Zinc (ug/l)	-	<4_	-	Grab	<4	200.7	<4	1
Cyanide (mg/l)	<0.01	<0 01	-	Grab	<0.01	335 2	<0 01	2
Mercury (ng/l)	-	2.69	0.954	Grab	2 69	1631	2.69	2
Table 4	AND LOUGH	11.40533953		计中国文法理论			JANESSAN	-12914-1213
Sulfate (mg/l)	<10	23	-	Composite	23	375 4	23	2
Additional Data From Belmo	nte Park Laborat	ories is attach	ed					
See Attached Data set from C	Cook Nuclear Pla	nt Laboratory						
Table 5 the second second second	Verk of Paris da 198	10-1-0-1-0-1-0-1-0-	Su totak sijediji Tana ka	100 salar salar i		ura (Kraina)	I Water Contraction	的过去式
See Attached data set from E	eimonte Park La	boratories.						
See Attached Data set from C	Cook Nuclear Pla	nt Laboratory						

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Section III.B.6

Non-routine sample data From Table 4

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001 TRC USEPA Method 330.5

Outfall

001	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02	Nov-02		
1						1		37			1	1	1									135	149		
2								48			9	1	<1									149			
3												1	<1								110	150			
4	76					1	125					3	<1					140			80	187	176		,
5	78					101						3	<1					78			67		162		
6	_141					70		41				1	<1					103		171	55		148		
7	84					83		51				1	<1									143	152		
8	113					81		96				_ 1	<1									156	143		
9	115											1	<1								50	137			
10	75											8	<1	131					90		18	135			
11					139	91				172		6	<1	147					87		108	145	148		
12					79	84				119		4	1	109						89	131		174		
13					88	69	61	27				4	1	123						47	101		146 3		
14					79			39				5		147			<1					143	180.3		
15						5		37		33		2		49			1					159	194.3		
16	1						20	26		67		1		21			2		114	79	135	174	386		
17					87		_20_					1		55			<1		129		123	198			
18						26	6	80	2			1					2				125	166			
19					101	39	_1		7			2					<1			56	120				
20					99	68	1	71				2					_1			75	129				
21					107	75		32			158	2					1			113	139	149			
22					91	6		67				_1								85	139	166			
23					99		1	77	13	71		_1					_1		106		141	178			,
24				1	90		1	117	7	143		3							159			116			
25				2	91	37		110	9	148		5							92			122			
26				2				119				3					2			64	181				
27				2		30	13	107				6					2			76	153				
28				3	86			97				6					2			151	186	173			1
29				2	80			170				4					2			96		181			1
30					- 14		1					2					1			104	151	178			
31					11					16		2					2					176			
	111	0	0	2	120	101	105	170	12	170	150		4	447	0	~	2	440	450	474	400	400	200		
	141	0	0	ა ი	01	101	125	72	6	06	100	2	1	147	0	0	2	140	159	1/1	180	198	385		
MONANY AVG	00	U	v	2	51	40	15	12	Ŭ			Numba	rofan	alveos	220		2			- 33	110	157	100	۱.,	I.
											NI	munibe	i Ui dili Karataka	alyses	239		n		200						
											NU	mper o	r < det v	/alues	13		Dail	ly max	380	ug/L					
														Iotal	252		Month	у мах	180	ug/L					
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(((
\mathbf{X}																								,	,



Belmonte Park Environmental Laboratories

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AMERICAN ELECTRIC POWER (AEP) 1 COOK PLACE BRIDGMAN, MICHIGAN 49106

Attn: BLAIR ZORDELL

Purchase Order: 4307976

Work ID: OUTFALL 001 - 00C Date Received: 02/02/99 Date Completed: 03/16/99

Client Code: AEP_4

Order #: 99-02-060

Date: 03/16/99 09:22

ND= NONE DETECTED OHIO CERT.# 12345

Invoice Number:

SAMPLE IDENTIFICATION

Sample		Sample		Sample		Sample	
Number	De	scription		Number	De	escription	
01	OUTFALL	001	02/01/99	. 24	OUTFALL	00G	02/01/99
02	OUTFALL	001	02/01/99	25	OUTFALL	00G	02/01/99
03	OUTFALL	001	02/01/99	26	OUTFALL	00G	02/01/99
04	OUTFALL	001	02/01/99	27	OUTFALL	00G	02/01/99
05	OUTFALL	001	02/01/99	28	OUTFALL	00G	02/01/99
06	OUTFALL	001	02/01/99	29	OUTFALL	00G	02/01/99
07	OUTFALL	001	02/01/99	30	OUTFALL	00G	02/01/99
08	OUTFALL	001	02/01/99	31	OUTFALL	00C	02/01/99
09	OUTFALL	001	02/01/99	32	OUTFALL	00C	02/01/99
10	OUTFALL	001	02/01/99	33	OUTFALL	00C	02/01/99
11	OUTFALL	001	02/01/99	34	OUTFALL	00C	02/01/99
12	OUTFALL	001	02/01/99	35	OUTFALL	000	02/01/99
13	OUTFALL	001	02/01/99	36	OUTFALL	00C	02/01/99
14	OUTFALL	001	02/01/99	37	OUTFALL	00C	02/01/99
15	OUTFALL	001	02/01/99	38	OUTFALL	000	02/01/99
16	OUTFALL	00G	02/01/99	39	OUTFALL	000	02/01/99
17	OUTFALL	00G	02/01/99	40	OUTFALL	00C	02/01/99
18	OUTFALL	00G	02/01/99	41	OUTFALL	00C	02/01/99
19	OUTFALL	00G	02/01/99	42	OUTFALL	00C	02/01/99
20	OUTFALL	00G	02/01/99	43	OUTFALL	000	02/01/99
21 🔹	OUTFALL	00G	02/01/99	44	OUTFALL	000	02/01/99
22	OUTFALL	00G	02/01/99	45	OUTFALL	000	02/01/99
23	OUTFALL	00G	02/01/99				



Page 2

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Enclosed are results of specified samples submitted for analyses. If there are any questions, please contact Matt Lake. Our Ohio EPA Certification numbers are 836 & 837. Any result of "BDL" indicates "BELOW DETECTION LIMIT".

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QO

Certified By MATT LAKE



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TEST RESULTS BY SAMPLE

Page 3

Sample: 01A	. OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	ion	Resu	lt Lim	it	<u>Units</u>	<u>Analyzed</u>	By
5day CBOD.	EPA 405.1		3	2	mg/L	02/08/99	PT
SUSPENDED SOL	IDS,EPA 160.2	B	DL	5	mg/L	02/11/99	KC
Sample: 02A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	zion	Resu	<u>lt Lim</u>	<u>it</u>	<u>Units</u>	<u>Analyzed</u>	By
COD,	 EPA 410.4		6	5	mg/L	02/19/99	\mathbf{LG}
TOC,	EPA 415.1	4	.5	1	mg/L	02/09/99	WL
Sample: 03A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	•
			Detec	<u>tion</u>		•	
Test Descript	tion	Resu	<u>lt Lim</u>	<u>it</u>	<u>Units</u>	<u>Analyzed</u>	By
AMMONIA N,	EPA 350.2	B	IDL 0	.5	mg/L	02/11/99	JB
Sample: 05A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
-			Detec	tion			
Test Descript	tion	Resu	<u>ilt Lim</u>	<u>it</u>	<u>Units</u>	<u>Analyzed</u>	By
EPA 625 SEMI	VOL. EXTRACT		-		-		SD
EXTRACTION,	EPA 608	•	-		-	*	SD
Sample: 06A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
		,	Detec	tion			
Test Descrip	tion	Rest	<u>ilt Lin</u>	<u>nit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
ALUMINUM,	EPA 200.7	0	.05 0.	.05	mg/L	02/12/99	RJE
ANTIMONY,	EPA 204.2	I	BDL 0.0	001 ·	mg/L	03/05/99	RJE
ARSENIC,	EPA 206.2	, , I	BDL 0.0	001	mg/L	03/05/99	RJE
BARIUM,	EPA 200.7	0.0	0.0	005	mg/L	02/11/99	RJE
BERYLLIUM,	EPA 200.7	~ 1	BDL 0.(001	mg/L	02/11/99	RJE
BORON,	EPA 200.7	0	.07 0	.05	mg/L	02/12/99	RJE
CADMIUM,	EPA 213.2	1	BDL 0.00	002	mg/L	03/08/99	RJE
CHROMIUM,	EPA 200.7	1	BDL 0	.01	mg/L	02/11/99	RJE
COBALT,	EPA 200.7	1	BDL 0	.01	mg/L	02/11/99	RJE
COPPER,	EPA 220.2	1	BDL 0.	001	mg/L	03/08/99	RJE
IRON,	EPA 200.7	:	BDL	0.1	mg/L	02/11/99	RJE
LEAD,	EPA 239.2	:	BDL 0.	001	mg/L	03/05/99	RJE
TTTHTIM	EPA 200.7	0	.01 0	.01	mg/L	02/12/99	RJE



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TEST RESULTS BY SAMPLE

Page 4

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			Detect	<u>tion</u>			
	<u>Resu</u>	<u>lt</u>	<u>Lim</u> :	<u>it</u>	<u>Units</u>	Analyzed	By
200.7	:	11		1	mg/L	02/12/99	RJE
200.7	BI	DL	0.0	01	mg/L	02/11/99	RJE
245.1	B	DL	0.00	02	mg/L	02/11/99	RJE
WATER		-			-		EP
200.7	B	DL	0.0	01	mg/L	02/11/99	RJE
249.2	B	DL	0.0	05	mg/L	03/08/99	RJE
200.7	B	DL	0	.1	mg/L	02/11/99	RJE
272.2	B	DL	0.00	05	mg/L	03/08/99	RJE
200.7	· 0.	12	0.0	01	mg/L	02/12/99	RJE
279.2	B	DL	0.0	01	mg/L	03/05/99	RJE
200.7	. B	DL	0	.1	mg/L	02/15/99	RJE
200.7	B	DL	0.	02	mg/L	02/11/99	RJE
L 001	02/01/99	Coll	ected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
	Resu	lt	Lim	it	Units	Analyzed	By
376.1	B	DL		1	mg/L	03/05/99	LG
335.2	B	DL	0.	01	mg/L	03/04/99	ĹG
L 001	02/01/99	Coll	ected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
	Resu	<u>lt</u>	Lim	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
420.1	В	DL	0.	01	mg/L	02/23/99	JB
L 001	02/01/99	Coll	ected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
	Resu	<u>lt</u>	Lim	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
OTAL	В	DL	0.	05 .	mg/L	02/03/99	ML
L 001	02/01/99	Coll	ected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			•
	Resu	lt	Lim	it	Units	<u>Analyzed</u>	<u>By</u>
	0.	38	0	.2	mg/L	02/05/99	LG
	В	DL	0	.5	mg/L	02/11/99	JB
A 365.1	ο.	37	0	.1	mg/L	02/18/99	LG
	-	זח	0	E	m . / T.	02/06/09	TB
	200.7 200.7 245.1 WATER 200.7 249.2 200.7 272.2 200.7 279.2 200.7 200.7 200.7 L 001 . 376.1 . 335.2 . 001 . 420.1 . 001 . 420.1 . 001 . 001 . 420.1 . 001 . 365.1	Result 200.7 Bit 245.1 Bit WATER Bit 200.7 Bit 249.2 Bit 200.7 Bit 376.1 Bit 335.2 Bit L 001 02/01/99 At 20.1 Bit MATER Bit JL 001 02/01/99 XOTAL Bit JL 001 02/01/99 XOTAL Bit JL 001 02/01/99 XOTAL Bit A 365.1 0.	Result 200.7 11 200.7 BDL 245.1 BDL WATER - 200.7 BDL 249.2 BDL 200.7 BDL 249.2 BDL 200.7 BDL 272.2 BDL 200.7 0.12 279.2 BDL 200.7 BDL 335.2 BDL 420.1 Result A 420.1 BDL A 2001 02/01/99 Coll	Detect Result Lim 200.7 11 200.7 BDL 0.00 245.1 BDL 0.00 WATER - - 200.7 BDL 0.00 245.1 BDL 0.00 249.2 BDL 0.00 200.7 BDL 0.00 2001 02/01/99 Collected: Detec Result Lim <td>Detection Result Limit 200.7 11 1 200.7 BDL 0.01 245.1 BDL 0.0002 WATER - - 200.7 BDL 0.01 249.2 BDL 0.005 200.7 BDL 0.1 272.2 BDL 0.001 200.7 0.12 0.01 277.2 BDL 0.1 200.7 0.12 0.01 200.7 BDL 0.1 200.7 BDL 0.02 Loo1 02/01/99 Collected: 02/01/99 L 001 02/01/99 A 420.1 Detection<</td> <td>Result Limit Units 200.7 11 1 mg/L 200.7 BDL 0.01 mg/L 245.1 BDL 0.0002 mg/L WATER - - - 200.7 BDL 0.01 mg/L 245.1 BDL 0.005 mg/L 245.1 BDL 0.01 mg/L 249.2 BDL 0.005 mg/L 200.7 BDL 0.1 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.1 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.02 mg/L 200.7 BDL 0.02 mg/L 200.7 BDL 0.02 mg/L 2001</td> <td>Detection Result Limit Units Analyzed 200.7 11 1 mg/L 0.2/12/99 200.7 BDL 0.01 mg/L 0.2/11/99 245.1 BDL 0.002 mg/L 0.2/11/99 245.1 BDL 0.01 mg/L 0.2/11/99 249.2 BDL 0.005 mg/L 0.3/08/99 200.7 BDL 0.1 mg/L 0.2/11/99 249.2 BDL 0.005 mg/L 0.3/08/99 200.7 D.12 0.01 mg/L 0.2/11/99 200.7 D.12 0.01 mg/L 0.3/08/99 200.7 BDL 0.01 mg/L 0.3/05/99 200.7 BDL 0.02 mg/L 0.2/11/99 200.7 BDL 0.01 mg/L 0.3/05/99 200.7 BDL 0.01 mg/L 0.3/04/99 200.1 02/01/99 Category: AQUEOUS Detection</td>	Detection Result Limit 200.7 11 1 200.7 BDL 0.01 245.1 BDL 0.0002 WATER - - 200.7 BDL 0.01 249.2 BDL 0.005 200.7 BDL 0.1 272.2 BDL 0.001 200.7 0.12 0.01 277.2 BDL 0.1 200.7 0.12 0.01 200.7 BDL 0.1 200.7 BDL 0.02 Loo1 02/01/99 Collected: 02/01/99 L 001 02/01/99 A 420.1 Detection<	Result Limit Units 200.7 11 1 mg/L 200.7 BDL 0.01 mg/L 245.1 BDL 0.0002 mg/L WATER - - - 200.7 BDL 0.01 mg/L 245.1 BDL 0.005 mg/L 245.1 BDL 0.01 mg/L 249.2 BDL 0.005 mg/L 200.7 BDL 0.1 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.1 mg/L 200.7 BDL 0.01 mg/L 200.7 BDL 0.02 mg/L 200.7 BDL 0.02 mg/L 200.7 BDL 0.02 mg/L 2001	Detection Result Limit Units Analyzed 200.7 11 1 mg/L 0.2/12/99 200.7 BDL 0.01 mg/L 0.2/11/99 245.1 BDL 0.002 mg/L 0.2/11/99 245.1 BDL 0.01 mg/L 0.2/11/99 249.2 BDL 0.005 mg/L 0.3/08/99 200.7 BDL 0.1 mg/L 0.2/11/99 249.2 BDL 0.005 mg/L 0.3/08/99 200.7 D.12 0.01 mg/L 0.2/11/99 200.7 D.12 0.01 mg/L 0.3/08/99 200.7 BDL 0.01 mg/L 0.3/05/99 200.7 BDL 0.02 mg/L 0.2/11/99 200.7 BDL 0.01 mg/L 0.3/05/99 200.7 BDL 0.01 mg/L 0.3/04/99 200.1 02/01/99 Category: AQUEOUS Detection



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TEST RESULTS BY SAMPLE

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	Sample: 11A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
				Detec	tion			
	Test Descript	ion	Resu	lt Lin	it	Units	Analyzed	By
	OTL C CPEASE	EDA 413.1	E		5	mg/L	02/10/99	PT
	UII & GREADE,		_			2.		
	Sample: 12A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
				Detec	tion			•
	Test Descript	ion	Resu	lt Lin	<u>nit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
	GROSS ALPHA.	IN WATER		BDL	3	pCi/L	03/08/99	SF
	GROSS BETA.	IN WATER	E	BDL	4 -	pCi/L	03/08/99	SF
	PADTIM.	IN WATER	I	BDL	1	pCi/L	03/10/99	SF
	PADTIM-226.	IN WATER	E	BDL	1	pCi/L	03/10/99	SF
	10401011 2207							
	Sample: 13A	OUTFALL 001	02/01/99	Collected	02/01/99	Category:	AQUEOUS	
· · · •				Dete	tion	•		
-	Tost Descript	ion	Resi	ilt Lit	nit	Units	<u>Analyzed</u>	By
	METUVI.ENE BLI	E ACTIVE SUB.	<u></u>	BDL 0	.01	mg/L	02/17/99	ML
	OTTENTE	FDA 375 4	-		10	mg/L	02/18/99	JB
	SULFAIL,	DER JIJIA	-		2	mg/L	02/17/99	ML
	SUBFILE,		-			-		
	Sample: 14A	OUTFALL 001	02/01/99	Collected	: 02/01/99	Category:	AQUEOUS	
					-		-	
				Dete	ction	-		
	Test Descript	ion	Res	ult <u>Li</u>	mi <u>t</u> '	<u>Units</u>	<u>Analyzed</u>	By
	ASBESTOS WATE	ER		ND	0.2 M	F/L, >10um	02/12/99	EM
	Sample: 16A	OUTFALL 00G	02/01/99	Collected	: 02/01/99	Category:	AQUEOUS	
				Dete	ction	-		
	Test Descript	tion	Res	ult <u>Li</u>	mit ·	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
	5day CBOD.	EPA 405.1		4	2	mg/L	02/08/99	\mathbf{PT}
	SUSPENDED SO	LIDS.EPA 160.2		BDL	5.	mg/L	02/11/99	KC
	_ 305F1R010 50.							
	Sample: 17A	OUTFALL 00G	02/01/99	Collected	: 02/01/99	Category	AQUEOUS	
				Dete	ction		•	
		tion	Des	11]+ I.i	mit	Units	Analyzed	By
	Test Descrip		Keb		5	ma/L	02/19/99	LG
	COD,	EPA 410.4		5 1	-	ma/1.	02/09/99	JW
	TOC,	EPA 415.1		2.1	+			



TEST RESULTS BY SAMPLE

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Sample: 18A OUTFALL 00G	02/01/99 Collected: 02/01/99	Category: AQUEOUS
Test Description AMMONIA N, EPA 350.2	Detection Result Limit BDL 0.5	<u>Units Analyzed By</u> mg/L 02/11/99 JB
Sample: 20A OUTFALL 00G	02/01/99 Collected: 02/01/99	Category: AQUEOUS
Test Description EPA 625 SEMI VOL. EXTRACT EXTRACTION, EPA 608	Detection Result Limit	<u>Units Analyzed By</u> - SD - SD
Sample: 21A OUTFALL 00G	02/01/99 Collected: 02/01/99	Category: AQUEOUS
	Detection	

Test Description			<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>Analyzed</u>	By 🗸
ALUMINUM,	EPA	200.7	BDL	0.05	mg/L	02/12/99	RJE
ANTIMONY,	EPA	204.2	BDL	0.001	mg/L	03/05/99	RJE
ARSENIC,	EPA	206.2	BDL	0.001	mg/L	03/05/99	RJE
BARIUM,	EPA	200.7	0.022	0.005	mg/L	02/11/99	RJE
BERYLLIUM,	EPA	200.7	BDL	0.001	mg/L	02/11/99	RJE
BORON,	EPA	200.7	0.06	0.05	mg/L	02/12/99	RJE
CADMIUM,	EPA	213.2	BDL	0.0002	mg/L	03/08/99	RJE
CHROMIUM,	EPA	200.7	BDL	0.01	mg/L	02/11/99	RJE
COBALT,	EPA	200.7	BDL	0.01	mg/L	02/11/99	RJE
COPPER,	EPA	220.2	BDL	0.001	mg/L	03/08/99	RJE
IRON,	EPA	200.7	BDL	0.1	mg/L	02/11/99	RJE
LEAD,	EPA	239.2	BDL	0.001	mg/L	03/05/99	rje
LITHIUM,	EPA	200.7	BDL	0.01	mg/L	02/12/99	RJE
MAGNESIUM,	EPA	200.7	12	l	mg/L	02/12/99	RJE
MANGANESE,	EPA	200.7	BDL	0.01	mg/L	02/11/99	RJE
MERCURY,	EPA	245.1	BDL	0.0002	· mg/L	02/11/99	RJE
METALS DIGESTION	,	WATER	-		-		EP
MOLYBDENUM,	EPA	200.7	BDL	0.01	mg/L	02/11/99	RJE
NICKEL,	EPA	249.2	BDL	0.005	mg/L	03/08/99	RJE
SELENIUM,	EPA	200.7	BDL	0.1	mg/L	02/11/99	RJE
SILVER,	EPA	272.2	BDL	0.0005	mg/L	03/08/99	RJE
STRONTIUM,	EPA	200.7	0.14	0.01	mg/L	02/12/99	RJE
THALLIUM,	EPA	279.2	BDL	0.001	mg/L	03/05/99	RJE
URANIUM	EPA	200.7	BDL	0.1	mg/L	02/15/99	RJE
ZINC,	EPA	200.7	BDL	0.02	mg/L	02/11/99	RJE
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	Order # 99-02-	060		•	Page 7				
	03/16/99 09:22	·	TEST RES	ULTS BY SAME	PLE				
•			00/01/00	Collected	02/01/99	Category	LOTIFOUS		
	Sample: 22A	OUTFALL DUG	02/01/99	COLLECCER.	02/01/00	category.	AQUICUD		
				_ Detect	ion				
	Test Descripti	on .	Resu	lt Limi	lt	Units	Analyzed	By	
	SULFIDE.	 EPA 376.1	B	DL	1	mg/L	03/05/99	LG	
	TOTAL CYANIDE,	EPA 335.2	B	DL 0.0	01	mg/L	03/15/99	LG	
	Sample: 23A	OUTFALL 00G	02/01/99	Collected:	02/01/99	Category:	AQUEOUS		
			_	Detect	<u>tion</u>			-	
	<u>Test Descripti</u>	on	Resu	<u>1t Lim</u>		Units	Analyzed	BY	
	PHENOLICS,	EPA 420.1	В	DL 0.0	01	mg/L	02/23/99	JB	
	C		07/01/00	Collected	02/01/99	Category	LOUROUS		
	Sampie: 24A	OUTFALL UUG	02/01/33	COTTECCED.	02/01/55	category.	AGODOD		
				Detect	tion				
<u> </u>	Test Descripti	on	Resu	lt Lim	it	Units	Analyzed	By	
	CHLOPINE RESI	TITAL TOTAL	B		05	mg/L	02/03/99	ML	
			_						
	Sample: 25A	OUTFALL 00G	02/01/99	Collected:	02/01/99	Category:	AQUEOUS		
	-	~							
				Detec	tion	• •.		_	
	<u>Test Descripti</u>	on	Resu	<u>lt</u> Lim	it	Units	Analyzed	By	
	NITRATE-NITRI	E N	0.	50 0	.2	mg/L	02/05/99	LG	
	ORGANIC NITRO	JEN .	E	IDL 0	.5	mg/L	02/11/99	JB	
	PHOSPHORUS,	EPA 365.1	E	IDL 0	.1	mg/L	02/18/99	LG	
	TKN,	EPA 351.3	E	SDL 0	.5	mg/L	02/06/99	JB	
	5			Collected.	02/01/99	Category	AOUROUS		
	Sample: 20A	COLLETTIN DOG	02/01/33	COTTECCER.	02/02/00	category.			
			-	Detec	tion				
	Test Descript:	ion	Resi	<u>ilt Lim</u>	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>	
	OIL & GREASE,	EPA 413.1	I	BDL	5 ·	mg/L	02/10/99	\mathbf{PT}	
		ب د				. .			
	Sample: 27A	OUTFALL 00G	02/01/99	Collected:	02/01/99	Category:	AQUEOUS		
	_ • .		-	Detec	tion	This	Analyzed	Dee	
	Test Descript	<u>10n</u>	Rest	<u>11C 71U</u>	2		Allaryzed	<u>57</u>	
	GROSS ALPHA,	IN WATER	1	חתק	2	PC1/1	03/00/33	Sr Sr	
	GROSS BETA,	IN WATER	1	1UL	4		03/00/33	07 07	
\sim	RADIUM,	IN WATER	1	301	1 7		03/10/00	31 22	
Υ	RADIUM-226,	IN WATER]	יזמצ	Ŧ	pc1/L	02/10/33	ər	
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TEST RESULTS BY SAMPLE

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Sample: 28A	OUTFALL 00G	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	zion	Resu	lt Lim	it	Units	Analvzed	Bv
METHYLENE BLU	IE ACTIVE SUB.	B	DL 0.	01		02/17/99	MT.
SILFATE	EPA 375 4	- 1	13	10		02/18/99	
CIII PITP	BIR 575.4	-	10	2		02/10/99	
SULFILE,		ط	עני	2	шд/ ц	02/1//99	Ш.
Sample: 29A	OUTFALL 00G	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	zion	Resu	lt Lim	it	Units	Analvzed	Bv
ASBESTOS WATH	ER		ND 0		/L. >10um	02/12/99	EM
					, _, >10 am	02, 22, 33	
Sample: 31A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	•
			Detec	tion			
Test Descript	zion	Resu	lt Lim	it	Units	Analyzed	Bv
5day CBOD.	EPA 405.1		4	2		02/08/99	PT
SUSPENDED SOI	LTDS EPA 160 2	19	זת.	5		02/11/99	ve ve
SOBERVER PO	5155, BER 100.2	D		5	mg/ n	02/11/99	ΛC
Sample: 32A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	tion	Resu	lt Lim	it	Units	Analyzed	By
COD,	EPA 410.4	E	DL	5	mg/L	02/19/99	LG
TOC.	EPA 415.1	F	DL	1	mg/L	02/09/99	WL
2007		-		-			••••
Sample: 33A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	tion	Resu	lt Lim	it	Units	Analvzed	Bv
AMMONTA N.	EPA 350 2	<u></u> F	<u>זרא</u> ס <u>וו</u>	.5 .		02/11/99	
AMONIA NJ	11A 330.2	-				02/11/33	00
Sample: 35A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descrip	tion	Resu	ilt Lim	it	Units	Analyzed	Bv
EPA 625 SEMT	VOL. EXTRACT		-				- SD
EVTRACTION	EDA COP		_		_		сп
EATRACIION,	EFA OUS		-		-		30

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TEST RESULTS BY SAMPLE

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OUTFALL 00C Sample: 36A

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02/01/99 Collected: 02/01/99 Category: AQUEOUS

			Detection			
Test Descripti	on	<u>Result</u>	<u>Limit</u>	<u>Units</u>	Analyzed	By
ALUMINUM,	EPA 200.7	BDL	0.05	mg/L	02/12/99	RJE
ANTIMONY,	EPA 204.2	0.002	0.001	mg/L	03/05/99	RJE
ARSENIC,	EPA 206.2	BDL	0.001	mg/L	03/05/99	RJE
BARIUM,	EPA 200.7	BDL	0.005	mg/L	02/11/99	RJE
BERYLLIUM,	EPA 200.7	BDL	0.001	mg/L	02/11/99	RJE
BORON,	EPA 200.7	BDL	0.05	mg/L	02/12/99	RJE
CADMIUM,	EPA 213.2	BDL	0.0002	mg/L	03/08/99	RJE
CHROMIUM,	EPA 200.7	BDL	0.01	mg/L	02/11/99	RJE
COBALT,	EPA 200.7	· BDL	0.01	mg/L	02/11/99	RJE
COPPER,	EPA 220.2	0.012	0.001	mg/L	03/08/99	RJE
IRON,	EPA 200.7	BDL	0.1	mg/L	02/11/99	RJE
LEAD,	EPA 239.2	BDL	0.001	mg/L	03/05/99	RJE
LITHIUM,	EPA 200.7	BDL	0.01	mg/L	02/12/99	RJE
MAGNESIUM,	EPA 200.7	BDL	1	mg/L	02/12/99	RJE
MANGANESE,	EPA 200.7	0.01	0.01	mg/L	02/11/99	RJE
MERCURY,	EPA 245.1	BDL	0.0002	mg/L	02/11/99	RJE
METALS DIGESTI	ION, WATER	-		-		EP
MOLYBDENUM,	EPA 200.7	BDL	0.01	mg/L	02/11/99	RJE
NICKEL,	EPA 249.2	BDL	0.005	mg/L	03/08/99	RJE
SELENIUM,	EPA 200.7	BDL	0.1	mg/L	02/11/99	RJE
SILVER,	EPA 272.2	BDL	0.0005	mg/L	03/08/99	RJE
STRONTIUM,	EPA 200.7	BDL	0.01	mg/L	02/12/99	RJE
THALLIUM,	EPA 279.2	_ BDL	0.001	mg/L	03/05/99	RJE
URANIUM	EPA 200.7	BDL	0.1	mg/L	02/15/99	RJE
ZINC,	EPA 200.7	BDL	0.02	mg/L	02/11/99	RJE
Sample: 37A	OUTFALL 00C	02/01/99 Co	llected: 02/01/9	9 Category:	AQUEOUS	
		s	Detection ·		_	
Test Descript:	ion	<u>Result</u>	<u>Limit</u>	Units	Analyzed	By
SULFIDE,	EPA 376.1	, BDL	1	mg/L	03/05/99	LG
TOTAL CYANTDE	. EPA 335.2	BDL	0.01	mg/L	03/04/99	\mathbf{LG}

Test Description		<u>Result</u>	Limit	U
SULFIDE,	EPA 376.1	BDL	1	
TOTAL CYANIDE,	EPA 335.2	BDL	0.01	

Sample: 38A OUTFALL 00C

			<u>Detection</u>			
Test Description	n	Result	Limit	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
PHENOLICS,	EPA 420.1	BDL	0.01	mg/L	02/23/99	JB

02/01/99 Collected: 02/01/99 Category: AQUEOUS

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TEST RESULTS BY SAMPLE

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Sample: 39A	OUTFALL OOC	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	ion	Resu	lt Lim	it	<u>Units</u>	<u>Analyzed</u>	By
CHLORINE, RES	IDUAL TOTAL	B	DL 0.	05	mg/L	02/03/99	ML
Sample: 40A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	ion	Resu	<u>lt Lim</u>	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
NITRATE-NITRI	TE N	E	DL 0	.2	mg/L	02/05/99	LG
ORGANIC NITRO	GEN	E	DL 0	.5	mg/L	02/11/99	JB
PHOSPHORUS,	EPA 365.1	E	DL 0	.1	mg/L	02/18/99	LG
TKN,	EPA 351.3	E	DL 0	.5	mg/L	02/06/99	JB
Sample: 41A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	ion	Resu	ilt Lim	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
OIL & GREASE,	EPA 413.1	E	BDL	5	mg/L	02/10/99	PT
Sample: 42A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descript	<u>cion</u>	Resu	<u>ilt Lim</u>	<u>it</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
GROSS ALPHA,	IN WATER	E	BDL	3	pCi/L	03/08/99	SF
GROSS BETA,	IN WATER	I	BDL	4	pCi/L	03/08/99	SF
RADIUM,	IN WATER	E	BDL	1	pCi/L	03/10/99	SF
RADIUM-226,	IN WATER	I	BDL	1	pCi/L	03/10/99	SF
Sample: 43A	OUTFALL 00C	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion ·			
Test Descrip	tion	Rest	<u>ilt Lin</u>	<u>nit</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
METHYLENE BL	UE ACTIVE SUB.	1	BDL 0.	.01	mg/L	02/17/99	ML
SULFATE.	EPA 375.4	1	BDL	10	mg/L	02/18/99	JB
SULFITE,		1	BDL	2	mg/L	02/17/99	ML
Sample: 44A	OUTFALL 00C	02/01/99	Collected	: 02/01/99	Category:	AQUEOUS	
			Detec	ction			
Test Descrip	tion	Res	ult Lir	<u>nit</u>	<u>Units</u>	<u>Analyzed</u>	By
ASBESTOS WAT	ER		ND (0.2 M	F/L, >10um	02/12/98	EM

Dayton, Ohio 45426



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Page 11

Sample Description: OUTFALL 001 Test Description: EPA 624 Collected: 02/01/99

02/01/99 Lab No: 04A Method: 624 Category: AQUEOUS

Test Code: 624_X

PARAMETER	RESULT	LIMIT
ACROLEIN	BDL	20
ACRYLONITRILE	BDL	20
2-CHLOROETHYLVINYL ETHER	BDL	20
BENZENE	BDL	2
CARBON TETRACHLORIDE	BDL	2
CHLOROBENZENE	BDL	2
1,2-DICHLOROETHANE	BDL	2
1,1,1-TRICHLOROETHANE	BDL	2
1,1-DICHLOROETHANE	BDL	2
1,1,2-TRICHLOROETHANE	BDL	2
1,1,2,2-TETRACHLOROETHANE	BDL	2
CHLOROETHANE	BDL	10
CHLOROFORM	BDL	2
1,1-DICHLOROETHYLENE	BDL	2
1,2-TRANS-DICHLOROETHYLENE	BDL	2
1,2-DICHLOROPROPANE	BDL	2
CIS-1, 3-DICHLOROPROPYLENE	BDL	2
TRANS-1, 3-DICHLOROPROPYLENE	BDL	2
ETHYLBENZENE	BDL	2
1,2-DICHLOROBENZENE	BDL	2
1,3-DICHLOROBENZENE	BDL	2
1,4-DICHLOROBENZENE	BDL	2
METHYLENE CHLORIDE	BDL	10
CHLOROMETHANE	BDL	10
BROMOMETHANE	BDL	2
BROMOFORM	BDL	2
DICHLOROBROMOMETHANE	BDL	2
TRICHLOROFLUOROMETHANE	BDL	2
CHLORODIBROMOMETHANE	BDL	2
TETRACHLOROETHYLENE	BDL	2
TOLUENE	BDL	2
TRICHLOROETHENE	BDL	2
VINYL CHLORIDE	BDL	10

SURROGATE	%RECOVERY	LIMITS	
D4-1.2 DICHLOROETHANE	112	76 -	<u> 114</u>
D8-TOLUENE	94	88	110

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Dayton, Ohio 45426

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BDL



TEST RESULTS BY SAMPLE

Page 12

Sample Description: OUTFALL 001 Test Description: EPA 624 Collected: 02/01/99

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02/01/99 Lab No: 04A Method: 624 Category: AQUEOUS

Test Code: 624_X

4-BROMOFLUOROBENZENE <u>96</u> <u>86</u> - <u>115</u>

Notes and Definitions for this Report:

DATE RUN 02/09/99 ANALYST JMM INSTRUMENT <u>GC/MS</u> FILE ID <u>9020934</u> UNITS <u>ug/L</u> METHOD <u>EPA 624</u> BDL <u>BELOW DETECTION LIMIT</u>



03/16/99 09:22

Order # 99-02-060

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PARAMETER

TEST RESULTS BY SAMPLE

Page 13

LIMIT

RESULT

Sample Description: OUTFALL 001 02/01/99 Lab No: 05A Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99 Category: AQUEOUS

Test Code: 625_AE

2,4,6-TRICHLOROPHENOL	BDL	10
4-CHLORO-3-METHYLPHENOL	BDL	10
2-CHLOROPHENOL	BDL	10
2,4-DICHLOROPHENOL	BDL	10
2,4-DIMETHYLPHENOL	BDL	10
2-NITROPHENOL	BDL	10
4-NITROPHENOL	BDL	50
2,4-DINITROPHENOL	BDL	50
2-METHYL-4,6-DINITROPHENOL	BDL _	50
PENTACHLOROPHENOL	BDL	50
PHENOL	BDL	10
ACENAPHTHENE	BDL	10
BENZIDENE	BDL	50
1,2,4-TRICHLOROBENZENE	BDL	10
HEXACHLOROBENZENE	BDL	10
HEXACHLOROETHANE	BDL	10
BIS (2-CHLOROETHYL) ETHER	BDL	10
2-CHLORONAPHTHALENE	BDL	10
1,2-DICHLOROBENZENE	BDL	10
1,3-DICHLOROBENZENE	BDL	10
1,4-DICHLOROBENZENE	BDL	10
3,3-DICHLOROBENZIDINE	BDL	20
2,4-DINITROTOLUENE	BDL	10
2,6-DINITROTOLUENE	BDL	10
FLUORANTHENE	BDL	10
4-CHLOROPHENYL PHENYL ETHER	BDL	10
4-BROMOPHENYL PHENYL ETHER	BDL-	10
BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
BIS (2-CHLOROETHOXY) METHANE	BDL	10
HEXACHLOROBUTADIENE	BDL	10
HEXACHLOROCYCLOPENTADIENE	BDL	10
ISOPHORONE	BDL	10
NAPHTHALENE	BDL	10
NITROBENZENE	BDL	10
N-NITROSODIMETHYLAMINE	BDL	10
N-NITROSODIPHENYLAMINE	BDL	10
N-NITROSODI-N-PROPYLAMINE	BDL	10
BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10

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TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 001 02/01/99 Lab No: 05A Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99 Category: AQUEOUS

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BUTYL BENZYLPHTHALATE BDL 10 DI-N-BUTYL PHTHALATE BDL 10 DI-N-OCTYL PHTHALATE BDL 10 DIETHYL PHTHALATE BDL 10 DIMETHYL PHTHALATE BDL 10 BENZO (A) ANTHRACENE BDL 10 BENZO (A) PYRENE BDL 10 3,4-BENZOFLUORANTHENE BDL 10 BENZO (K) FLUORANTHENE BDL 10 CHRYSENE BDL 10 ACENAPHTHYLENE BDL 10 ANTHRACENE BDL 10 BENZO (GHI) PERYLENE BDL 50 FLUORENE BDL 10 PHENANTHRENE BDL 10 DIBENZO (A, H) ANTHRACENE BDL 50 INDENO(1,2,3-CD) PYRENE BDL 50 PYRENE BDL 10 ETHANOL AMINE BDL 100 HYDRAZINE BDL 200

SURROGATE	%RECOVERY	LIMITS	
NITROBENZENE-d5	85	35 -	114
2-FLUOROBIPHENYL	72	43 -	116
p-TERPHENYL-d14	95	33 -	141
PHENOL-d6	46	10 -	94
2-FLUOROPHENOL	74		100
2,4,6-TRIBROMOPHENOL	50	10 -	123

Notes and Definitions for this Report:

EXTRACTED	<u>02/07/99</u>	
DATE RUN	<u>02/25/99</u>	
ANALYST _	TC	
INSTRUMENT	GC/MS	
FILE ID _	<u></u>	
UNITS uc	<u>1/L</u>	
METHOD _E	<u>IPA 625</u>	
BDL BELC	W DETECTION	LIMIT

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Test Code: 625 AE



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Order # 99-02-060 03/16/99 09:22	TEST RESULTS BY SAMPLE	Page 15
Sample Description: Test Description: Collected:	OUTFALL 00102/01/99Lab No: 05APCB/PESTICIDES EPA 608Method: 60802/01/99Category: AQUEOUS	Test Code:

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608

PARAMETER	RESULT	LIMIT
ALDRIN ALPHA-BHC BETA-BHC DELEA DUC	BDL BDL BDL BDL	$ \underbrace{\begin{array}{c} 0.010 \\ 0.010 \\ 0.010 \\ 0.010 \end{array} $
	BDL	0.010
CUI ODDANE	BDL	0.010
	BDL	0.010
	BDL	0.010
	BDL	0.010
DIELDRIN	BDL	0.010
ALPHA ENDOSULFAN	BDL	0.010
BETA ENDOSULFAN	BDL	0.010
ENDOSULFAN SULFATE	BDL	0.10
ENDRIN	BDL	0.010
ENDRIN ALDEHYDE	BDL	0.020
HEPTACHLOR	BDL	0.030
HEPTACHLOR EPOXIDE	BDL	0.10
PCB-1016	BDL	0.10
PCB-1221	BDL	0.20
PCB-1232	BDL	0.10
PCB-1242	BDL	0.10
PCB-1248	BDL	0.10
PCB-1254	BDL	0.10
PCB-1260	BDL	0.10
TOXAPHENE	BDL	0.20

SURROGATE	%RECOVERY	LIMITS	
DBC (SURROGATE, & RECOVERY)	90	<u> </u>	130
2.4.5.6-TCX (SURROGATE % REC.)	93	<u> </u>	

Notes and Definitions for this Report:

EXTRACTED 02/06/99 DATE RUN 02/09/99 ANALYST _JW INSTRUMENT ____GC FILE ID A020913 UNITS __Uq/L


Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 001 02/01/99 Lab No: 05A Test Description: PCB/PESTICIDES EPA 608 Method: 608 Collected: 02/01/99 Category: AQUEOUS

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Test Code: 608

METHOD EPA 608 BDL BELOW DETECTION LIMIT



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TEST RESULTS BY SAMPLE

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Order # 99-02-060 03/16/99 09:22 ÷

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Sample Description: OUTFALL 00102/01/99Lab No: 15ATest Description: Triaryl Phosphate Sub-OutMethod: Special Test Test Code: 8270_UCollected: 02/01/99Category: AQUEOUS

PARAMETER		RESULT	TINT	T	
TRIPHENYL PHOSPHATE TRICRESYL PHOSPHATE	ESTER ESTER	BDL BDL	5		<u>5</u> 5
SURROGATE	%RECOVI	ERY	LIMIT	S	
NITROBENZENE-D5	6	<u> </u>	35	-	<u> 114</u>
2-FLUOROBIPHENYL	71	<u> </u>	43	-	116
p-TERPHENYL-d14	11;	3	33	-	141
- PHENOL-d6	2!	5	10	-	94
2-FLUOROPHENOL	31	0 _	21	-	100

2,4,6-TRIBROMOPHENOL

Notes and Definitions for this Report:

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EXTRACTED <u>02/08/99</u>	•
DATE RUN <u>02/11/99</u>	
analyst <u>jat</u>	
INSTRUMENT <u>SATURN</u>	
FILE ID020650	<u>1W</u>
UNITS <u>uq/L</u>	
METHOD 8270	
BDL BELOW DETECTI	ON LIMIT

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00G Test Description: EPA 624 Collected: 02/01/99

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02/01/99 Lab No: 19A Method: 624 Category: AQUEOUS

Test Code: 624_X

PARAMETER

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RESULT

LIMIT

ACROLEIN	BDL	20
ACRYLONITRILE	BDL	20
2-CHLOROETHYLVINYL ETHER	BDL	20
BENZENE	BDL	2
CARBON TETRACHLORIDE	BDL	2
CHLOROBENZENE	BDL	2
1,2-DICHLOROETHANE	BDL	2
1,1,1-TRICHLOROETHANE	BDL	2
1,1-DICHLOROETHANE	BDL	2
1,1,2-TRICHLOROETHANE	BDL	2
1,1,2,2-TETRACHLOROETHANE	BDL	2
CHLOROETHANE	BDL	10
CHLOROFORM	BDL	2
1,1-DICHLOROETHYLENE	BDL	2
1,2-TRANS-DICHLOROETHYLENE	BDL	2
1,2-DICHLOROPROPANE	BDL	2
CIS-1,3-DICHLOROPROPYLENE	BDL	2
TRANS-1,3-DICHLOROPROPYLENE ·	BDL	2
ETHYLBENZENE	BDL	2
1,2-DICHLOROBENZENE	BDL	2
1,3-DICHLOROBENZENE	- BDL	2
1,4-DICHLOROBENZENE	BDL	2
METHYLENE CHLORIDE	BDL	10
CHLOROMETHANE	BDL	10
BROMOMETHANE	BDL	2
BROMOFORM	BDL	2
DICHLOROBROMOMETHANE	BDL-	2
TRICHLOROFLUOROMETHANE	BDL	2
CHLORODIBROMOMETHANE	BDL	2
TETRACHLOROETHYLENE	BDL	2
TOLUENE	BDL	2
TRICHLOROETHENE	BDL	2
VINYL CHLORIDE	BDL	10
XYLENES	BDL	10
SURROGATE %RE	COVERY	LIMITS
D4-1,2 DICHLOROETHANE	113	76
D8-TOLUENE	92	88

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Order # 99-02-060 03/16/99 09:22TESI	RESULTS BY SAMPLE	Page 19
Sample Description: OUTFALL 00G Test Description: EPA 624 Collected: 02/01/99	02/01/99 Lab No: Method: Category:	19A 624 Test Code: 624_X AQUEOUS
4-BROMOFLUOROBENZENE	93	<u>86</u> - <u>115</u>

Notes and Definitions for this Report:

DATE RUN <u>02/09/99</u>	
analýst <u>JMM</u>	
INSTRUMENT <u>GC/MS</u>	
FILE ID <u>9020935</u>	
UNITS <u>uq/L</u>	
METHOD EPA 624	
BDL BELOW DETECTION	LIMIT

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

RESULT

LIMIT

Sample Description: OUTFALL 00G 02/01/99 Lab No: 20A Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99 Category: AQUEOUS

2

PARAMETER

Test Code: 625 AE

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2,4,6-TRICHLOROPHENOL	BDL	10
4-CHLORO-3-METHYLPHENOL	BDL	10
2-CHLOROPHENOL	BDL	10
2,4-DICHLOROPHENOL	BDL	10
2,4-DIMETHYLPHENOL	BDL	10
2-NITROPHENOL	BDL	10
4-NITROPHENOL	BDL	50
2,4-DINITROPHENOL	BDL	50
2-METHYL-4,6-DINITROPHENOL	BDL	50
PENTACHLOROPHENOL	BDL	50
PHENOL	BDL	10
ACENAPHTHENE	BDL	10
BENZIDENE	BDL	50
1,2,4-TRICHLOROBENZENE	BDL	10
HEXACHLOROBENZENE	BDL	10
HEXACHLOROETHANE	BDL	10
BIS (2-CHLOROETHYL) ETHER	BDL	10
2-CHLORONAPHTHALENE	BDL	10
1,2-DICHLOROBENZENE	BDL	10
1,3-DICHLOROBENZENE	BDL	10
1,4-DICHLOROBENZENE	BDL	1.0
3, 3-DICHLOROBENZIDINE	BDL	20
2,4-DINITROTOLUENE	BDL	10
2,6-DINITROTOLUENE	BDL	10
FLUORANTHENE	BDL	10
4-CHLOROPHENYL PHENYL ETHER	BDL	10
4-BROMOPHENYL PHENYL ETHER	BDL-	10
BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
BIS (2-CHLOROETHOXY) METHANE	BDL	10
HEXACHLOROBUTADIENE	BDL	10
HEXACHLOROCYCLOPENTADIENE	BDL	10
ISOPHORONE	BDL	10
NAPHTHALENE	BDL	10
NITROBENZENE	BDL	10
N-NITROSODIMETHYLAMINE	BDL	10
N-NITROSODIPHENYLAMINE	BDL	10
N-NITROSODI-N-PROPYLAMINE	BDL	10
BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10

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TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00G Test Description: EPA 625 SEMI VOLATILES Collected: 02/01/99

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02/01/99 Lab No: 20A Method: 625

Test Code: 625_AE

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Category: AQUEOUS זחח BUTYL BENZYLPHTHALATE

	BUTYL BENZYLPHTHALATE	BDL	10
	DI-N-BUTYL PHTHALATE	BDL	10
	DI-N-OCTYL PHTHALATE	BDL	10
	DIETHYL PHTHALATE	BDL	10
	DIMETHYL PHTHALATE	BDL	10
	BENZO (A) ANTHRACENE	BDL	10
	BENZO (A) PYRENE	BDL	10
	3,4-BENZOFLUORANTHENE	BDL	10
,	BENZO (K) FLUORANTHENE	BDL	10
	CHRYSENE	BDL	10
	ACENAPHTHYLENE	BDL	10
	ANTHRACENE	BDL	10
	BENZO (GHI) PERYLENE	BDL	50
	FLUORENE	BDL	10
	PHENANTHRENE	BDL	10
	DIBENZO (A, H) ANTHRACENE	BDL	50
	INDENO(1,2,3-CD) PYRENE	BDL	50
	PYRENE	BDL	10
	ETHANOL AMINE	BDL	100
	HYDRAZINE	BDL	200

SURROGATE	%RECOVERY	LIMITS	
NITROBENZENE-d5	64	<u> </u>	114
2-FLUOROBIPHENYL	65	43 -	<u> 116</u>
p-TERPHENYL-d14	<u> </u>	<u> </u>	141
PHENOL-d6	35	<u> 10</u> -	94
2-FLUOROPHENOL	33	21	100
2,4,6-TRIBROMOPHENOL	65	10 -	123

Notes and Definitions for this Report:

(937) 837-3744



Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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	Sample	Description:	OUTFALL 00G		02/01/99	Lab No:	20A
•	Test	Description:	PCB/PESTICIDES	EPA	608	Method:	608
		Collected:	02/01/99			Category:	AQUEOUS

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Test Code: 608

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E	A	RA	M	E.	L'E	h

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RESULT

LIMIT

ALDRIN	BDL	0.010
ALPHA-BHC	BDL	0.010
BETA-BHC	BDL	0.010
DELTA-BHC	BDL	0.010
GAMMA-BHC	BDL	0.010
CHLORDANE	BDL	0.010
4,4-DDT	BDL	0.010
4,4-DDE	BDL	0.010
4,4-DDD	BDL	0.010
DIELDRIN	BDL	0.010
ALPHA ENDOSULFAN	BDL	0.010
BETA ENDOSULFAN	BDL	0.010
ENDOSULFAN SULFATE	BDL	0.10
ENDRIN	BDL	0.010
ENDRIN ALDEHYDE	BDL	0.020
HEPTACHLOR	BDL	0.030
HEPTACHLOR EPOXIDE	BDL	0.10
PCB-1016	BDL	0.10
PCB-1221	BDL	0.20
PCB-1232	BDL	0.10
PCB-1242	BDL	0.10
PCB-1248	BDL	0.10
PCB-1254	BDL	0.10
PCB-1260	BDL	0.10
TOXAPHENE	BDL	0.20

SURROGAT	e %recover	Y LIMI	TS	
DBC (SURROGATE, % RECOVER	Y) <u>89</u>	70	-	130
2,4,5,6-TCX(SURROGATE % REC	.)94	70	-	130

Notes and Definitions for this Report:

EXTRACTED 02/06/99 DATE RUN 02/09/99 ANALYST JW INSTRUMENT GC FILE ID A020914 UNITS ug/L

(937) 837-3744



Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00G02/01/99Lab No: 20ATest Description: PCB/PESTICIDES EPA 608Method: 608Collected: 02/01/99Category: AQUEOUS

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Test Code: 608

METHOD EPA 608 BDL BELOW DETECTION LIMIT



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

ample Description: OUTFALL 00G 02/01/99 Lab No: 30A Test Description: Triaryl Phosphate Sub-Out Method: Special Test Test Code: 8270_U Sample Description: OUTFALL 00G Collected: 02/01/99 Category: AQUEOUS

PARAMETER			RESULT	LIMIT
TRIPHENYL	PHOSPHATE	ESTER	BDL	<u>5</u>
TRICRESYL	PHOSPHATE	ESTER	BDL	

SURROGATE	%RECOVERY	LIMITS	
NITROBENZENE-D5	60	<u> </u>	114
2-FLUOROBIPHENYL	78	<u> </u>	116
p-TERPHENYL-d14	<u> 115</u>	<u> </u>	141
PHENOL-d6	28	<u> 10</u> -	94
2-FLUOROPHENOL	35	21 -	100
2,4,6-TRIBROMOPHENOL	85	<u> 10</u> -	123

Notes and Definitions for this Report:

EXTRACTED 02/08/99
DATE RUN <u>02/11/99</u>
ANALYST <u>JAT</u>
INSTRUMENT <u>SATURN</u>
FILE ID 0206504W
UNITS <u>uq/L</u>
METHOD 8270
BDL BELOW DETECTION LIMIT

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- 2 Order # 99-02-060 -----03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00C Test Description: EPA 624 Collected: 02/01/99

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02/01/99 Lab No: 34A Method: 624 Category: AQUEOUS

Test Code: 624_X

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PARAMETER	RESULT	LIMIT
ACROLETN	BDL	20
ACRULATIN	BDL	20
2 CULOPORTHYLAINVI, ETHER	BDL	20
DENZENE	BDL	2
CARRON TETRACHLORIDE	BDL	2
CHLOPOBENZENE	BDL	2
1 2-DICHLOROETHANE	BDL	2
1, 1 - TRICHLOROETHANE	BDL	2
1 1-DICHLOROETHANE	BDL	2
1 1 2-TRICHLOROETHANE	BDL	2
1 1 2 2-TETRACHLOROETHANE	BDL	2
CHLOROETHANE	BDL	10
CHLOROFORM	BDL	2
1 1-DICHLOROETHYLENE	BDL	2
1,2-TRANS-DICHLOROETHYLENE	BDL	2
1.2-DICHLOROPROPANE	BDL	2
CIS-1.3-DICHLOROPROPYLENE	BDL	2
TRANS-1.3-DICHLOROPROPYLEN	E BDL	2
ETHYLBENZENE	BDL	2
1.2-DICHLOROBENZENE	BDL	2
1,3-DICHLOROBENZENE	BDL	2
1,4-DICHLOROBENZENE	BDL	2
METHYLENE CHLORIDE	BDL	10
CHLOROMETHANE	BDL	10
BROMOMETHANE	BDL	2
BROMOFORM	BDL	2
DICHLOROBROMOMETHANE	BDL	2
TRICHLOROFLUOROMETHANE	BDL	2
CHLORODIBROMOMETHANE	BDL	2
TETRACHLOROETHYLENE	BDL	2
TOLUENE	BDL	2
TRICHLOROETHENE	BDI	<u> </u>
VINYL CHLORIDE	BD1	<u> </u>
XYLENES	BDI	<u> </u>
SURROGATE	%RECOVERY	LIMITS
D4-1,2 DICHLOROETHANE	114	$-\frac{76}{-114}$
D8-TOLUENE	94	<u> </u>

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00C Test Description: EPA 624 Collected: 02/01/99

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02/01/99 Lab No: 34A Method: 624 Category: AQUEOUS

Test Code: 624_X

4-BROMOFLUOROBENZENE

Notes and Definitions for this Report:

DATE RUN 02/09/99 ANALYST JMM INSTRUMENT <u>GC/MS</u> FILE ID 9020936 UNITS <u>ug/L</u> METHOD <u>EPA 624</u> BDL <u>BELOW DETECTION LIMIT</u>





N. C.

Order	#	99-02-060	
03/16/	'99	09:22	~

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00C 02/01/99 Lab No: 35A Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99 Category: AQUEOUS

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Test Code: 625_AE

Page 27

PARAMETER	RESULT	LIMIT
2,4,6-TRICHLOROPHENOL	BDL	10
4-CHLORO-3-METHYLPHENOL	BDL	10
2-CHLOROPHENOL	BDL	10
2,4-DICHLOROPHENOL	BDL	10
2,4-DIMETHYLPHENOL	BDL	10
2-NITROPHENOL	BDL	10
4-NITROPHENOL	BDL	50
2,4-DINITROPHENOL	BDL	50
2-METHYL-4,6-DINITROPHENOL	BDL	50
PENTACHLOROPHENOL	BDL	50
PHENOL	BDL	10
ACENAPHTHENE	BDL	10
BENZIDENE	BDL	50
1,2,4-TRICHLOROBENZENE	BDL	10
HEXACHLOROBENZENE	BDL	10
HEXACHLOROETHANE	BDL	10
BIS (2-CHLOROETHYL) ETHER	BDL	10
2-CHLORONAPHTHALENE	BDL	10
1,2-DICHLOROBENZENE	BDL	10
1,3-DICHLOROBENZENE	BDL	10
1,4-DICHLOROBENZENE	BDL	10
3,3-DICHLOROBENZIDINE	BDL	20
2,4-DINITROTOLUENE	BDL	10
2,6-DINITROTOLUENE	BDL	10
FLUORANTHENE	BDL	10
4-CHLOROPHENYL PHENYL ETHER	BDL	10
4-BROMOPHENYL PHENYL ETHER	BDL	10
BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
BIS (2-CHLOROETHOXY) METHANE	BDL	10
HEXACHLOROBUTADIENE	- BDL	10
HEXACHLOROCYCLOPENTADIENE	BDL	10
ISOPHORONE	BDL	10
NAPHTHALENE	BDL	10
NITROBENZENE	BDL	10
N-NITROSODIMETHYLAMINE	BDL	10
N-NITROSODIPHENYLAMINE	BDL	10
N-NITROSODI-N-PROPYLAMINE	BDI	<u> </u>
BIS (2-ETHYLHEXYL) PHTHALATE	BDI	10

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Dayton, Ohio 45426



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Order	#	99-02-060
03/16/	' 99	09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00C Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99

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02/01/99 Lab No: 35A Category: AQUEOUS

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Test Code: 625_AE

BUTYL BENZYLPHTHALATE	BDL	10
DI-N-BUTYL PHTHALATE	BDL	10
DI-N-OCTYL PHTHALATE	BDL	10
DIETHYL PHTHALATE	BDL	10
DIMETHYL PHTHALATE	BDL	10
BENZO (A) ANTHRACENE	BDL	10
BENZO (A) PYRENE	BDL	10
3,4-BENZOFLUORANTHENE	BDL	10
BENZO (K) FLUORANTHENE	BDL	10
CHRYSENE	BDL	10
ACENAPHTHYLENE	BDL	10
ANTHRACENE	BDL	10
BENZO (GHI) PERYLENE	BDL	50
FLUORENE	BDL	10
PHENANTHRENE	BDL	10
DIBENZO (A, H) ANTHRACENE	BDL	50
INDENO(1,2,3-CD) PYRENE	BDL	50
PYRENE	BDL	10
ETHANOL AMINE	BDL	100
HYDRAZINE	BDL	200

SURROGATE	%RECOVERY	LIM	ITS	
NITROBENZENE-d5	77	35	-	114
2-FLUOROBIPHENYL	66	43	-	116
p-TERPHENYL-d14	82	· <u>33</u>	-	141
PHENOL-d6	62	10	-	94
2 - FLUOROPHENOL	71	21	-	100
2,4,6-TRIBROMOPHENOL	66	10	-	123

Notes and Definitions for this Report:

EXTRACTED <u>02/07/99</u>
DATE RUN <u>02/25/99</u>
ANALYST <u>TC</u>
INSTRUMENT <u>GC/MS</u>
FILE ID S9022526
UNITS <u>uq/L</u>
METHOD EPA 625
BDL BELOW DETECTION LIMIT





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Order	#	9	9 -	0:	2 -	060
03/16/	'99		09	::	22	

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00C 02/01/99 Lab No: 35A Test Description: PCB/PESTICIDES EPA 608 Method: 608 Collected: 02/01/99 Category: AQUEOUS

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Test Code: 608

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PARAMETER	RESULT	LIMIT
	BDI.	0.010
ALDRIN		0.010
ALPHA-BHC		0.010
BETA-BHC		0.010
DELTA-BHC		0.010
GAMMA-BHC		0.010
CHLORDANE	BDL	0.010
4,4-DDT .		0.010
4,4-DDE		0.010
4,4-DDD	BDL	0.010
DIELDRIN	BDL	0.010
Alpha Endosulfan	BDL	0.010
BETA ENDOSULFAN	BDL	0.010
ENDOSULFAN SULFATE	BDL	0.10
ENDRIN	BDL	0.010
ENDRIN ALDEHYDE	BDL	0.020
HEPTACHLOR	· BDL	0.030
HEPTACHLOR EPOXIDE	BDL	0.10
PCB-1016	BDL	0.10
PCB-1221	BDL	0.20
DCB-1232	BDL	0.10
DCB-1242	BDL	0.10
PCB-1242	BDL	0.10
DCB_1254	BDL	0.10
PCD-1254	BDL	0.10
	BDL	0.20
TOXAPHENE		· · · · · · · · · · · · · · · · · · ·

SURROGATE	%RECOVERY	LIMITS
DBC (SUPROGATE, & RECOVERY)	_93	<u> </u>
2.4.5.6-TCX (SURROGATE % REC.)	92	<u> 70 - 130</u>

Notes and Definitions for this Report:

EXTRACTED 02/06/99 DATE RUN 02/09/99 ANALYST _JW INSTRUMENT _____GC FILE ID A020915 UNITS ____Uq/L

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description:OUTFALL 00C02/01/99Lab No: 35ATest Description:PCB/PESTICIDES EPA 608Method: 608Collected:02/01/99Category: AQUEOUS

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Test Code: 608

METHOD <u>EPA 608</u> BDL <u>BELOW DETECTION LIMIT</u>





Belmonte Park Environmental Laboratories

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TEST RESULTS BY SAMPLE

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Order # 99-02-060 03/16/99 09:22

Sample Description: OUTFALL 00C02/01/99Lab No: 45ATest Description: Triaryl Phosphate Sub-OutMethod: Special Test Test Code: 8270_UCollected: 02/01/99Category: AQUEOUS

PARAMETER		RESULT	LIMIJ	2
TRIPHENYL PHOSPHATE TRICRESYL PHOSPHATE	ESTER ESTER	BDL BDL		<u>5</u>
SURROGATE	*RECOVI	ERY	LIMITS	5
NITROBENZENE-D5	63	3	35 -	- <u>114</u>
2-FLUOROBIPHENYL	7(<u> </u>	<u>43</u> ·	116
p-TERPHENYL-d14	100	<u> </u>	<u>33</u> ·	141
- PHENOL-d6	25	5	<u> 10</u> ·	94
2-FLUOROPHENOL	31	<u> </u>	<u>21</u> ·	
2,4,6-TRIBROMOPHENOL	8:	3 _	<u> 10</u> ·	- 123

Notes and Definitions for this Report:

EXTRACTED 02/08/99 DATE RUN 02/11/99 ANALYST JAT INSTRUMENT <u>SATURN</u> FILE ID 0206503W UNITS ug/L METHOD 8270 BDL BELOW DETECTION LIMIT

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Facility name. Donald C. Cook Nuclear Plant	NPDES Permit number: MI0005827	Outfall Number:
	10110003027	001

Addendum to NPDES Renewal Application Section III.B.10 Toxic Pollutant Reasonable Potential Effluent Data

Sampling results indicate the presence of toxic pollutants in the Cook Nuclear Plant discharges as follows:

<u>Strontium</u> was detected in Outfall 001 (Unit 1 Non-Contact Cooling Water Discharge). There are <u>no plant processes</u> that use strontium. Strontium is a trace element (21st among the elements in the earth's crust) usually associated with calcium and barium minerals in veins in limestone. The chief use of strontium is in fireworks, red signal flares, or on tracer bullets. Therefore, we do not believe that there is reasonable potential for strontium to be present in these discharges as a result of plant operations. We believe that strontium is present in the intake.



Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

	PLEASE TYPE OR PRINT								
FAC Don	ILITY NAME ald C. Cook Nuclear Plant	NPDES PERMIT NUMBER MI0005827	OUTFALL NUMBER 001						
9.	WATER TREATMENT ADDITIVES Water treatment additives include any material that is additive treat the water.	led to water used at the facility or to a wastewater gen	erated by the facility to condition or						
	Approvals of water treatment additives are authorized by the DEQ under separate correspondence The issuance of an NPDES permit doe constitute approval of the water treatment additives that are included in this application								
	A. Are there water treatment additives in the discharge from this facility?								
	No. proceed to item 4.								
	X Yes.								
	B. Have these water treatment additives been previously	approved?							
	No, continue with C. below.								
	Yes. Submit a list of the previously approved water tr updated if it has changed since the previous approval	eatment additives and the date they were approved. The	he information listed in C. 1-8 must be						
	C. Submit a list of water treatment additives that are or m additive.	ay be discharged from the facility. Applicants must sub	mit the information listed below for each						
	1. The water treatment additive Material Safety Data Sl	neet	1						
	2 The proposed water treatment additive discharge co	ncentration.	-						
l	3 The discharge frequency (i.e., number of hours per c	lay, week, etc)							
i	4 The outfall the water treatment additive is to be discr	harged from							
	5. The type of removal treatment, if any, that the water	treatment additive receives prior to discharge.							
	6 The water treatment additive function (i.e., microbioc	ide, flocculant, etc)							
	7. A 48-hour LC50 or EC50 for a North American fresh	water planktonic crustacean (either Ceriodaphnia sp., D	aphnia sp., or Simocephalus sp)						
	8 The results of a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minin requirement of Rule 323.1057(2)(a) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour Lo a rainbow trout, bluegill, or fathead minnow.								
	The required toxicity information (described in items 7 and on the DEQ's Internet page http://www.deq.state.mi.u additives on this list, only the information in items 1 throug	d 8 above) is currently available in the SWQD files for is/swq/gleas/docs/wta/WTAlist.doc. If you intend to the above needs to be submitted to the SWQD.	the water treatment additives listed to use one of the water treatment						
	Note: The availability of toxicity information for a water tre	eatment additive does not constitute approval to dischar	ge the water treatment additive						
10.	WHOLE EFFLUENT TOXICITY TESTS								
	Have any acute or chronic WET tests been conducted on If yes, identify the tests and summarize the results below	any discharges or receiving water in relation to facility of unless the test has been submitted to the department in	discharges within the last three years?						
NO			,						
			•						

Michigan Department of Environmental Quality-Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater B. Outfall Information

PLEASE TYPE OR PRINT

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Donald C. Cook Nuclear Plant NFDES 01 COC PERMIT NOMBER MI0005827 Outfail Number 001 9. WATER TREATMENT ADDITIVES Approval Date Sodium Hypochlorite Sodium Hypochlorite 5/23/00 NPDES Permit approval 9/28/95 Betz CT-1300 Formerly called Betz CT-2 5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95 Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
9. WATER TREATMENT ADDITIVES Water Treatment Additive Approval Date Sodium Hypochlonite 5/23/00 NPDES Permit approval 9/28/95 Betz CT-1300 Formerly called Betz CT-2 5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95 Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Water Treatment Additive Approval Date Sodium Hypochlonte 5/23/00 NPDES Permit approval 9/28/95 Betz CT-1300 Formerly called Betz CT-2 5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95 Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Water Treatment AdditiveApproval DateSodium Hypochlonte5/23/00 NPDES Permit approval 9/28/95Betz CT-1300 Formerly called Betz CT-25/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95Betz CT-45/23/00, NPDES Permit approval 9/28/95Calgon H-130M8/16/95, 5/23/00Calgon EVAC8/8/00	
Sodium Hypochlonite 5/23/00 NPDES Permit approval 9/28/95 Betz CT-1300 Formerly called Betz CT-2 5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95 Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Sodium Hypochlonte 5/23/00 NPDES Permit approval 9/28/95 Betz CT-1300 Formerly called Betz CT-2 5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95 Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Betz CT-1300 Formerly called Betz CT-2 5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95 Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Betz CT-4 5/23/00, NPDES Permit approval 9/28/95 Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Calgon H-130M 8/16/95, 5/23/00 Calgon EVAC 8/8/00	
Calgon EVAC 8/8/00	
Nalco Macrotrol 9380 8/16/95, 5/23/00, 2/28/02	
Nalco Macrotrol 9210 8/16/95, 5/23/00, 2/28/02	
Nalco TRASAR 23299 5/23/00, 9/17/96	
Fluorescein Dye 9/21/98	
Bentonite Clay 5/23/2000, NPDES Permit approval 9/28/95	
Betz Ferroquest FQ LP 7200 (Formerly Call Betz Depositrol 855D) 11/14/94, 5/23/00, 9/17/96, NPDES Permit approval 9/28/95	76
Sodium Tetraborate (Borax) 5/23/00	
SF6 (Sulphur hexafluonde gas) NPDES Permit approval 9/28/95	
Betz Corrshield NT 4205 (Formerly Powerline 3231) 6/23/99, 9/17/96	-
Calgon LCS-60 6/23/99, NPDES Permit approval 9/28/95	<u> </u>
Betz Corrshield NT4201 5/17/02	
Betz Corrshield NT 2403 9/18/02	
Spectrus NX 1105 (Formerly Betz Biotrol 107) 6/23/99, 5/23/00	
Calgon H-300 6/23/99, 5/23/00	
Betz AZ 8103 (Formerly Betz Copper-Trol Cu1 12/18/95, 6/23/99, 5/23/00	
Betz 3610 6/23/99	
Betz MD-4103 3/26/02	
Nalco 22199 9/17/96	

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Section III.B Outfall 002

REA	, Michigan Department of Environmental Quality- Surface Water Quality Division
NG	WASTEWATER DISCHARGE PERMIT APPLICATION

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SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

omplete a separate Section III.B Outfall Information (pages 26-31) for each outfall at the facility. Make copies of this blank section of the application for additional outfalls as necessary.									
PLE	ASE	TYPE OR PRINT							
FAC	CILITY	NAME Donald C. Cook Nuc	lear Plant			DES PERMIT	NUMBER	001	FALL NUMBER
1.	OUTFALL INFORMATION (see page 25 for instruction on completion of this					page)			
	A.	A. Uwatershed Lower St Joseph							
	В.	B. Receiving Water Lake Michigan							
	C County Township								
	D.	1/4, 1/4 SW	1/4 NW	S 0	ection 6		Town Ran 06S 199		
-	E.	Latitude 41 58' 30"		I	-	Longitude 86 34' 30"	· · · · · · · · · · · · · · · · · · ·	`	
	-		d (Chook all that an	nlu to thic	outfall)				
	г.	Contact Cooling	Sanıtary W	/astewate	er outiany	Ground	lwater Cleanup	Storm V	Water (regulated)
		Noncontact Cooling	🛛 Process W	astewater	r	Hydros	tatic Pressure Test	Storm V	Water (not regulated)
		X Storm water subject to effl	uent auidelines (india	ate under	r which cat	egory) 423-	Steam Electric		
		Other - specify (see "Table	e 8 - Other Common 7	Types of V	Nastewate	r" in appendix)			
]	J.	What is the maximum Facility	Design Flow Rate:	2 <u>074</u> M	GD				
	G.	G. What is the maximum discharge flow authorized for this outfall: Seasonal Dischargers MGY Contin							
	Continuous Dischargers <u>1820</u> MGD Continue v					onal Discharge	ers	MGY Conti	nue with Item H.
H. Seasonal Discharge					all: Seas Conti	onal Discharge nuous Dischar	ers gers <u>1820</u>	MGY Contr [,] MGD Contr	inue with Item H.
	Н.	Seasonal Discharge	je now authorized to	r this outfa	all: Seas Conti	onal Discharge nuous Dischar	ors gers <u>1820</u>	MGY Contr MGD Cont	nue with Item H.
	н.	Seasonal Discharge List the discharge periods (by	month) and the volum	r this outfa ne dischai	all: Seas Conti rged in the	onal Discharge nuous Dischar space provide	ers gers <u>1820</u> d below.	MGY Contr MGD Cont	nue with Item H.
	н.	Seasonal Discharge List the discharge periods (by From	month) and the volum	r this outfa	all: Seas Contr rged in the	onal Discharge nuous Dischar space provide	ors gers <u>1820</u> d below. Discharge Volume	MGY Contr MGD Contr	nue with Item H.
	H.	Seasonal Discharge List the discharge periods (by From From	month) and the volum Throu Throu	r this outfa ne dischai gh gh	all: Seas Conti rged in the	onal Discharge nuous Dischar space provide	ers <u>1820</u> d below. Discharge Volume Discharge Volume	MGY Contr •MGD Contr	nue with Item H.
	H.	Seasonal Discharge List the discharge periods (by From From From	month) and the volum Throu Throu Throu	r this outfa ne dischai gh gh gh	all: Seas Conti	onal Discharge nuous Dischar space provide	ers gers <u>1820</u> d below. Discharge Volume Discharge Volume Discharge Volume	MGY Contr MGD Cont	Annual Total
	н.	Seasonal Discharge List the discharge periods (by From From From From	month) and the volum Throu Throu Throu Throu Throu	r this outfa ne dischai gh gh gh	all: Seas Conti	onal Discharge nuous Dischar space provide	ers gers <u>1820</u> d below. Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Contr •MGD Cont	Annual Total
	H.	Seasonal Discharge List the discharge periods (by From From From From Continuous Discharge How often is there a discharge Batch dischargers must pro Is there effluent flow equalizat Batch Peak Flow Rate:	month) and the volum Throu Throu Throu Throu Throu Throu Throu throu Throu Throu Throu Throu Throu Throu Throu Throu Throu	r this outfaine dischainingh	all: Seas Contu rged in the ge)? informatio No Number of	onal Discharge nuous Dischar space provide 24 Hours/Da on: f batches disch	ers gers <u>1820</u> d below. Discharge Volume Discharge Volume Discharge Volume Discharge Volume <u>365</u> Days/Ye	MGY Contr •MGD Contr ar	Annual Total
	Η.	Seasonal Discharge List the discharge periods (by From From From From Continuous Discharge How often is there a discharge Batch dischargers must pro Is there effluent flow equalizat Batch Peak Flow Rate:	month) and the volum Throu Throu Throu Throu Throu Throu Throu Throu Throu Throu Throu Throu Throu Throu	r this outfa ne dischar gh gh gh the averar dditional	all: Seas Conti rged in the ge)? informatio No Number of	onal Discharge nuous Dischar space provide 24 Hours/Da on: f batches disch	ers gers <u>1820</u> d below. Discharge Volume Discharge Volume Discharge Volume Discharge Volume y <u>365</u> Days/Ye	MGY Contr •MGD Contr	Annual Total
	H.	Seasonal Discharge List the discharge periods (by From From From From Continuous Discharge How often is there a discharge Batch dischargers must pro Is there effluent flow equalizat Batch Peak Flow Rate:	month) and the volum Throu Throu Throu Throu Throu Throu the following a uon? Yes	r this outfa ne dischai gh gh gh the averai dditional	all: Seas Contu rged in the ge)? informatio No Number of	onal Discharge nuous Dischar space provide 24 Hours/Da on: f batches disch	ers gers <u>1820</u> d below. Discharge Volume Discharge Volume Discharge Volume Discharge Volume y <u>365</u> Days/Ye harged per day	MGY Contr MGD Contr ar	Annual Total

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

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SECTION III - Industrial and Commercial Wastewater

27.

B. Outfall Information

	ASE TYPE OR PRINT	*						
•		NPDES PERMIT NUMBER	OUTFALL NUMBER					
	Donald C. Cook Nuclear Plant	MI0005827	002					
2.	PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE This information is used to determine the applicable federal regulations the type of facility. Page 7 of the appendix contains an abbreviated li application For assistance call the Permits Section. All industries sha process. If the wastestream is not regulated under federal categorical potential to be present in the discharge. To submit additional information	for this discharge. The information require st of various industries and the types of info all provide the name of each process and th standards, the applicant shall report all pollu on see page ii, item 8.	d to be reported is dependent on ormation each shall report in this e SIC or the NAICS code for the itants which have the reasonable					
	PROCESS INFORMATION A Name of the process contributing to the discharge: 00A							
	B. SIC or NAICS code: 4911							
	C Describe the process and provide measures of production (see the Generator Blowdown, 1 MGD maximum flow 2247 MWE total plant	instructions to determine the appropriate infit electrical generation	ormation to be reported). Steam					
	PROCESS INFORMATION A. Name of the process contributing to the discharge: 00B							
	B. SIC or NAICS code: 4911							
	C. Describe the process and provide measures of production (see the Generator Blowdown. 1 MGD maximum flow 2247 MWE total plant	instructions to determine the appropriate info electrical generation.	ormation to be reported): Steam					
	PROCESS INFORMATION A. Name of the process contributing to the discharge: <u>00C</u>							
	 B SIC or NAICS code: <u>4911</u> C. Describe the process and provide measures of production (see the heating boiler blowdown 0.043 MGD maximum flow. 2247 MWE to blow the second s	instructions to determine the appropriate info otal plant electrical generation	ormation to be reported) Plant					
	PROCESS INFORMATION A. Name of the process contributing to the discharge: 00G							
	B. SIC or NAICS code: 4911							
	C. Describe the process and provide measures of production (see the osmosis reject stream 0 366 MGD maximum flow. 2247 MWE total	instructions to determine the appropriate info plant electrical generation	ormation to be reported): Reverse					
	PROCESS INFORMATION A. Name of the process contributing to the discharge. <u>00H</u>							
	B. SIC or NAICS code: 4911							
	C Describe the process and provide measures of production (see the Miscellaneous equipment drains and processes Maximum flow is 5 emergency purposes only.	Instructions to determine the appropriate info 5 2 MGD. 2247 MWE total plant electrical ge	ormation to be reported). eneration. This Outfall is used for					

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B Outfall Information

"LEAS	E TYPE OR PRINT					
ACILI	TY NAME	NPDES PERMIT NUMBER				
<u> </u>	Donald C Cook Nuclear Plant	MI0005827	002			
2. Pf Th th ap pr pc	ROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE his information is used to determine the applicable federal regulations for e type of facility. Page 7 of the appendix contains an abbreviated list opplication For assistance call the Permits Section All industries shall process. If the wastestream is not regulated under federal categorical st opential to be present in the discharge. To submit additional information	for this discharge The information required to be n t of various industries and the types of information I provide the name of each process and the SIC or tandards, the applicant shall report all pollutants when see page ii, item 8	eported is dependent on each shall report in this the NAICS code for the lich have the reasonable			
Pi A.	ROCESS INFORMATION . Name of the process contributing to the discharge <u>Unit One Cooling</u>	g Water				
В.	SIC or NAICS code. 4911					
С	Describe the process and provide measures of production (see the in through non-contact cooling, maximum flow is 1500 MGD, 2247 MW	nstructions to determine the appropriate information E total plant electrical.	to be reported) Once-			
PI A	ROCESS INFORMATION Name of the process contributing to the discharge. Unit Two Cooling	g Water	<u></u>			
В	SIC or NAICS code. 4911					
С	Describe the process and provide measures of production (see the in through non-contact cooling, maximum flow is 1820 MGD, 2247 MW	nstructions to determine the appropriate information E total plant electrical.	to be reported) Once			
Pl A	ROCESS INFORMATION . Name of the process contributing to the discharge <u>Misc minor storm</u>	water drains				
B.	. SIC or NAICS code <u>4911</u>					
С	C Describe the process and provide measures of production (see the instructions to determine the appropriate information to be reported): Roof drains from the screenhouse roof, small roadway gratings above the forebay road.					
Pi A	ROCESS INFORMATION . Name of the process contributing to the discharge					
B	SIC or NAICS code					
С	Describe the process and provide measures of production (see the in	nstructions to determine the appropriate information	n to be reported)			
Pi A	ROCESS INFORMATION Name of the process contributing to the discharge:					
В	SIC or NAICS code					
с	. Describe the process and provide measures of production (see the in	nstructions to determine the appropriate information	n to be reported)			

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

ISTRUCTIONS FOR COMPLETING SECTION III, ITEM B.3.

In accordance with 40 CFR 122.21, all applicants must report CBOD₅, Chemical Oxygen Demand, Total Organic Carbon, Total Suspended Solids, Ammonia as N, Temperature (both summer and winter), and pH. The applicant may, however, request that reporting of data for one or more of these required parameters be waived. Such request must be supported by adequate rationale. The request shall be included as an attachment to this application.

Report available discharge data for the parameters listed. Actual data shall be provided for existing discharges and expected or estimated data provided for proposed discharges. Please include an explanation if "Pollution Prevention" is expected to provide reduction of pollutants. See Page 8 of the appendix for a list of specific parameters for which data must be provided for specific types of discharges (e.g., noncontact cooling waters, gasoline groundwater cleanups, etc.). For assistance in determining the appropriate parameters to report, call the Permits Section.

If data are available for other parameters not listed in Section III.B 3., the applicant shall report these data in the blank spaces provided or attach the information to this application on 81/2" x 11" paper.

Report all data in the units provided and for the sample types specified in the table. If more than one option is available, check the appropriate box. The units are as follows: $\mu g/I = micrograms$ per liter, mg/I = milligrams per liter, $^{\circ}F = degrees$ Fahrenheit, $^{\circ}C = degrees$ Celsius. See page ii number 5 for analytical requirements.

To analyze for pH, temperature, total residual chlorine, oil and grease, and fecal coliform use **Grab Samples** unless other frequency-sample type analyses are available. To analyze for total BOD₅, total phosphorus, COD, TOC, ammonia nitrogen and total suspended solids use **24-hour composite samples** unless other frequency-sample type analyses are available.

For two or more substantially identical outfalls, permission may be requested from the appropriate district office to sample and analyze oni, one outfall and submit the results of the analysis for other substantially identical outfalls. If the request is granted by the district office, on a separate sheet attached to the application form, identify which outfall was sampled and describe why the outfalls which were not sampled are substantially identical to the outfall which was sampled. See pages ii and iii for sampling definitions, including "maximum daily concentration", and "maximum monthly concentration".

REPORTING OF INTAKE DATA

Applicants are required to report intake water data when they are attempting to demonstrate eligibility for "net" effluent limitations for one or more pollutants. A "net" effluent limitation is determined by subtracting the average level of the pollutant(s) present in the intake waters remaining after treatment which is not removed by the treatment system. NPDES regulations allow net limitations only in certain circumstances (see 40 CFR Part 122 45(g)). To demonstrate eligibility, report the average concentration and/or mass of the results of the analyses on the intake water. If the intake water is treated prior to use, report the intake concentrations and/or mass after treatment. In addition to the analytical results, the following information shall be submitted for each parameter:

- a) A statement that the intake water is drawn from the body of water into which the discharge is made. If the discharge is not to the same body of water from which the water is withdrawn, the facility is not eligible for net limitations.
- b) A statement of the extent to which the level of the pollutant in the intake water is reduced by treatment of the wastewater. Limitations for the net removal of pollutants are adjusted only to the extent that the pollutant is not removed.
- c) When applicable (for example, when the pollutant represents a class of compounds, e g., BOD₅, TSS, etc.), a demonstration of the extent to which the pollutants in the intake vary physically, chemically and biologically from the pollutants contained in the discharge. Limitations are adjusted only to the extent that the concentrations of the intake pollutants vary from the discharged pollutants.

Note: Applicants for groundwater remediation discharges should also report the intake characteristics of contaminated groundwater.

NPDES Permit MI0005827

REPLY TO

PLAINWELL DISTRICT OFFICE 1342 SR 89 W STE B PLAINWELL MI 49080-1915

STATE OF MICHIGAN



JOHN ENGLER, Governor DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment" HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET. www.deq.state.mi.us RUSSELL J. HARDING, Director

January 28, 1999

Mr. John P. Carlson Environmental Compliance Manager Cook Nuclear Plant One Cook Place Bridgman, Michigan 49106

Dear Mr. Carlson:

SUBJECT: Application for Renewal of NPDES Permit No. MI0005827

We have reviewed the information provided in your letter of January 25, 1999. In that letter you request that representative outfalls be used to characterize effluent characteristics for similar outfalls. We approve your request as follows:

1. Effluent from Outfall 001 will be considered representative of outfalls 001, 002, and 003.

2. Effluent from Outfall 00B will be considered representative of outfalls 00A and 00B.

Please feel free to contact me if you have any questions.

Sincerely, Gregory A. Danneffel

Plainwell District Office Surface Water Quality Division 616-692-6968

cc: Mr. Blair Zordell, Cook Nuclear Plant Mr. Dan Dell, Permits Section, SWQD Ms. Sylvia Heaton, GLEAS, SWQD American Electric Power Cook Nuclear Plant One Cook Place Bridgman, MI 49106 616 465 5901

> AMERICAN ELECTRIC POWER

Mr. Fred Morley Surface Water Quality Division Michigan Department of Environmental Quality 1342 SR89 West Suite B Plainwell, MI 49080

January 25, 1999

Dear Mr. Morley:

Subject: NPDES Permit No. MI0005827 Application

We are currently preparing the Wastewater Discharge Permit Application to renew our current NPDES operating permit. As noted in Section III - Industrial and Commercial Wastewater, Part B. Outfall Information Item 6, paragraph 5 contains instructions to request permission to use a single sample for similar outfalls for application purposes.

We request that Outfall 001 be used as a representative sample for Outfalls 002 (Unit Two Noncontact Cooling Water) and Outfall 003 (De-icing Mode) for application use only. Outfalls 002 and 003 are substantially identical to Outfall 001. The source of these Outfalls is Lake Michigan; similar waste streams enter each Outfall prior to discharge.

In addition, we are requesting Outfall 00B (Unit Two Steam Generator Blowdown) to be used as a representative sample for Outfall 00A (Unit One Steam Generator Blowdown). Outfall 00A and Outfall 00B are substantially identical discharges, with the exception that Outfall 00A originates from the Unit One Steam Generators, and Outfall 00B originates from the Unit Two Steam Generators.

If you have any questions, please contact me at (616) 465-5901, ext. 1153.

Sincerely,

John P. Carlson Environmental Compliance Manager

/tlm

c: Greg Danneffel - MDEQ Plainwell
Sylvia Heaton - MDEQ Lansing

Page Two Mr. Morley January 25, 1999

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this and all attached documents, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

D. E. Cooper Plant Manager

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

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B. Outfall Information

	NODEC DEDNIT N							
	MI0005827	NPDES PERMIT NUMBER OUTF/						
	- Instructions for co	moleting this page a						
is an attachment	To submit additional	information see page	re on the facing pag ge II, item 8.	je.				
Maximum Daily Concentration	Maximum Monthly Concentration	Units	Number of Analyses	Sample Type				
3	3	mg/l	*2	☐ Grab ⊠ 24 Hr Comp				
6	6	mg/l	*2	Grab				
4 5	4.5	mg/l	*2	☐ Grab ⊠ 24 Hr Comp				
<0 5	<0 5	mg/l	*2	Grab				
8	8	mg/l	*2	☐ Grab ⊠ 24 Hr Comp				
NA	NA	mg/l	NA	Grab 24 Hr Comp				
0 37	0 37	mg/l	* 1	☐ Grab ⊠ 24 Hr Comp				
maximum-7day NA	NA	counts/100ml	NA	Grab				
200	169	☐ mg/l ⊠µg/l	212	Grab				
minimum daily NA	Do Not Use	mg/l	NA	Grab 24 Hr Comp				
minimum 7 9	maximum 8 5	standard units	96	Grab				
96 0	88 3	⊠ °F □ °C	176	Grab				
65 3	58 9	⊠ °F 🔲 °C	170	Grab				
<5	<5	mg/l	* 2	Grab				
				Grab 24 Hr Comp				
				Grab 24 Hr Comp				
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	AL POLLUTANTS s an attachment Maximum Daily Concentration 3 6 4 5 <0 5 8 NA 0 37 maximum-7day NA 200 minimum daily NA 200 minimum daily NA 7 9 96 0 65 3 <5 <5	AL POLLUTANTS - Instructions for cor s an attachment To submit additional Maximum Maximum Daily Concentration 3 3 6 6 4 5 4.5 <0 5 <0 5 8 8 NA NA 0 37 0 37 maximum-7day NA NA 200 169 minimum daily NA Do Not Use NA S5 96 0 88 3 65 3 58 9 <5 <5	AL POLLUTANTS - Instructions for completing this page a s an attachment To submit additional information see page Maximum Maximum Daily Maximum 0aily Maximum 3 3 6 6 4 5 4.5 4 5 4.5 0 5 <0.5	AL POLLUTANTS - Instructions for completing this page are on the facing page s an attachment To submit additional information see page ii, item 8. Maximum Maximum Maximum Number of Analyses 3 3 mg/l •2 6 6 mg/l •2 45 4.5 mg/l •2 45 4.5 mg/l •2 8 8 mg/l •2 8 8 mg/l •2 NA NA mg/l •2 8 8 mg/l •2 9 0.5 <0.5				

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

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		SECTION III -	- Industrial a	nd Commercial Wastewa	ter
			B. Outfal	Information	" * a
<u>ש</u> ורי א(EASE TYPE O	R PRINT		NPDES PERMIT NUMBER MI0005827	OUTFALL NUMBER
4.	PRIMARY IN	DUSTRY PRIORITY POLLUTANT INFO	RMATION		
	Existing prim identified in identified in 2 known or b	nary industries that discharge process wa Table 2 (as determined from Table 1, <u>Te</u> Table 3 Existing primary industries mus believed to be present in facility effluent.	stewater must sub sting Requiremen t also provide the	mit the results of at least one effluent a ts for Organic Toxic Pollutants by Indu results of at least one effluent analysis	analysis for <u>selected</u> organic pollutants <u>istrial Category</u>), and all the pollutants s for any other chemical listed in Table
	In addition, s	submit the results of all other effluent anal	yses performed w	thin the last 5 years for any chemical l	isted in Tables 2 and 3.
	New primary Tables 2 and	v industries that propose to discharge pri d 3 expected to be present in facility efflue	ocess wastewater ent	must provide an estimated effluent c	oncentration for any chemical listed in
5		FURAN CONGENER INFORMATION		÷	
	Existing indu TP); 2-(2,4,4 trichloropher facility efflue dioxin and fu	ustnes that use or manufacture 2,3,5-tric 5-trichlorophenoxy) ethyl 2,2-dichloropre nol (TCP) or hexachlorophrene (HCP), or int, must submit the results of at least one aran congeners must be conducted using	hlorophenoxy ace opionate (Erbon); knows or has rea e effluent analysis EPA Method 1613	tic acid (2,4,5-T), 2- (2,3,5-trichloroph 0,0-dimethyl 0-(2,4,5-trichlorophenyl son to believe that 2,3,7,8-Tetrachloro for the dioxin and furan congeners list	enoxy) propanoic acid, (Silvex, 2,3,5-) phosphorothionate (Ronnel), 2,4,5- idibenzo-p-dioxin (TCDD) is present in ed in Table 6 All effluent analyses for
	In addition,	submit the results of all other effluent ana	lyses performed w	vithin the last 5 years for any dioxin and	d furan congener listed in Table 6.
	New industri 2,3,5-TP), 2- trichloropher facility efflue	tes that expect to use or manufacture 2 -(2,4,5-trichlorophenoxy) ethyl 2,2-dichlor nol (TCP) or hexachlorophrene (HCP), or nt must provide estimated effluent concer	3,5-trichloropheno opropionate (Erbo knows or has rea ntrations for the di	bxy acetic acid (2,4,5-T), 2- (2,3,5-tric on), 0,0-dimethyl 0-(2,4,5-trichlorophen ison to believe that 2,3,7,8-Tetrachloro oxin and furan congeners listed in Tab	hlorophenoxy) propanoic acid (Silvex, yl) phosphorothionate (Ronnel), 2,4,5- ydibenzo-p-dioxin (TCDD) is present in le 6
6	OTHER IND	USTRY PRIORITY POLLUTANT INFOR	MATION		7
	Existing second analysis for a	ondary industries, or existing primary ind any chemical listed in Tables 2 and 3 kno	ustries that discha wn or believed to l	rge non-process wastewater, must su be present in facility effluent	bmit the results of at least one effluent
	In addition, s	submit the results of all other effluent anal	yses performed w	thin the last 5 years for any chemical i	isted in Tables 2 and 3
	New second concentratio	dary industries, or new primary industri n for any chemical listed in Tables 2 and	es that propose t 3 expected to be p	o discharge non-process wastewater present in facility effluent.	, must provide an estimated effluent
7.	ADDITIONA	L TOXIC AND OTHER POLLUTANT INF	ORMATION		
	All existing i believed to b be present i Tables 4 and	ndustries, regardless of discharge type, be present in facility effluent, and a measi n facility effluent In addition, submit the d 5	must provide the ured or estimated e results of any e	results of at least one analyses for ar effluent concentration for any chemica ffluent analysis performed within the	iy chemical listed in Table 4 known or I listed in Table 5 known or believed to last 5 years for any chemical listed in
	New industri be in facility	es, regardless of discharge type, must pr effluent.	ovide an estimate	d effluent concentration for any chemic	al listed in Tables 4 and 5 expected to
8	INJURIOUS	CHEMICALS NOT PREVIOUSLY REPO	RTED		
	New or exis injunous che effluent data	ting industries, regardless of discharge t emicals known or believed to be preser that are less than 5 years old for these c	type, must provide nt in facility efflue hemicals must be	e a measured or estimated effluent or nt that have not been previously ide reported	uncentration for any toxic or otherwise ntified in this application Quantitative
	NOTE: All ef see page ii, completed fo See page ii,	filuent data submitted in response to que item 8. If the effluent concentrations or each data row Parameter, CAS No number 5 for analytical test requirements	stions 4, 5, 6, 7, a are estimated, pla Concentration(s),	nd 8 above should be recorded on pag ace an E in the "Analytical Method" Sample Type, Analytical Method, Qu	e 31 To submit additional information column. The following fields must be antification Level and Detection Level



Michigan Department of Enuminental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

iON III - Industrial and Commercial Waste

B. Outfall Information

PLEASE TYPE OR F	PRINT													,	
FACILITY NAME					N	PDES PERMI	TNUMBER	1		OUTFALL N	UMBER			4	
Donald C. Cook Nuc	lear Plant		1		M	10005827				002				.,	-
SAMPL	E DATE ->	1/8/01	7/17/01	8/7/01	8/14/01	9/4/01	9/18/01	10/9/01	10/23/01	11/6/01	1/22/02				
PARAMETER	No.	Conc. (ug/l)	Conc. (ug/l)	Conc. (''''''''''''''''''''''''''''''''''''	Conc. (ug/l)	Conc.	Conc. (ug/l)	Conc. (ug/l)	Conc. (ug/l)	Conc.	Conc. (ug/l)	Sample -	Analytic	QL	DL
Hyrazine	7803578	<10	<3	<3	<3	<3	<3	<3	<3	<3	<3	Grab	D1385	3	10
Date		5/11/02	5/18/02	5/22/02	5/13/00	5/16/00	5/19/00	9/14/00	9/17/00	9/18/00	10/2/00				1
Boron	7440428	181	251	249	139	145	331	217	94	258	210	Grab	200.7	13.1	39.3
See Attached														,	-
for additional										· ·			ň		, · ·
data									-						
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'-C (Rev 1/03)

Additional Sample Data Summary Sheet

For Outfall 002

				Sample			Max	# of
Parameter	2/1/99	3/21/02	5/30/02	type	Max Daily	Analytical	monthly	Analyses
Table 2	adalar alindadalar	E. C. S.	Sec. Lunger	is Strangerted.	W-mass"	internal legiting in all	and the states of the	ALL BOM
See Attached data set from B	elmonte Park Laborat	ories.		F.				
Table 3	的复数非常无所以不	A AVAL TEAM	the strain	Al Barren	1 Color and a star	BARE RECTING.	3.2.F13.947	1 M 2 W 3
Antimony (ug/l)	<1**	<1	-	Grab	<1	204 2/200 7	<1	2
Arsenic (ug/l)	<1**	· 2	<1	Grab	2	206 2/200 7	2	3
Beryllium (ug/l)	<1**	<0 2	-	Grab	<1	200 7	<1	2
Cadmium (ug/l)	<0 2**	<0 2	• _	Grab	<0 2	213 2/200 7	<0 2	2
Chromium (ug/l)	<10**	3	<2	Grab	3	200 7	3	3
Copper (ug/l)	· <1**	5	1	Grab	5	220.2/200.7	5	3
Lead (ug/l)	<1**	2	<2	Grab	2	239 2/200 7	2	3
Nickel (ug/i)	<5**,	<3	-	Grab	<5	249 2/200 7	<5	2
Total Phenols (ug/l)	<10**	-	-	Grab	<10	420 1	⁻ <10	1
Selenium (ug/l)	, 	<1		Grab	<1	270 3	<1	1
Silver(ug/l)	<0 5**	<0 2	-	Grab	<0 5	272 2/200 7	<0 5	2
Thallium -(ug/l)	<1**	<1	-	Grab	<1	279 2	<1	2
Zinc (ug/l)	• •	7	<4	Grab	7	200 7	7	2
Cyanide (mg/l)	<0.01** ,	<0 01	•	Grab	<0 01	335 2	<0 01	2
Mercury (ng/l)	· -	7.36	11	Grab	7.36	1631	7 36	2
Table 4	PARTITION CHAN	Anti-Theater and A	i C. S. and art	-to all a state of the sector	Pathata-a in	Ren Barls Light	and Keeler	Little for the second s
Sulfate (mg/l)	· <10**	23	•	Composite	23	375 4	23	2
Additional Data From Belmor	te Park Laboratories	is attached						
See Attached Data set from C	ook Nuclear Plant Lal	boratory				-		
Table 5	STATES AND A STATES OF	Section 2	从这个政策	研究和新教科	e correction	heartes.23	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	4FIGT EONER
See Attached data set from B	elmonte Park Laborat	ories.						
See Attached Data set from C	ook Nuclear Plant Lal	boratory						

**001 used for 002

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Section III.B.6

Non-routine sample data From Table 4

002 TRC USEPA Method 330.5

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Outfall 002 Jan-01	Feb-01 Mai	-01 Apr-0	1 May-01	i Jun-01	l Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01	Jan-02	Feb-02	Mar-02	Apr-02	May-02	.lun-02	.lul-02	Aug-02	Sen-02	0.4-02	- , Nov-02
1				97		53	1		10	9	3				1				36p-02	119	159
2					1	51			1	6	2									143	
3										5	3						<u> </u>		11	141	r.
4 48				81	120					2	1					123			2	184	176
5 52				108						4	1					184			3		158
6 74				94		107				4	1					188		110	<1		165
7 35		_		88		67				3	1								,	144	172
8 46				81	<u> </u>	69				6	1									165	162
9 44										6	1					_				145	,
10 30			<u> </u>	<u> </u>						2	1					-	85		<1	24	
11			34	85	L			152		_2	_ 1						138		4	157	130
12		_	16	80	Ļ			166		1	2							67	29		167
13		_	15	82	200	66				2	3								34		•
14			8			71				2										131] -
15				68	ļ	70		107		2				1						161	
16 6					45	69		160		2		1			173		125	1	13	180	
17		_	84		70					2		71			172		136		24	180	
18				74	41	129				3									17	164	
19		_	131	93	19					_5									15		
20		_	127	109	15	107				_4									22		
21			116	111		97			67	3									158	174	
22			118	36		93				3					134	_			151	170	
23			103		10	103		172		2					139		_116		168	157	
24		3	104		7	140		159		6					145		125			155	
25			103	95	12	144		99									93			170	
20				48		11/				_7									188		
27				52	99	148				8									179		
28			92			143				12						180			165	154	
29		5	88			111				5										158	
30	·	2	96		76					4					158			_4	104	164	
31			101		66			41		4					170					176	
		5	131	111	200	1/18		172	67	12	2	71	0	0	170	400	400	140	400	404	470
Monthly avg 42		3	84	82	60	08		122	26	12	ວ ົ	26	0	0	173	100	130	110	188	184	176
montany avg -rz		Ŭ	۰ ب	02	00			152	20		<u> </u>	30	0		150	109		40	71	153	101
						Num	ber of ar	nalyses	210					Da	ily Max	200	ug/l				
						Number	of <det< td=""><td>values</td><td>2</td><td></td><td></td><td></td><td></td><td>Month</td><td>nly Max</td><td>169</td><td>ug/l</td><td></td><td></td><td></td><td></td></det<>	values	2					Month	nly Max	169	ug/l				
(Total	212												
									/										/		



Belmonte Park Environmental Laboratories

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AMERICAN ELECTRIC POWER (AEP) 1 COOK PLACE BRIDGMAN, MICHIGAN 49106

Attn: BLAIR ZORDELL

Purchase Order: 4307976 Invoice Number: Order #: 99-02-060 Date: 03/16/99 09:22 Work ID: OUTFALL 001 - 00C Date Received: 02/02/99 Date Completed: 03/16/99

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Client Code: AEP_4

ND= NONE DETECTED OHIO CERT.# 12345

SAMPLE IDENTIFICATION

Sample		Sample		Sample		Sample	
Number	De	scription		Number	De	escription	
01	OUTFALL	001	02/01/99	- 24	OUTFALL	00G	02/01/99
02	OUTFALL	001	02/01/99	25	OUTFALL	00G	02/01/99
03	OUTFALL	001	02/01/99	26	OUTFALL	00G	02/01/99
04	OUTFALL	001	02/01/99	27	OUTFALL	00G	02/01/99
05	OUTFALL	001	02/01/99	28	OUTFALL	00G	02/01/99
06	OUTFALL	001	02/01/99	29	OUTFALL	00G	02/01/99
07	OUTFALL	001	02/01/99	30	OUTFALL	00G	02/01/99
08	OUTFALL	001	02/01/99	31	OUTFALL	00C	02/01/99
09	OUTFALL	001 .	02/01/99	32	OUTFALL	00C	02/01/99
10	OUTFALL	001	02/01/99	33	OUTFALL	00C	02/01/99
11	OUTFALL	001	02/01/99	34	OUTFALL	000	02/01/99
12	OUTFALL	001	02/01/99	35	OUTFALL	000	02/01/99
13	OUTFALL	001	02/01/99	36	OUTFALL	000	02/01/99
14	OUTFALL	001	02/01/99	37	OUTFALL	000	02/01/99
15	OUTFALL	001	02/01/99	38	OUTFALL	000	02/01/99
16	OUTFALL	00G	02/01/99	39	OUTFALL	000	02/01/99
17	OUTFALL	00G	02/01/99	40	OUTFALL	000	02/01/99
18	OUTFALL	00G	02/01/99	41	OUTFALL	000	02/01/99
19	OUTFALL	00G	02/01/99	42	OUTFALL	000	02/01/99
20	OUTFALL	00G	02/01/99	43	OUTFALL	00C	02/01/99
21 🔹	OUTFALL	00G	02/01/99	44	OUTFALL	00C	02/01/99
22	OUTFALL	00G	02/01/99	45	OUTFALL	00C	02/01/99
23	OUTFALL	00G	02/01/99				



Order # 99-02-060 03/16/99 09:22 Page 2

Enclosed are results of specified samples submitted for analyses. If there are any questions, please contact Matt Lake. Our Ohio EPA Certification numbers are 836 & 837. Any result of "BDL" indicates "BELOW DETECTION LIMIT".

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Certified By MATT LAKE



Belmonte Park Environmental Laboratories

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Paga 3

Sample: 01A .	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion		•	
Test Descripti	on	Resu	lt Lim	it	Units	Analyzed	<u>By</u>
Eday CBOD.	EPA 405.1		3	2	mg/L	02/08/99	\mathbf{PT}
SUSPENDED SOLI	DS,EPA 160.2	В	DL	5	mg/L	02/11/99	KC
Sample: 02A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descripti	lon	Resu	<u>ilt Lim</u>	<u>lit</u>	<u>Units</u>	Analyzed	<u>By</u>
COD	EPA 410.4		6	5	mg/L	02/19/99	LG
TOC,	EPA 415.1	. 4	.5	1	mg/L	02/09/99	WU
Sample: 03A	OUTFALL 001	02/01/99	Collected	02/01/99	Category:	AQUEOUS	•
•			Deter	tion		•	_
Test Descript:	ion .	Rest	<u>ilt Lir</u>	<u>nit</u>	Units	<u>Analyzed</u>	By
AMMONIA N,	EPA 350.2	1	BDL ().5	mg/L	02/11/99	JB
Sample: 05A	OUTFALL 001	02/01/99	Collected	: 02/01/99	Category:	AQUEOUS	
•			Dete	ction	•.		Dee
Test Descript	ion	Rest	<u>ult Li</u>	<u>nit</u>	Units	Analyzed	BY
EPA 625 SEMI	VOL. EXTRACT		-		-		SD
EXTRACTION,	EPA 608	,	-		-	`	50
Sample: 06A	OUTFALL 001	02/01/99	Collected	: 02/01/99	Category:	AQUEOUS	
			Dete	ction	•.		D -4
Test Descript	ion	Res	<u>ult Li</u>	mit	Units	Analyzed	BY
ALUMINUM,	EPA 200.7	0	.05 0	.05	mg/L	02/12/99	RUE
ANTIMONY,	EPA 204.2		BDL 0.	001 ·	mg/L	03/05/99	DTE
ARSENIC,	EPA 206.2		BDL 0.	001	mg/L	03/05/99	20A 9770
BARIUM,	EPA 200.7	0.	021 0.	005	mg/L	02/11/99	RUE
BERYLLIUM,	EPA 200.7		BDL 0.	001	mg/L	02/11/99	RUL
BORON,	EPA 200.7	0	.07 0	.05	mg/L	02/12/99	RUE
CADMIUM,	EPA 213.2		BDL 0.0	002	mg/L	03/08/99	RUE
CHROMIUM,	EPA 200.7	*	BDL 0	.01	mg/L	02/11/99	RUE
COBALT,	EPA 200.7		BDL C	.01	mg/L	02/11/99	RUL
COPPER,	EPA 220.2		BDL 0.	001	mg/L	03/08/99	RUE
IRON,	EPA 200.7		BDL	0.1	mg/L	02/11/99	
LEAD,	EPA 239.2		BDL 0.	.001	mg/L	03/05/99	KUE DTT
TTTT	FD3 200 7	ſ	0.01 (0.01	mg/L	02/12/99	KUE

0.01

EPA 200.7

LITHIUM,

0.01



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TEST RESULTS BY SAMPLE

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			Detect	tion			
Test Description	n	<u>Resul</u>	<u>t Lim</u>	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
MAGNESIUM,	EPA 200.7	1	.1	1	mg/L	02/12/99	RJE
MANGANESE,	EPA 200.7	BI	ы 0.	01	mg/L	02/11/99	RJE
MERCURY,	EPA 245.1	BI	о.00 [.]	02	mg/L	02/11/99	RJE
METALS DIGESTIO	N, WATER		-		-		EP
MOLYBDENUM,	EPA 200.7	BI	оь о.	01	mg/L	02/11/99	RJE
NICKEL,	EPA 249.2	BI	DL 0.0	05	mg/L	03/08/99	RJE
SELENIUM,	EPA 200.7	BI	DL 0	.1	mg/L	02/11/99	RJE
SILVER,	EPA 272.2	· BI	0.00	05	mg/L	03/08/99	RJE
STRONTIUM,	EPA 200.7	0.1	L2 0.	01	mg/L	02/12/99	RJE
THALLIUM,	EPA 279.2	BI	DT 0'0	01	mg/L	03/05/99	RJE
URANIUM	EPA 200.7	. BI	0 고	.1	mg/L	02/15/99	RJE
ZINC,	EPA 200.7	· BI	DL 0.	02	mg/L	02/11/99	RJE
Sample: 07A C	UTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descriptio	n	Resu	lt Lim	it	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
SULFIDE,	EPA 376.1	BI	ЪГ	1	mg/L	03/05/99	\mathbf{LG}
TOTAL CYANIDE,	EPA 335.2	BI	야. 이.	01	mg/L	03/04/99	ĹG
Sample: 08A C	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descriptio	n	Resu	lt Lin	<u>ùt</u>	<u>Units</u>	<u>Analyzed</u>	By
PHENOLICS,	EPA 420.1	B	DL 0.	01	mg/L	02/23/99	JB
Sample: 09A C	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			
Test Descriptio	n	Resu	<u>lt Lin</u>	<u>it</u>	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
CHLORINE, RESI	DUAL TOTAL	В	DL 0.	.05 -	mg/L	02/03/99	ML
Sample: 10A	OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
			Detec	tion			•
Test Descriptio	n	Resu	lt Lin	nit	<u>Units</u>	Analyzed	<u>By</u>
NITRATE-NITRIT	E N	0.	38 ().2	mg/L	02/05/99	LG
ORGANIC NITROG	en	В	DL (0.5	mg/L	02/11/99	JB
PHOSPHORUS,	EPA 365.1	0.	37 (0.1	mg/L	02/18/99	LG
TKN,	EPA 351.3	B	DL (0.5	mg/L	02/06/99	JB
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TEST RESULTS BY SAMPLE

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. Sample: 11A OUTFALL 001 02/01/99 Collected: 02/01/99 Category: AQUEOUS

<u>Test Description</u> OIL & GREASE, EPA 413.1	<u>Resul</u> BI	<u>Detect</u> <u>Limi</u> L	<u>ion</u> 5	<u>Units</u> mg/L	<u>Analyzed</u> 02/10/99	<u>By</u> PT
Sample: 12A OUTFALL 001	02/01/99	Collected:	02/01/99 0	Category:	AQUEOUS	
		Detect	ion	••	Jeelenad	D
Test Description	<u>Resul</u>	<u>t Limi</u>	t		Analyzed	<u>ex</u>
GROSS ALPHA, IN WATER	BI)L	3	pCi/L	03/08/99	51
GROSS BETA, IN WATER	BI	DL .	4	pC1/L	03/08/99	Sr
RADIUM. IN WATER	BI	DL	1	pC1/L	03/10/99	Sr
RADIUM-226, IN WATER	BI	DL	1	pCi/L	03/10/99	Sr
Sample: 13A OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
		Detect	ion			
m Description	Resu	lt Limi	lt	<u>Units</u>	<u>Analyzed</u>	<u>By</u>
Test Description	<u> n</u> R	 DI. 0.0)1	mg/L	02/17/99	ML
METHYLENE BLOE ACTIVE SOB.	B	ם זם	LO	mg/L	02/18/99	JB
SULFITE, EPA 375.4 SULFITE,	B	DT	2	mg/L	02/17/99	ML
Sample: 14A OUTFALL 001	02/01/99	Collected:	02/01/99	Category:	AQUEOUS	
		Detec	tion	•••••••••••••••••••••••••••••••••••••••	Trainsort	Dir
Test Description	Resu	<u>lt Lim</u> ND 0	<u>it</u> .2 MF/	L, >10um	02/12/99	<u>by</u> EM
ASBESTOS WATER					DOTTROTTS	
Sample: 16A OUTFALL 00G	02/01/99	Collected:	02/01/99	Category:	AÕ07002	
		Detec	tion	**	Inclused	Ъv
Test Description	Rest	<u>ilt Lim</u>	<u>it</u> ·	$\frac{\text{Units}}{/7}$	Anaryzeu	DT
5day CBOD, EPA 405.1		4	2	. mg/1	02/08/99	ve
SUSPENDED SOLIDS, EPA 160.2]	BDL	5	mg/L	02/11/99	NC.
Sample: 17A OUTFALL 00G	02/01/99	Collected:	02/01/99	Category	AQUEOUS	
Test DescriptionCOD,'EPA 410.4TOC,EPA 415.1	Res	<u>Detec</u> ult Lin BDL 2.1	stion nit 5 1	<u>Units</u> mg/L mg/L	<u>Analyzed</u> 02/19/99 02/09/99	<u>By</u> LG JW



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TEST RESULTS BY SAMPLE

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Sample: 18A OUT	FALL 00G	02/01/99	Collecte	i: 02/01/99	Category:	AQUEOUS	
<u>Test Description</u> AMMONIA N,	EPA 350.2	<u>Resu</u> B	<u>Det</u> lt L DL	<u>ection</u> imit 0.5	<u>Units</u> mg/L	<u>Analyzed</u> 02/11/99	<u>By</u> JB
Sample: 20A OUT	FALL OOG	02/01/99	Collecte	d: 02/01/99	Category:	AQUEOUS	
Test Description EPA 625 SEMI VOL EXTRACTION,	. EXTRACT EPA 608	Resu	<u>Det</u> <u>-</u> -	<u>ection</u> imit	<u>Units</u> - -	<u>Analyzed</u>	<u>By</u> SD SD
Sample: 21A OU.	FFALL 00G	02/01/99	Collecte	d: 02/01/99	Category:	AQUEOUS	
		-	Det	ection	Unite	Analwzed	Bv
Test Description		Resu				02/12/99	R.TE
ALUMINUM,	EPA 200.7	E	27 201	0.05	mg/L	03/05/99	R.TE
ANTIMONY,	EPA 204.2	E	аль (с С		mg/L	03/05/99	RJE
ARSENIC,	EPA 206.2	E		.001		03/03/05	P.TE
BARIUM,	EPA 200.7	0.0	122	.005	. mg/1	02/11/00	D.TE
BERYLLIUM,	EPA 200.7	I		1.001	mg/1	02/11/99	ਸ਼ਹਮ ਸੁਸਦ
BORON,	EPA 200.7	0	.06	0.05	mg/L	02/12/99	2077 1077
CADMIUM,	EPA 213.2	I	BDL 0.	.0002	mg/L	03/08/33	AUA PTP
CHROMIUM,	EPA 200.7	I	3DL	0.01	mg/L	02/11/99	RUE

RJE mg/L 02/11/99 0.01 BDL EPA 200.7 COBALT, 03/08/99 RJE 0.001 mg/L BDL COPPER, EPA 220.2 RJE 02/11/99 0.1 mg/L BDL IRON, EPA 200.7 03/05/99 RJE mg/L 0.001 BDL LEAD, EPA 239.2 RJE 02/12/99 mg/L 0.01 EPA 200.7 BDL LITHIUM, 02/12/99 RJE mg/L 12 1 EPA 200.7 MAGNESIUM, 02/11/99 RJE mg/L BDL 0.01 EPA 200.7 MANGANESE, RJE 02/11/99 0.0002 mg/L BDL EPA 245.1 MERCURY, EΡ -METALS DIGESTION, -WATER RJE 02/11/99 0.01 mg/L BDL EPA 200.7 MOLYBDENUM, 03/08/99 RJE 0.005 mg/L BDL NICKEL, EPA 249.2 RJE 02/11/99 mg/L 0.1 BDL SELENIUM, EPA 200.7 RJE mg/L 03/08/99 0.0005 BDL EPA 272.2 SILVER, RJE 02/12/99 mg/L 0.01 0.14 EPA 200.7 STRONTIUM, RJE 03/05/99 mg/L 0.001 BDL EPA 279.2 THALLIUM, RJE 02/15/99 0.1 mg/L BDL EPA 200.7 URANIUM RJE mg/L 02/11/99 0.02 BDL EPA 200.7 ZINC,





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TEST RESULTS BY SAMPLE 03/16/99 09:22 02/01/99 Collected: 02/01/99 Category: AQUEOUS OUTFALL 00G Sample: 22A Detection <u>Limit</u> Units Analyzed By Test Description Result mg/L 03/05/99 LG SULFIDE, EPA 376.1 BDL 1 0.01 mg/L 03/15/99 LG TOTAL CYANIDE, EPA 335.2 BDL 02/01/99 Collected: 02/01/99 Category: AQUEOUS Sample: 23A OUTFALL 00G Detection Units Analyzed Limit By Test Description Result mg/L 02/23/99 0.01 JB PHENOLICS, EPA 420.1 BDL 02/01/99 Collected: 02/01/99 Category: AQUEOUS OUTFALL 00G Sample: 24A Detection <u>Limit</u> Units Analyzed By Test Description Result mg/L 02/03/99 ML 0.05 CHLORINE, RESIDUAL TOTAL BDL 02/01/99 Collected: 02/01/99 Category: AQUEOUS OUTFALL 00G Sample: 25A Detection Units Analyzed By <u>Limit</u> Result Test Description mg/L 02/05/99 LG 0.2 0.50 NITRATE-NITRITE N mg/L 02/11/99 JB ORGANIC NITROGEN 0.5 BDL mg/L 02/18/99 LGBDL 0.1 PHOSPHORUS, EPA 365.1 mg/L 02/06/99 JB 0.5 BDL EPA 351.3 TKN; 02/01/99 Collected: 02/01/99 Category: AQUEOUS Sample: 26A OUTFALL 00G Detection Units Analyzed By Result Limit Test Description mg/L 02/10/99 PT 5 BDL OIL & GREASE, EPA 413.1 02/01/99 Collected: 02/01/99 Category: AQUEOUS Sample: 27A OUTFALL 00G

				Detection				
Test Description			Result	Limit	Un	its	<u>Analyzed</u>	By
GROSS ALPHA,	IN	WATER	BDL	3	pC	:i/L	03/08/99	SF
GROSS BETA,	IN	WATER	BDL	4	pC	i/L	03/08/99	SF
RADIUM.	IN	WATER	BDL	1	pC	'i/L	03/10/99	SF
RADIUM-226,	IN	WATER	BDL	1	pC	!i/L	03/10/99	SF



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TEST RESULTS BY SAMPLE

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Sample: 28A OUTFALL 00G	02/01/99 Co	llected: 02/01/99	Category:	AQUEOUS	
		Detection			
Test Description	Result	<u>Limit</u>	Units	Analyzed	By
METHYLENE BLUE ACTIVE SUB.	BDL	0.01	mg/L	02/17/99	ML
CITERATE EDA 375 4	113	10	mg/L	02/18/99	JB
SULFAIL, BIA 575.4	זחפ.		$m_{\rm CI}/T_{\rm L}$	02/17/99	MT.
SULFILE,		2		02/2//00	
Sample: 29A OUTFALL 00G	02/01/99 Co	llected: 02/01/99	Category:	AQUEOUS	
		Detection			
Test Description	Result	<u>Limit</u>	<u>Units</u>	Analyzed	By
ASBESTOS WATER	ND	0.2 MF	/L, >10um	02/12/99	EM
Sample: 31A OUTFALL 00C	02/01/99 Co	llected: 02/01/99	Category:	AQUEOUS .	
		Detection			
Test Description	Result	<u>Limit</u>	Units	Analyzed	<u>By</u>
5day CBOD. EPA 405.1	4	2	mq/L	02/08/99	\mathbf{PT}
CURDENDED SOLIDS EDA 160 2	TIGR	5	mg/L	02/11/99	KC
SOSTEMENT SOUTES, HIM 100.12	222	-	- 12-1		
Sample: 32A OUTFALL 00C	02/01/99 Co	llected: 02/01/99	Category:	AQUEOUS	
		Detection			
Test Description	Result	Limit	Units	Analyzed	<u>By</u>
COD. EPA 410.4	BDL	5	mg/L	02/19/99	LG
TOC EPA 415 1	BDT	1	mg/L	02/09/99	JW
100, <u><u><u>II</u></u><u>II</u><u>I</u><u>I</u><u>I</u><u>I</u><u>I</u><u>I</u><u>I</u><u>I</u><u>I</u><u>I</u></u>		-			
Sample: 33A OUTFALL 00C	02/01/99 Cc	llected: 02/01/99	Category:	AQUEOUS	
		Detection			
Test Description	Pecult	T.imit	Units	Analvzed	Bv
Test Description	<u>Nesure</u>	0 5		02/11/99	
AMMONIA N, EPA 350.2	חתפ	0.5 .	<u>9</u> / 11	02/11/33	02
Sample: 35A OUTFALL 00C	02/01/99 Ca	ollected: 02/01/99	Category:	AQUEOUS	
		Detection			
Test Description	Pegult	Timit	Units	Analyzed	By
TESC DESCLIPTION	<u>NEGUIL</u>		<u></u>		SD
EPA 625 SEMI VOL. EXTRACT	-		-		SD
EXTRACTION, EPA 608	-		-		J



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TEST RESULTS BY SAMPLE

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Sample: 36A OUTFALL 00C

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02/01/99 Collected: 02/01/99 Category: AQUEOUS

		•	Detection			
Test Descripti	on	Result	Limit	<u>Units</u>	<u>Analyzed</u>	By
ALUMINUM.	EPA 200.7	BDL	0.05	mg/L	02/12/99	RJE
ANTIMONY.	EPA 204.2	0.002	0.001	mg/L	03/05/99	RJE
ARSENIC.	EPA 206.2	BDL	0.001	mg/L	03/05/99	RJE
BARTUM.	EPA 200.7	BDL	0.005	mg/L	02/11/99	RJE
BERYLLIUM.	EPA 200.7	BDL	0.001	mg/L	02/11/99	RJE
BORON.	EPA 200.7	BDL	0.05	mg/L	02/12/99	RJE
CADMIUM.	EPA 213.2	. BDL	0.0002	mg/L	03/08/99	RJE
CHROMIUM.	EPA 200.7	BDL	0.01	mg/L	02/11/99	RJE
COBALT.	EPA 200.7	. BDL	0.01	mg/L	02/11/99	RJE
COPPER.	EPA 220.2	. 0.012	0.001	mg/L	03/08/99	RJE
TRON.	EPA 200.7	BDL	0.1	mg/L	02/11/99	RJE
LEAD.	EPA 239.2	BDL	0.001	mg/L	03/05/99	RJE
LTTHIUM.	EPA 200.7	BDL	0.01	mg/L	02/12/99	RJE
MAGNESTUM.	EPA 200.7	BDL	1	mg/L	02/12/99	RJE
MANGANESE.	EPA 200.7	0.01	0.01	mg/L	02/11/99	RJE
MERCURY.	EPA 245.1	BDL	0.0002	mg/L	02/11/99	RJE
METALS DIGEST	ION. WATER	-		-		EP
MOLYBDENUM.	EPA 200.7	, BDT	0.01	. mg/L	02/11/99	RJE
NTCKEL.	EPA 249.2	BDL	0.005	mg/L	03/08/99	RJE
SELENIUM.	EPA 200.7	BDL	0.1	mg/L	02/11/99	RJE
STLVER.	EPA 272.2	BDL	0.0005	mg/L	03/08/99	RJE
STRONTIUM.	EPA 200.7	~ BDL	0.01	mg/L	02/12/99	RJE
THALLIUM.	EPA 279.2	BDL	0.001	mg/L	03/05/99	RJE
ITRANTUM	EPA 200.7	BDL	0.1	mg/L	02/15/99	RJE
ZINC,	EPA 200.7	BDL	0.02	mg/L	02/11/99	RJE
Sample: 37A	OUTFALL 00C	02/01/99 Col	lected: 02/01/	99 Category:	AQUEOUS	

DetectionDetectionTest DescriptionResultLimitUnitsAnalyzedBySULFIDE,EPA 376.1BDL1mg/L03/05/99LGTOTAL CYANIDE,EPA 335.2BDL0.01mg/L03/04/99LG

Sample: 38A OUTFALL 00C

			Detection			
Test Descripti	on	Result	Limit	<u>Units</u>	<u>Analyzed</u>	By
PHENOLICS,	EPA 420.1	BDL	0.01	mg/L	02/23/99	JB

02/01/99 Collected: 02/01/99 Category: AQUEOUS





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Sample: 39A	OUTFALL 00C	02/01/99	Coll	ected:	02/01/99	Cate	gory:	AQUEOUS	
				Detect	tion				
Test Descript	ion	Resu	<u>lt</u>	Lim:	<u>it</u>	Ţ	<u>Jnits</u>	<u>Analyzed</u>	By
CHLORINE, RES	IDUAL TOTAL	В	DL	0.0	05		mg/L	02/03/99	ML
Sample: 40A	OUTFALL 00C	02/01/99	Coll	.ected:	02/01/99	Cate	gory:	AQUEOUS	
				Detec	tion				
Test Descript	ion	Resu	lt	<u>Lim</u>	<u>it</u>	1	<u> Jnits</u>	<u>Analyzed</u>	<u>By</u>
NTTRATE-NITRI	TE N	E	DL	0	.2		mg/L	02/05/99	LG
OPCANTC NITEC	GEN	E	DL	0	.5		mg/L	02/11/99	JB
DUOS DHORIIS	EPA 365.1	E	DL	0	.1		mg/L	02/18/99	LG
TKN,	EPA 351.3	E	DL	0	.5		mg/L	02/06/99	JB
Sample: 41A	OUTFALL 00C	02/01/99	Col	lected:	02/01/99	Cat	egory:	AQUEOUS	
				Detec	tion				
Tost Descript	ion	Resu	ilt	Lim	it		<u>Units</u>	<u>Analyzed</u>	By
OIL & GREASE,	EPA 413.1	I	BDL		5		mg/L	02/10/99	PT
Sample: 42A	OUTFALL 00C	02/01/99	Col	lected:	02/01/99	Cat	egory:	AQUEOUS	
				Detec	tion				_
Test Descript	<u>cion</u>	Resi	<u>ilt</u>	<u>Lin</u>	<u>nit</u>		<u>Units</u>	Analyzed	<u>BX</u>
GROSS ALPHA,	IN WATER]	BDL		3		pCi/L	03/08/99	SF
GROSS BETA,	IN WATER	1	BDL		4		pCi/L	03/08/99	SF
RADIUM.	IN WATER	1	BDL		1		pCi/L	03/10/99	SF
RADIUM-226,	IN WATER	:	BDL		1		pCi/L	03/10/99	SF
Sample: 43A	OUTFALL 00C	02/01/99	Col	lected	: 02/01/99	Cat	egory:	AQUEOUS	
				Dete	ction -				
Mast Descrip	tion	Res	ult	Li	mit		<u>Units</u>	<u>Analyzed</u>	<u>By</u>
NEEDVIENE BL	UF ACTIVE SUB		BDL	_0	.01		mg/L	02/17/99	ML
MEINIDENE DE			BDL		10		mg/L	02/18/99	JB
SULFITE.	2FK 373.4		BDL		2		mg/L	02/17/99	ML
Sample: 44A	OUTFALL 00C	02/01/99	Col	llected	: 02/01/99	9 Ca	tegory	: AQUEOUS	
•				Dete	ction				
Test Descrip	tion	Res	ult	Li	mit_		<u>Units</u>	<u>Analyzed</u>	<u>By</u>
ACRECTOC WAT	ER		ND		0.2	MF/L,	>10um	02/12/98	EM



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TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 001 Test Description: EPA 624 Collected: 02/01/99 02/01/99 Lab No: 04A Method: 624 Category: AQUEOUS

Test Code: 624_X

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PARAMETER

RESULT

LIMIT

ACROLEIN	BDL	_20	
ACRYLONITRILE	BDL	20	
2-CHLOROETHYLVINYL ETHER	BDL	20	
BENZENE	BDL	2	
CARBON TETRACHLORIDE	BDL	2	
CHLOROBENZENE	BDL	2	
1.2-DICHLOROETHANE	BDL	2	
1,1,1-TRICHLOROETHANE	BDL	2	
1.1-DICHLOROETHANE	BDL	2	
1,1,2-TRICHLOROETHANE	BDL	2	
1,1,2,2-TETRACHLOROETHANE	BDL	2	
CHLOROETHANE	BDL	10	
CHLOROFORM	BDL	2	
1,1-DICHLOROETHYLENE	BDL	2	
1,2-TRANS-DICHLOROETHYLENE	BDL	2	
1,2-DICHLOROPROPANE	BDL	2	
CIS-1,3-DICHLOROPROPYLENE	BDL	2	
TRANS-1, 3-DICHLOROPROPYLENE	BDL	2	
ETHYLBENZENE	BDL	2	
1,2-DICHLOROBENZENE	BDL	2	
1,3-DICHLOROBENZENE	BDL	2	
1,4-DICHLOROBENZENE	BDL	2	
METHYLENE CHLORIDE	BDL	10	
CHLOROMETHANE	BDL	10	
BROMOMETHANE	BDL	2	
BROMOFORM	BDL	2	
DICHLOROBROMOMETHANE	BDL-	2	
TRICHLOROFLUOROMETHANE	BDL	2	
CHLORODIBROMOMETHANE	BDL	2	
TETRACHLOROETHYLENE	BDL	2	
TOLUENE	BDL	2	
TRICHLOROETHENE	BDL	2	
VINYL CHLORIDE	BDL	10	
XYLENES	BDL	10	
SURROGATE &REC	OVERY	LIMITS	
D4-1,2 DICHLOROETHANE	112 _	76	114
DB-TOLUENE	94 -	88	110

Committed to Quality Since 1958



Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 001 Test Description: EPA 624 Collected: 02/01/99

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02/01/99 Lab No: 04A Method: 624 Category: AQUEOUS

Test Code: 624_X

4-BROMOFLUOROBENZENE <u>96</u> <u>86</u> - <u>115</u>

Notes and Definitions for this Report:

DATE RUN 02/09/99 ANALYST JMM INSTRUMENT <u>GC/MS</u> FILE ID <u>9020934</u> UNITS <u>ug/L</u> METHOD <u>EPA 624</u> BDL <u>BELOW DETECTION LIMIT</u>



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

RESULT

LIMIT

02/01/99 Lab No: 05A Sample Description: OUTFALL 001 Test Description: EPA 625 SEMI VOLATILES Method: 625 Category: AQUEOUS Collected: 02/01/99

Test Code: 625_AE

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PARAMETER	RESULT	LIMIT
2.4.6-TRICHLOROPHENOL	BDL	10
4-CHLORO-3-METHYLPHENOL	BDL	10
2-CHLOROPHENOL	BDL	10
2.4-DICHLOROPHENOL	BDL	10
2.4-DIMETHYLPHENOL	BDL	10
2-NITROPHENOL	BDL	10
4-NITROPHENOL	BDL	50
2.4-DINITROPHENOL	BDL	50
2-METHYL-4,6-DINITROPHENOL	BDL	50
PENTACHLOROPHENOL	BDL	50
PHENOL	BDL	10
ACENAPHTHENE	BDL	10
BENZIDENE	BDL	50
1,2,4-TRICHLOROBENZENE	BDL	10
HEXACHLOROBENZENE	BDL	10
HEXACHLOROETHANE	BDL	10
BIS (2-CHLOROETHYL) ETHER	BDL	10
2-CHLORONAPHTHALENE	BDL	10
1,2-DICHLOROBENZENE	BDL	10
1,3-DICHLOROBENZENE	BDL	10
1,4-DICHLOROBENZENE	BDL	10
3, 3-DICHLOROBENZIDINE	BDL	20
2,4-DINITROTOLUENE	BDL	10
2,6-DINITROTOLUENE	BDL	10
FLUORANTHENE	BDL	10
4-CHLOROPHENYL PHENYL ETHER	BDL	10
4-BROMOPHENYL PHENYL ETHER	BDL	10
BIS (2-CHLOROISOPROPYL) ETHER		10
BIS (2-CHLOROETHOXY) METHANE	BDL	10
HEXACHLOROBUTADIENE	BDL	10
HEXACHLOROCYCLOPENTADIENE	BDL	10
ISOPHORONE	BDL	10
NAPHTHALENE	BDL	10
NITROBENZENE	. <u></u>	10
N-NITROSODIMETHYLAMINE	BDL	10
N-NITROSODIPHENYLAMINE	BDL	10
N-NITROSODI-N-PROPYLAMINE	BDL	10
BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 001 02/01/9 Test Description: EPA 625 SEMI VOLATILES Collected: 02/01/99

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02/01/99 Lab No: 05A TILES Method: 625 Category: AQUEOUS

Test Code: 625 AE

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BUTYL BENZYLPHTHALATE	BDL	10
DI-N-BUTYL PHTHALATE	BDL	10
DI-N-OCTYL PHTHALATE	BDL	10
DIETHYL PHTHALATE	BDL	10
DIMETHYL PHTHALATE	BDL	10
BENZO (A) ANTHRACENE	BDL	10
BENZO (A) PYRENE	BDL	10
3,4-BENZOFLUORANTHENE	BDL	10
BENZO (K) FLUORANTHENE	BDL	10
CHRYSENE	<u> </u>	10
ACENAPHTHYLENE ·	BDL	10
ANTHRACENE	BDL	10
BENZO (GHI) PERYLENE	BDL	50
FLUORENE	BDL	10
PHENANTHRENE	BDL	10
DIBENZO (A, H) ANTHRACENE	BDL	50
INDENO (1,2,3-CD) PYRENE	BDL	50
PYRENE	BDL	10
ETHANOL AMINE	BDL	100
HYDRAZINE	BDL	200

SURROGATE	%RECOVERY	LIMITS	
NITROBENZENE-d5	85	<u> </u>	114
2-FLUOROBIPHENYL	72	43 -	116
p-TERPHENYL-d14		<u> </u>	141
PHENOL-d6	46	10 -	94
2-FLUOROPHENOL	74	21	100
2,4,6-TRIBROMOPHENOL	50	10 -	123

Notes and Definitions for this Report:

EXTRACTED <u>02/07/99</u>	
DATE RUN <u>02/25/99</u>	
ANALYST <u>TC</u>	
INSTRUMENT <u>GC/MS</u>	
FILE ID S9022524	
UNITS <u>ug/L</u>	
METHOD EPA 625	
BDL BELOW DETECTION LIMI	(T)



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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02/01/99 Lab No: 05A Sample Description: OUTFALL 001 Test Description: PCB/PESTICIDES EPA 608 Method: 608 Category: AQUEOUS Collected: 02/01/99

Test Code: 608

PARAMETER	RESULT	LIMIT
ALDRIN	BDL	0.010
ALPHA-BHC		0.010
BETA-BHC	BDL	0.010
DELTA-BHC	BDL	0.010
GAMMA-BHC	BDL	0.010
CHLORDANE	BDL	0.010
4,4-DDT	BDL	0.010
4,4-DDE	BDL	0.010
4,4-DDD	BDL	0.010
DIELDRIN	BDL	0.010
ALPHA ENDOSULFAN	BDL	0.010
BETA ENDOSULFAN	BDL	0.010
ENDOSULFAN SULFATE	BDL	0.10
ENDRIN	BDL	0.010
ENDRIN ALDEHYDE	BDL	0.020
HEPTACHLOR	BDL	0.030
HEPTACHLOR EPOXIDE	BDL	0.10
PCB-1016	BDL	0.10
PCB-1221	BDL	0.20
PCB-1232	BDL	0.10
PCB-1242	BDL	0.10
PCB-1248	BDL	0.10
PCB-1254	BDL	0.10
PCB-1260	BDL	0.10
TOXAPHENE	BDL	0.20

SURE	OGATE	%RECOVERY	LIMI	rs	
DBC (SITEROGATE, & REC	OVERY)	90	70	-	130
2,4,5,6-TCX (SURROGATE	REC.)	93	70	-	130

Notes and Definitions for this Report:

EXTRACTED 02/06/99 DATE RUN 02/09/99 ANALYST JW GC INSTRUMENT FILE ID A020913 UNITS <u>uq/L</u>

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03	/1	6/	99		0 9):	2	2			

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 001 02/03 Test Description: PCB/PESTICIDES EPA 608 Collected: 02/01/99

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02/01/99	Lab No:	05A
608	Method:	608
C	ategory:	AQUEOUS

Test Code: 608

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METHOD <u>EPA 608</u> BDL <u>BELOW DETECTION LIMIT</u>



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TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 001 02/01/99 Lab No: 15A Test Description: Triaryl Phosphate Sub-Out Method: Special Test Test Code: 8270_U Collected: 02/01/99 Category: AQUEOUS

PARAMETER			RESULT	LIM	IT		
TRIPHENYL PHOS TRICRESYL PHOS	SPHATE EST SPHATE EST	ER ER	BDL BDL	!		5	
SURRO	OGATE	%RECOVE	RY	LIMI	TS	-	
NITROBENZI	ENE-D5	65		35	-	1	.14
2-FLUOROBI	PHENYL	78	<u> </u>	43		1	<u>.16</u>
D-TERPHEN	YL-d14	113		33	-	1	41
PHE	NOL-d6	25	<u> </u>	10	-		94
2-FLUORO	PHENOL	* 30	<u>)</u> _	21	-	1	.00
2,4,6-TRIBROMO	PHENOL	93	<u> </u>	10	-	1	.23

Notes and Definitions for this Report:

EXTRACTED (02/08/99	
DATE RUN 02	<u>2/11/99</u>	
ANALYST JAT	<u>[</u>	
INSTRUMENT	SATURN	
FILE ID	0206501W	
UNITS _uq/1	Ľ.	
METHOD	8270	
BDL BELOW	DETECTION	LIMIT





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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00G Test Description: EPA 624 Collected: 02/01/99 02/01/99 Lab No: 19A Method: 624 Category: AQUEOUS

Test Code: 624_X

PARAMETER

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RESULT

LIMIT

ACROLEIN	BDL	20
ACRYLONITRILE	BDL	20
2-CHLOROETHYLVINYL ETHER	BDL	20
BENZENE	BDL	2
CARBON TETRACHLORIDE	BDL	2
CHLOROBENZENE	BDL	2
1,2-DICHLOROETHANE	BDL	2
1,1,1-TRICHLOROETHANE	BDL	2
1,1-DICHLOROETHANE	BDL	2
1,1,2-TRICHLOROETHANE	BDL	2
1,1,2,2-TETRACHLOROETHANE	BDL	2
CHLOROETHANE	BDL	10
CHLOROFORM .	BDL	2
1,1-DICHLOROETHYLENE	BDL	2
1,2-TRANS-DICHLOROETHYLENE	BDL	2
1,2-DICHLOROPROPANE	BDL	2
CIS-1,3-DICHLOROPROPYLENE	BDL	2
TRANS-1, 3-DICHLOROPROPYLENE	BDL	2
ETHYLBENZENE	BDL	2
1,2-DICHLOROBENZENE	BDL	2
1,3-DICHLOROBENZENE	BDL	2
1, 4-DICHLOROBENZENE	BDL	2
METHYLENE CHLORIDE	BDL	10
CHLOROMETHANE	BDL	10
BROMOMETHANE .	BDL	2
BROMOFORM	BDL	2
DICHLOROBROMOMETHANE	BDL-	2
TRICHLOROFLUOROMETHANE	BDL	2
CHLORODIBROMOMETHANE	BDL	2
TETRACHLOROETHYLENE	BDL	2
TOLUENE	BDL	2
TRICHLOROETHENE	BDL	2
VINYL CHLORIDE	BDL	10
XYLENES	BDL	10
SURROGATE &RECO	VERY	LIMITS
D4-1,2 DICHLOROETHANE	<u>13</u>	
D8-TOLUENE	92	<u> </u>

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<u>114</u> 110



Order # 99-02-060 03/16/99 09:22	TEST	RESULTS BY SAMPLE	<u> </u>	Page 19
Sample Description:	OUTFALL 00G	02/01/99 Lab No:	19A	Test Code: 624_X
Test Description:	EPA 624	Method:	624	
Collected:	02/01/99	Category:	AQUEOUS	

4-BROMOFLUOROBENZENE

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93

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Notes and Definitions for this Report:

DATE RUN <u>02/09/99</u>	
ANALYST JMM	
INSTRUMENT GC/MS	-
FILE ID <u>9020935</u>	
UNITS ug/L	
METHOD EPA 624	
BDL BELOW DETECTI	ON LIMIT

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00G 02/01/99 Lab No: 20A Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99 Category: AQUEOUS Page 20

Test Code: 625_AE

PARAMETER	RESULT	LIMIT
2,4,6-TRICHLOROPHENOL	BDL	10
4-CHLORO-3-METHYLPHENOL	BDL	10
2-CHLOROPHENOL	BDL	10
2,4-DICHLOROPHENOL	BDL	10
2,4-DIMETHYLPHENOL	BDL	10
2-NITROPHENOL	BDL	10
4-NITROPHENOL	BDL	50
2,4-DINITROPHENOL	BDL	50
2-METHYL-4,6-DINITROPHENOL	BDL	50
PENTACHLOROPHENOL	BDL	50
PHENOL	BDL	10
ACENAPHTHENE	BDL	10
BENZIDENE	BDL	50
1,2,4-TRICHLOROBENZENE	BDL	10
HEXACHLOROBENZENE	BDL	10
HEXACHLOROETHANE	BDL	10
BIS (2-CHLOROETHYL) ETHER	BDL	10
2-CHLORONAPHTHALENE	BDL	10
1,2-DICHLOROBENZENE	BDL	1.0
1,3-DICHLOROBENZENE	BDL	10
1,4-DICHLOROBENZENE	BDL	10
3,3-DICHLOROBENZIDINE	BDL	. 20
2,4-DINITROTOLUENE	BDL	10
2,6-DINITROTOLUENE	BDL	10
FLUORANTHENE	BDL	10
4-CHLOROPHENYL PHENYL ETHER	BDL	10
4-BROMOPHENYL PHENYL ETHER	BDL-	10
BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
BIS (2-CHLOROETHOXY) METHANE	BDL	10
HEXACHLOROBUTADIENE	BDL	10
HEXACHLOROCYCLOPENTADIENE	BDL	10
ISOPHORONE	BDL	10
NAPHTHALENE	BDL	10
NITROBENZENE	BDL	10
N-NITROSODIMETHYLAMINE	BDL	10
N-NITROSODIPHENYLAMINE	BDL	10
N-NITROSODI-N-PROPYLAMINE	BDL	10
BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10

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TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00G Test Description: EPA 625 SEMI VOLATILES Collected: 02/01/99

02/01/99 Lab No: 20A Method: 625 Category: AQUEOUS

Test Code: 625_AE

BUTYL BENZYLPHTHALATE	BDL	10
DT-N-BUTYL PHTHALATE	BDL	10
DI-N-DOTIL IMILATE	BDL	10
	BDL	10
DIEINIL PHINALAIE	BDL	10
DIMETRIL PHIRADALE	BDI.	10
BENZO (A) ANTHRACENE		10
BENZO (A) PYRENE	<u> </u>	
3,4-BENZOFLUORANTHENE	BDL	10
BENZO (K) FLUORANTHENE	BDL	10
CHRYSENE	BDL	10
ACENAPHTHYLENE	BDL	10
ANTHRACENE	BDL	10
BENZO (GHI) PERYLENE	BDL	50
FLUORENE	BDL	. 10
PHENANTHRENE	BDL	10
DIBENZO (A H) ANTHRACENE	BDL	50
TNDENO (1 2 3-CD) PYRENE	BDL	50
DYDENE	BDL	10
PIRENE DIVINE	BDL	100
ETHANOL AMINE	.109	200
HYDRAZINE		200

SURROGATE	%RECOVERY	LIMITS	
NTTROBENZENE-d5	64	<u> </u>	<u> 114</u>
2-FLUOPORT PHENYL	65	43 -	116
-TEPDHENVId14	77	33 -	141
p-IERFIERIE CIT	35	10 -	94
2 ELUOROPHENOL	33		100
2-FLOOROFHENOL	65	1.0 -	123
Z,4,6-IRIBROMOFILMOD			

Notes and Definitions for this Report:

EXTRACTED	<u>02/07/99</u>	
DATE RUN	<u>02/25/99</u>	
ANALYST _	TC	
INSTRUMENT	GC/MS	
FILE ID	<u>\$9022525</u>	
UNITS _uc	<u>1/L</u>	
METHOD _1	<u>EPA 625</u>	
BDL BELO	OW DETECTION	LIMIT



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00G 02/01/99 Lab No: 20A Test Description: PCB/PESTICIDES EPA 608 Method: 608 Collected: 02/01/99 Category: AQUEOUS

Test Code: 608

PARAMETER

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RESULT

LIMIT

ALDRIN	BDL	0.010
ALPHA-BHC	BDL	0.010
BETA-BHC	BDL	0.010
DELTA-BHC	BDL	0.010
GAMMA-BHC	BDL	0.010
CHLORDANE	BDL	0.010
4,4-DDT	BDL	0.010
4,4-DDE	BDL	0.010
4,4-DDD	BDL	0.010
DIELDRIN	BDL	0.010
ALPHA ENDOSULFAN	BDL	0.010
BETA ENDOSULFAN	BDL	0.010
ENDOSULFAN SULFATE	BDL	0.10
ENDRIN	BDL	0.010
ENDRIN ALDEHYDE	BDL	0.020
HEPTACHLOR	BDL	0.030
HEPTACHLOR EPOXIDE	BDL	0.10
PCB-1016	BDL	0.10
PCB-1221	BDL	0.20
PCB-1232	BDL	0.10
PCB-1242	BDL	0.10
PCB-1248	BDL	0.10
PCB-1254	BDL	0.10
PCB-1260	BDL	0.10
TOXAPHENE	BDL	0.20

SURROGATE	RECOVERY	LIMITS	
DBC (SURROGATE, % RECOVERY) <u>89</u>	70 -	130
2,4,5,6-TCX(SURROGATE % REC.)94	<u> </u>	<u>130</u>

Notes and Definitions for this Report:

EXTRACTED 02/06/99 DATE RUN 02/09/99 ANALYST <u>JW</u> INSTRUMENT <u>GC</u> FILE ID <u>A020914</u> UNITS <u>ug/L</u>



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TEST_RESULTS BY SAMPLE

Sample Description: OUTFALL 00G 02/03 Test Description: PCB/PESTICIDES EPA 608 Collected: 02/01/99

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02/01/99 Lab No: 20A 608 Method: 608 Category: AQUEOUS

Test Code: 608

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METHOD <u>EPA 608</u> BDL <u>BELOW DETECTION LIMIT</u>



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00G 02/01/99 Lab No: 30A Test Description: Triaryl Phosphate Sub-Out Method: Special Test Test Code: 8270_U Collected: 02/01/99 Category: AQUEOUS

%RECOVERY

60

78

115

28

35

85

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PARAMETER
PARAMETER

TRIPHENYL PHOSPHATE ESTER

TRICRESYL PHOSPHATE ESTER

RESULT LIMIT

LIMITS

-

35

43

33

10

<u>21</u>

10

5

5

114

116

141

94

100

123

BDL _____BDL

SURROGATE NITROBENZENE-D5 2-FLUOROBIPHENYL p-TERPHENYL-d14 PHENOL-d6 2-FLUOROPHENOL 2,4,6-TRIBROMOPHENOL

Notes and Definitions for this Report:

EXTRACTED 02/08/99 DATE RUN 02/11/99 ANALYST JAT INSTRUMENT <u>SATURN</u> FILE ID 0206504W UNITS ug/L METHOD 8270 BDL BELOW DETECTION LIMIT



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00C Test Description: EPA 624 Collected: 02/01/99 02/01/99 Lab No: 34A Method: 624 Category: AQUEOUS

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Test Code: 624_X

P	AR	AME	TEF	ξ	

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RESULT

LIMIT

	BDL	20	
ACROLEIN	BDL	20	
ACRYLONITRILE	BDL	20	
2-CHLOROETHYLVINIL EINER	BDL	2	
BENZENE	BDL	2	
CARBON TETRACHLORIDE	BDL	2	
CHLOROBENZENE	BDL	2	
1,2-DICHLOROETHANE	BDL	2	
1,1,1-TRICHLOROETHANE	BDL	2	
1,1-DICHLOROETHANE	BDL	2	
1,1,2-TRICHLOROETHANE	BDL	2	
1,1,2,2-TETRACHLOROETHANE	BDL	10	
CHLOROETHANE	BDL	2	
CHLOROFORM		2	
1,1-DICHLOROETHYLENE	BDL	2	
1,2-TRANS-DICHLOROETHYLENE	BDI,	2	
1,2-DICHLOROPROPANE	BDL	2	
CIS-1, 3-DICHLOROPROPYLENE	BDI	2	
TRANS-1, 3-DICHLOROPROPYLENE		2	
ETHYLBENZENE	BDL	2	
1,2-DICHLOROBENZENE	· BDL	2	
1,3-DICHLOROBENZENE	BDL	2	
1,4-DICHLOROBENZENE	BDI	10	
METHYLENE CHLORIDE	BDL	10	
CHLOROMETHANE	BDL	2	
BROMOMETHANE		2	
BROMOFORM		2	
DICHLOROBROMOMETHANE		2	
TRICHLOROFLUOROMETHANE		2	
CHLORODIBROMOMETHANE		2	
TETRACHLOROETHYLENE	<u>BDD</u>	2	
TOLUENE	<u></u>	2	
TRICHLOROETHENE		10	
VINYL CHLORIDE	<u>וותם</u>	10	
XYLENES	BUI		
SURROGATE	%RECOVERY	LIMITS	
DA-1 2 DICHLOROETHANE	114	76	114
D8-TOLUENE	94	88	110





Order	#	99-02-060	
03/16/	/99	09:22	

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00C Test Description: EPA 624 Collected: 02/01/99

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02/01/99 Lab No: 34A Method: 624 Category: AQUEOUS

Test Code: 624_X

4-BROMOFLUOROBENZENE <u>93</u><u>86</u>-<u>115</u>

Notes and Definitions for this Report:

DATE RUN 02/09/99 ANALYST JMM INSTRUMENT <u>GC/MS</u> FILE ID <u>9020936</u> UNITS <u>ug/L</u> METHOD <u>EPA 624</u> BDL <u>BELOW DETECTION LIMIT</u>



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PARAMETER

Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00C 02/03 Test Description: EPA 625 SEMI VOLATILES Collected: 02/01/99

02/01/99 Lab No: 35A TLES Method: 625 Category: AQUEOUS

RESULT

LIMIT

Test Code: 625_AE

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BDL 10 2,4,6-TRICHLOROPHENOL 10 BDL 4-CHLORO-3-METHYLPHENOL 10 BDL 2-CHLOROPHENOL 10 BDL 2,4-DICHLOROPHENOL 10 BDL 2,4-DIMETHYLPHENOL B<u>DL</u> 10 2-NITROPHENOL 50 BDL 4-NITROPHENOL 50 BDL 2,4-DINITROPHENOL 50 BDL 2-METHYL-4,6-DINITROPHENOL 50 BDL PENTACHLOROPHENOL 10 BDL PHENOL 10 BDL ACENAPHTHENE 50 BDL BENZIDENE 10 BDL 1,2,4-TRICHLOROBENZENE 10 BDL HEXACHLOROBENZENE 10 BDL HEXACHLOROETHANE 10 BDL BIS (2-CHLOROETHYL) ETHER 10 BDL 2-CHLORONAPHTHALENE 10 BDL 1,2-DICHLOROBENZENE 10 BDL 1,3-DICHLOROBENZENE 10 BDL 1,4-DICHLOROBENZENE BDL 20 3,3-DICHLOROBENZIDINE 10 BDL 2,4-DINITROTOLUENE 10 BDL 2,6-DINITROTOLUENE 10 BDL FLUORANTHENE 10 BDL 4-CHLOROPHENYL PHENYL ETHER 10 BDL 4-BROMOPHENYL PHENYL ETHER 10 BDL BIS (2-CHLOROISOPROPYL) ETHER 10 BDL BIS (2-CHLOROETHOXY) METHANE 10 BDL HEXACHLOROBUTADIENE 10 BDL HEXACHLOROCYCLOPENTADIENE BDL 10 ISOPHORONE 10 BDL NAPHTHALENE 10 BDL NITROBENZENE 10 BDL N-NITROSODIMETHYLAMINE 10 BDL N-NITROSODIPHENYLAMINE 10 BDL N-NITROSODI-N-PROPYLAMINE 10 BDL BIS (2-ETHYLHEXYL) PHTHALATE

Committed to Quality Since 1958



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Order	#	99-02-060
03/16/	'99	09:22

TEST RESULTS BY SAMPLE

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Sample Description: OUTFALL 00C Test Description: EPA 625 SEMI VOLATILES Method: 625 Collected: 02/01/99

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02/01/99 Lab No: 35A Category: AQUEOUS Test Code: 625_AE

Page 28

BUTYL BENZYLPHTHALATE	BDL	10
DI-N-BUTYL PHTHALATE	BDL	10
DI-N-OCTYL PHTHALATE	BDL	10
DIETHYL PHTHALATE	BDL	10
DIMETHYL PHTHALATE	BDL	10
BENZO (A) ANTHRACENE	BDL	10
BENZO (A) PYRENE	BDL	10
3,4-BENZOFLUORANTHENE	BDL	10
BENZO (K) FLUORANTHENE	BDL	10
CHRYSENE	BDL	10
ACENAPHTHYLENE	BDL	10
ANTHRACENE	BDL	10
BENZO (GHI) PERYLENE	BDL	50
FLUORENE	BDL	10
PHENANTHRENE	BDL	10
DIBENZO (A.H) ANTHRACENE	BDL	50
INDENO (1, 2, 3-CD) PYRENE	BDL	50
PYRENE	BDL	10
ETHANOL AMINE	BDL	100
HYDRAZINE	BDL	200

SURROGATE	%RECOVERY	LIMITS	
NITROBENZENE-d5	<u>77</u>	<u> </u>	114
2-FLUOROBIPHENYL	66	43 -	116
p-TERPHENYL-d14	82	<u> </u>	141
- PHENOL-d6	62	<u> 10</u> -	94
2-FLUOROPHENOL	71	21	100
2,4,6-TRIBROMOPHENOL	66	<u> 10</u> –	123

Notes and Definitions for this Report:

EXTRACTED	<u>02/07/99</u>	
DATE RUN	02/25/99	
ANALYST	TC	
INSTRUMENT	GC/MS	
FILE ID	59022526	
UNITS <u>u</u>	<u>1/L</u>	
METHOD	<u>EPA 625</u>	
BDL BELO	OW DETECTION	LIMIT





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TEST RESULTS BY SAMPLE

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Order # 99-02-060 03/16/99 09:22

Page 29

Sample Description: OUTFALL 00C 02/01/99 Lab No: 35A Test Description: PCB/PESTICIDES EPA 608 Method: 608 Category: AQUEOUS Collected: 02/01/99

Test Code: 608

PARAMETER		RESULT	LIMIT
PARAMETER ALDRIN ALPHA-BHC BETA-BHC DELTA-BHC GAMMA-BHC CHLORDANE 4,4-DDT 4,4-DDD DIELDRIN ALPHA END BETA ENDO ENDOSULFA ENDRIN AL HEPTACHLC PCB-1016 PCB-1232 PCB-1242	OSULFAN SULFAN N SULFATE DEHYDE DR DR EPOXIDE	RESULT BDL BDL BDL BDL BDL BDL BDL BDL BDL BD	LIMIT 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.020 0.030 0.10 0.10 0.10 0.10 0.10
PCB-1242 PCB-1248 PCB-1254 PCB-1254 PCB-1260		BDL BDL BDL BDL BDL BDL	
TOXAPHEN			

CITEDOCATE	%RECOVERY	LIMITS	
SURROGAIL	93	70 -	130
DBC (SURROGATE, * RECOVERI)	92	70 -	130
2,4,5,6-TCX(SURROGATE & REC.)	<u> </u>		

Notes and Definitions for this Report:

EXTRACTED 02/06/99 DATE RUN 02/09/99 ANALYST JW INSTRUMENT GC FILE ID <u>A020915</u> UNITS <u>uq/L</u>

Committed to Quality Since 1958



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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Page 30

Sample Description: OUTFALL 00C Collected: 02/01/99

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02/01/99 Lab No: 35A Test Description: PCB/PESTICIDES EPA 608 Method: 608 Category: AQUEOUS

Test Code: 608

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METHOD _EPA 608 BDL BELOW DETECTION LIMIT



Belmonte Park Environmental Laboratories

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Order # 99-02-060 03/16/99 09:22

TEST RESULTS BY SAMPLE

Sample Description: OUTFALL 00C 02/01/99 Lab No: 45A Test Description: Triaryl Phosphate Sub-Out Method: Special Test Test Code: 8270_U Collected: 02/01/99 Category: AQUEOUS

PARAMETER			RESULT	LIMIT
TRIPHENYL	PHOSPHATE	ESTER	BDL	<u>5</u>
TRICRESYL	PHOSPHATE	ESTER	BDL	

•			
SURROGATE	%RECOVERY	LIMITS	
NITROBENZENE-D5	63	<u> </u>	114
2-FLUOROBIPHENYL	70	43 -	116
D-TERPHENYL-d14	100	33 -	141
PHENOL-d6	25	10 -	94
2-FLUOROPHENOL	38	21 -	100
2,4,6-TRIBROMOPHENOL	83	10 -	123

Notes and Definitions for this Report:

EXTRACTED 02/08/99
DATE RUN <u>02/11/99</u>
ANALYST <u>JAT</u>
INSTRUMENT <u>SATURN</u>
FILE ID0206503W
UNITS ug/L
METHOD <u>8270</u>
BDL BELOW DETECTION LIMIT

Page 31

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Facility name:	NPDES Permit number:	Outfall Number:
Donald C. Cook Nuclear Plant	MI0005827	001

Addendum to NPDES Renewal Application Section III.B.10 Toxic Pollutant Reasonable Potential Effluent Data

Sampling results indicate the presence of toxic pollutants in the Cook Nuclear Plant discharges as follows:

<u>Strontium</u> was detected in Outfall 001 (Unit 1 Non-Contact Cooling Water Discharge). There are <u>no plant processes</u> that use strontium. Strontium is a trace element (21st among the elements in the earth's crust) usually associated with calcium and barium minerals in veins in limestone. The chief use of strontium is in fireworks, red signal flares, or on tracer bullets. Therefore, we do not believe that there is reasonable potential for strontium to be present in these discharges as a result of plant operations. We believe that strontium is present in the intake. Michigan Department of Environmental Quality-Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

FACILITY NAME NPDES PERMIT NUMBER OUTFALL NUMBER 002 002 9. WATER TREATMENT ADDITIVES Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to conditionate the water Approvals of water treatment additives are authorized by the DEQ under separate correspondence. The issuance of an NPDES permit does constitute approval of the water treatment additives that are included in this application. A Are there water treatment additives in the discharge from this facility? No, proceed to item 4 Yes. Have these water treatment additives been previously approved? No, continue with C below Yes. Yes. Have these water treatment additives that are or may be discharged from the facility. Applicants must submit the information listed in C. 1-8 m updated if it has changed since the previous approval C. Submit a list of water treatment additives that are or may be discharged from the facility. Applicants must submit the information listed below additive 1. The water treatment additive discharge concentration. 3. The discharge frequency (i.e., number of hours per day, week, etc.) 4. The water treatment additive is to be discharged from 5. The type of removal treatment, if any, that the water treatment additive receives prior to discharge. 6. The water treatment additive for one other North American freshwater planktonic crustacean (either Cerodaphina sp , or Simocephalus sp i	or
Donald C Cook Nuclear Plant MI0005827 002 9. WATER TREATMENT ADDITIVES Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition treat the water Approvals of water treatment additives are authorized by the DEQ under separate correspondence The issuance of an NPDES permit does constitute approval of the water treatment additives that are included in this application. A Are there water treatment additives been previously approved? No, proceed to item 4 Yes. B Have these water treatment additives been previously approved? No, continue with C below Yes Submit a list of the previously approved water treatment additives and the date they were approved. The information listed in C. 1-8 m updated if it has changed since the previous approval C. Submit a list of water treatment additives that are or may be discharged from the facility. Applicants must submit the information listed below additive 1. The water treatment additive Material Safety Data Sheet The proposed water treatment additive is to be discharge from 2. The proposed water treatment additive is to be discharged from 5 3. The discharge frequency (i.e., number of hours per day, week, etc.) 4 4. The water treatment additive is to be discharged from 5 5. The type of removal treatment additive is to be discharged from 5 6. The water treatment additive for one other	or
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8 The results of a toxicity test for one other North Amencan freshwater aquatic species (other than a planktonic crustacean) that meets a min requirement of Rule 323 1057(2)(a) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour l)
a rainbow trout, bluegill, or fathead minnow	ium 250 for
The required toxicity information (described in items 7 and 8 above) is currently available in the SWQD files for the water treatment additives I on the DEQ's Internet page http://www.deq state.mi.us/swq/gleas/docs/wta/WTAlist.doc If you intend to use one of the water treatment additives additives on this list, only the information in items 1 through 6 above needs to be submitted to the SWQD.	ted ent
Note: The availability of toxicity information for a water treatment additive does not constitute approval to discharge the water treatment additive	
10 WHOLE EFFLUENT TOXICITY TESTS	
Have any acute or chronic WET tests been conducted on any discharges or receiving water in relation to facility discharges within the last three	ears?
If yes, identify the tests and summarize the results below unless the test has been submitted to the department in the last 5 years.	
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Michigan Department of Environmental Quality-Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater B. Outfall Information

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PLEASE TYPE OR PRINT

FACILITY NAME	NPDES or COC PERMIT NUMBER	Outfall Number	
Donald C. Cook Nuclear Plant	M10005827	002	
9 WATER TREATMENT ADDITIVES			
Water Treatment Additive	Approval Date		
Sodium Hypochlorite	5/23/00 NPDES Permit approval 9/28/95	·	
Betz CT-1300 Formerly called Betz CT-2	5/23/00, 2/28/02, 9/13/94, NPDES Permit appr	oval 9/28/95	
Betz CT-4	5/23/00, NPDES Permit approval 9/28/95		
Calgon H-130M	8/16/95, 5/23/00		
Calgon EVAC	8/8/00		
Nalco Macrotrol 9380	8/16/95, 5/23/00, 2/28/02		
Nalco Macrotrol 9210	8/16/95, 5/23/00, 2/28/02		
Nalco TRASAR 23299	5/23/00, 9/17/96		
Fluorescein Dye	9/21/98		
Bentonite Clay	5/23/2000, NPDES Permit approval 9/28/95		
Betz Ferroquest FQ LP 7200 (Formerly Call Betz Depositrol 855D)	11/14/94, 5/23/00, 9/17/96, NPDES Permit app	roval 9/28/95	
Sodium Tetraborate (Borax)	5/23/00		
SF6 (Sulphur hexafluonde gas)	NPDES Permit approval 9/28/95		
Betz Corrshield NT 4205 (Formerly Powerline 3231)	6/23/99, 9/17/96	· - · · · · · · · · · · · · · · · · · ·	
Calgon LCS-60	6/23/99, NPDES Permit approval 9/28/95		
Betz Corrshield NT4201	5/17/02		
Betz Corrshield NT 2403	9/18/02		
Spectrus NX 1105 (Formerly Betz Biotrol 107)	6/23/99, 5/23/00		
Calgon H-300	6/23/99, 5/23/00		
Betz AZ 8103 (Formerly Betz Copper-Trol Cu1	12/18/95, 6/23/99, 5/23/00		
Betz 3610	6/23/99		
Betz MD-4103	3/26/02		
Nalco 22199	9/17/96		

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Section III.B Outfall 003

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Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

ASE	TYPE OR PRINT		<u></u>		DES PERMIT	NUMBER	OU	TFALL NUMBER							
ILITY	NAME Donald C. Cook	k Nuclear F	Plant	MI	0005827		00	3							
Ουτ	FALL INFORMATION (se	e page 25	for instruction on comp	letion of this	page)										
	Watershed			<u></u>											
A	Lower St. Joseph				· · ·		<u>,,</u>								
В.	Lake Michigan														
С	County				Township										
0.	Bernen	1/4		Section		Town	Rang	je							
D.	SW	NW		06	·	06S	19W								
F	Latitude	_			Longitude										
с.	41 58' 30"				86 34 30										
F.	Type of Wastewater Disc	charged (C	Check all that apply to th	his outfall)											
	Contact Cooling		Sanitary Wastewa	ater	🔲 Groun	dwater Cleanup	🔀 Storr	n Water (regulated)							
	Noncontact Cooling		🛛 Process Wastewa	ater	🔲 Hydro:	static Pressure Test	Storr	n Water (not regulat							
	Storm water subject	to effluent (nuidelines (indicate un	der which ca	tegory) <u>423</u>	-Steam Electric									
				ofMactowate	or" in appendix	N N		Storm water subject to effluent guidelines (indicate under which category)							
	Other – specify (see "Table 8 - Other Common Types of Wastewater" in appendix)														
		- I able 8 - (Other Common Types	UI VVASIEWAI		/									
J G.	What is the maximum Fa	acility Desi(other Common Types of gn Flow Rate. 2074	MGD butfall Sea	sonal Discharg	iers	MGY Co MGD Co	ntinue with Item H.							
J G. H.	What is the maximum Fa What is the maximum di Seasonal Discharge	acility Designscharge flo	gn Flow Rate. <u>2074</u> w authorized for this o	MGD putfall Sea: Con	sonal Discharg tinuous Discha	ers Irgers <u>*</u> ed below	MGY Co MGD Co	ontinue with Item H. ontinue with Item I							
J G. H.	What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period	acility Designscharge fic	gn Flow Rate. <u>2074</u> w authorized for this o th) and the volume disc	MGD putfall Sea: Con charged in the	sonal Discharg Innuous Discha	ers Irgers _ ed below Discharge Volume	MGY Co MGD Co	ontinue with Item H. ontinue with Item I Annual Total							
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Ј G. H.	What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period From From	acility Desi ischarge fic	gn Flow Rate. <u>2074</u> w authorized for this o th) and the volume disc Through Through	MGD butfall Seat Con charged in the	sonal Discharg tinuous Discha	ers Irgers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co	Annual Total							
Ј G. H.	What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period From From From	acility Desi ischarge fic	gn Flow Rate. <u>2074</u> w authorized for this o th) and the volume disc Through Through Through	MGD butfall Sea: Con charged in the	sonal Discharg tinuous Discha	ers irgers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co	Annual Total							
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Ј G. H.	What is the maximum Fa What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period From From From From Continuous Discharge How often is there a dis Batch dischargers mu	acility Desi ischarge fic ds (by mon scharge from ischarge from	gn Flow Rate. <u>2074</u> w authonzed for this o th) and the volume disc Through Through Through Through Through	MGD putfall Seat Con charged in the charged in the verage)?	sonal Discharg tinuous Discha e space provid 24 Hours/E tion:	ers Irgers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co	Annual Total							
Ј G. Н.	What is the maximum Fa What is the maximum fa What is the maximum di Seasonal Discharge List the discharge period From From From From Continuous Discharge How often is there a dis Batch dischargers mu	acility Desi ischarge flc ds (by mon charge fro ischarge fro ist provide	gn Flow Rate. <u>2074</u> w authorized for this o th) and the volume disc Through Through Through Through Through Through Through Through Through Through Through Through Through Through Through Through	MGD butfall Seat Con charged in the charged in the verage)? bnal informat	24 Hours/E	ers ergers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co	Annual Total							
Ј G. H.	What is the maximum Fa What is the maximum fa What is the maximum di Seasonal Discharge List the discharge period From From From From Continuous Discharge How often is there a disc Batch dischargers mu Is there effluent flow eq Batch Peak Flow Rate:	acility Desi ischarge flc ds (by mon scharge fron ist provide	gn Flow Rate. <u>2074</u> w authorized for this o th) and the volume disc Through Through Through Through Through Through Through Through Through Through Through Through Through Through	MGD butfall Seat Con charged in the charged in the verage)? bnal informat No Number	sonal Discharg tinuous Discha e space provid 24 Hours/E tion:	ers ergers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co ear	Annual Total							
Ј G. H.	What is the maximum Fa What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period From From From From Continuous Discharge How often is there a dis Batch dischargers mu Is there effluent flow eq Batch Peak Flow Rate:	acility Desi ischarge flc ds (by mon scharge fron ist provide jualization?	gn Flow Rate. <u>2074</u> w authorized for this o th) and the volume disc Through Through Through Through Through Through Through Through Through Through	MGD butfall Sea: Con charged in the charged in the verage)? bnal information Number	24 Hours/E tion:	ers ergers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co ear	Maximum							
Ј G. Н.	What is the maximum Fa What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period From From From From Continuous Discharge How often is there a dis Batch dischargers mu Is there effluent flow eq Batch Peak Flow Rate:	acility Desi acility Desi ischarge fic ds (by mon ds (by mon acharge fro ischarge fro ist provide jualization?	gn Flow Rate. <u>2074</u> w authonzed for this o th) and the volume disc Through Through Through Through Through Through Through Minimum	MGD putfall Seat Con charged in the verage)? pral informat No Number	sonal Discharg tinuous Dischar e space provid 24 Hours/E tion: of batches dis	ers Irgers <u>*</u> ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Charged per day: Average	MGY Co MGD Co	Maximum							
Ј G. Н.	What is the maximum Fa What is the maximum Fa What is the maximum di Seasonal Discharge List the discharge period From From From From Continuous Discharge How often is there a dis Batch dischargers mu Is there effluent flow eq Batch Peak Flow Rate:	acility Desi acility Desi ischarge fic ds (by mon scharge froi scharge froi ualization?	gn Flow Rate. <u>2074</u> w authonzed for this o th) and the volume disc Through Through Through Through Through Through Through Through Through	MGD putfall Sea: Con charged in the verage)? panal information Number	sonal Discharg Innuous Discharg e space provid	ers ergers ed below Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume Discharge Volume	MGY Co MGD Co ear	Maximum							

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

.

EAS	SE TYPE OR PRINT		
	ITY NAME	NPDES PERMIT NUMBER	OUTFALL NUMBER
	Donald C Cook Nuclear Plant	MI0005827	003
2. Pl Th th ar pr pc	ROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE his information is used to determine the applicable federal regulations is the type of facility. Page 7 of the appendix contains an abbreviated list opplication. For assistance call the Permits Section. All industries shall rocess. If the wastestream is not regulated under federal categorical st openation to be present in the discharge. To submit additional information	for this discharge. The information required to be t of various industries and the types of information I provide the name of each process and the SIC o landards, the applicant shall report all pollutants who is see page in, item 8.	eported is dependent on each shall report in this r the NAICS code for the nich have the reasonable
PI A.	ROCESS INFORMATION . Name of the process contributing to the discharge ¹ 00A		
В.	SIC or NAICS code. 4911		
с	Describe the process and provide measures of production (see the in Generator Blowdown 1 MGD maximum flow 2247 MWE total plant e	nstructions to determine the appropriate information electrical generation.	i to be reported): Steam
PF	ROCESS INFORMATION Name of the process contributing to the discharge. <u>00B</u>		
В.	SIC or NAICS code 4911		
C.	Describe the process and provide measures of production (see the in Generator Blowdown 1 MGD maximum flow 2247 MWE total plant e	structions to determine the appropriate information electrical generation	to be reported): Steam
PF A.	ROCESS INFORMATION Name of the process contributing to the discharge <u>00C</u>		
В.	SIC or NAICS code: 4911		χ.
С	Describe the process and provide measures of production (see the in heating boiler blowdown. 0 043 MGD maximum flow. 2247 MWE tot	structions to determine the appropriate information al plant electrical generation	to be reported): Plant
PR A.	ROCESS INFORMATION Name of the process contributing to the discharge: <u>00G</u>		
В.	SIC or NAICS code: 4911		
С	Describe the process and provide measures of production (see the in- osmosis reject stream 0.366 MGD maximum flow. 2247 MWE total pl	structions to determine the appropriate information lant electrical generation.	to be reported): Reverse
PR A.	COCESS INFORMATION Name of the process contributing to the discharge 00H		
В.	SIC or NAICS code: 4911		
c.	Describe the process and provide moscures of productor (see the		
U.	Miscellaneous equipment drains and processes. Maximum flow is 5.2 emergency purposes only.	structions to determine the appropriate information 2 MGD. 2247 MWE total plant electrical generation	to be reported): . This Outfall is used for

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

AC	LITY NAME Docald C. Cook Nuclear Plant	NPDES PERMIT NUMBER	OUTFALL NUMBER
2.	PROCESS STREAMS CONTRIBUTING TO OUTFALL DISCHARGE This information is used to determine the applicable federal regulations the type of facility. Page 7 of the appendix contains an abbreviated lis application For assistance call the Permits Section All industries shal process. If the wastestream is not regulated under federal categorical s potential to be present in the discharge. To submit additional information	for this discharge The information required to be in it of various industries and the types of information Il provide the name of each process and the SIC o itandards, the applicant shall report all pollutants with in see page in, item 8	reported is dependent on a each shall report in this r the NAICS code for the hich have the reasonable
	PROCESS INFORMATION A Name of the process contributing to the discharge <u>00A</u>		
	 B SIC or NAICS code: <u>4911</u> C Describe the process and provide measures of production (see the i through non-contact cooling, maximum flow is 1500 MGD, 2247 MW 	nstructions to determine the appropriate information /E total plant electrical.	n to be reported) Once-
	 PROCESS INFORMATION A Name of the process contributing to the discharge. <u>Unit Two Coolini</u> B. SIC or NAICS code <u>4911</u> C. Describe the process and provide measures of production (see the inthrough non-contact cooling, maximum flow is 1820 MGD, 2247 MW 	g Water Instructions to determine the appropriate information /E total plant electrical	n to be reported) Once-
	PROCESS INFORMATION A Name of the process contributing to the discharge Misc minor storm	nwater drains	
	 B. SIC or NAICS code: <u>4911</u> C. Describe the process and provide measures of production (see the idrains from the screenhouse roof, small roadway gratings above the 	instructions to determine the appropriate informatio e forebay road	n to be reported) Roof
	 PROCESS INFORMATION A Name of the process contributing to the discharge <u>Deicing</u> B SIC or NAICS code: <u>4911</u> C. Describe the process and provide measures of production (see the for this outfall is not monitored separately from outfalls 001 and 002 	instructions to determine the appropriate informatio	n to be reported) The flow
-+	PROCESS INFORMATION A Name of the process contributing to the discharge: B. SIC or NAICS code: C. Describe the process and provide measures of production (see the	instructions to determine the appropriate informatic	on to be reported)

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

NSTRUCTIONS FOR COMPLETING SECTION III, ITEM B.3.

In accordance with 40 CFR 122.21, all applicants must report CBOD₅, Chemical Oxygen Demand, Total Organic Carbon, Total Suspended Solids, Ammonia as N, Temperature (both summer and winter), and pH. The applicant may, however, request that reporting of data for one or more of these required parameters be waived. Such request must be supported by adequate rationale. The request shall be included as an attachment to this application.

Report available discharge data for the parameters listed. Actual data shall be provided for existing discharges and expected or estimated data provided for proposed discharges. Please include an explanation if "Pollution Prevention" is expected to provide reduction of pollutants. See Page 8 of the appendix for a list of specific parameters for which data must be provided for specific types of discharges (e g , noncontact cooling waters, gasoline groundwater cleanups, etc). For assistance in determining the appropriate parameters to report, call the Permits Section.

If data are available for other parameters not listed in Section III B 3, the applicant shall report these data in the blank spaces provided or attach the information to this application on 81/2" x 11" paper

Report all data in the units provided and for the sample types specified in the table. If more than one option is available, check the appropriate box. The units are as follows: $\mu g/l = micrograms$ per liter, mg/l = milligrams per liter, $^{\circ}F =$ degrees Fahrenheit, $^{\circ}C =$ degrees Celsius. See page ii number 5 for analytical requirements.

To analyze for pH, temperature, total residual chlorine, oil and grease, and fecal coliform use **Grab Samples** unless other frequency-sample type analyses are available. To analyze for total BOD₅, total phosphorus, COD, TOC, ammonia nitrogen and total suspended solids use **24-hour composite samples** unless other frequency-sample type analyses are available.

For two or more substantially identical outfalls, permission may be requested from the appropriate district office to sample and analyze on, one outfall and submit the results of the analysis for other substantially identical outfalls. If the request is granted by the district office, on a separate sheet attached to the application form, identify which outfall was sampled and describe why the outfalls which were not sampled are substantially identical to the outfall which was sampled. See pages ii and iii for sampling definitions, including "maximum daily concentration", and "maximum monthly concentration".

REPORTING OF INTAKE DATA

Applicants are required to report intake water data when they are attempting to demonstrate eligibility for "net" effluent limitations for one or more pollutants. A "net" effluent limitation is determined by subtracting the average level of the pollutant(s) present in the intake waters remaining after treatment which is not removed by the treatment system. NPDES regulations allow net limitations only in certain circumstances (see 40 CFR Part 122.45(g)). To demonstrate eligibility, report the average concentration and/or mass of the results of the analyses on the intake water. If the intake water is treated prior to use, report the intake concentrations and/or mass after treatment. In addition to the analytical results, the following information shall be submitted for each parameter:

- a) A statement that the intake water is drawn from the body of water into which the discharge is made. If the discharge is not to the same body of water from which the water is withdrawn, the facility is not eligible for net limitations.
- b) A statement of the extent to which the level of the pollutant in the intake water is reduced by treatment of the wastewater. Limitations for the net removal of pollutants are adjusted only to the extent that the pollutant is not removed.
- c) When applicable (for example, when the pollutant represents a class of compounds, e.g., BOD₅, TSS, etc.), a demonstration of the extent to which the pollutants in the intake vary physically, chemically and biologically from the pollutants contained in the discharge. Limitations are adjusted only to the extent that the concentrations of the intake pollutants vary from the discharged pollutants.

Note: Applicants for groundwater remediation discharges should also report the intake characteristics of contaminated groundwater

NPDES Permit MI0005827

REPLY TO

PLAINWELL DISTRICT OFFICE 1342 SR 89 W STE B PLAINWELL MI 49080-1915

STATE OF MICHIGAN



JOHN ENGLER, Governor DEPARTMENT OF ENVIRONMENTAL QUALITY "Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET. www.deq.state.mi.us RUSSELL J. HARDING, Director

January 28, 1999

Mr. John P. Carlson Environmental Compliance Manager Cook Nuclear Plant One Cook Place Bridgman, Michigan 49106

Dear Mr. Carlson:

.*

SUBJECT: Application for Renewal of NPDES Permit No. MI0005827

We have reviewed the information provided in your letter of January 25, 1999. In that letter you request that representative outfalls be used to characterize effluent characteristics for similar outfalls. We approve your request as follows:

1. Effluent from Outfall 001 will be considered representative of outfalls 001, 002, and 003.

2. Effluent from Outfall 00B will be considered representative of outfalls 00A and 00B.

Please feel free to contact me if you have any questions.

Sincerely, Gregory A. Danneffel

Plainwell District Office Surface Water Quality Division 616-692-6968

cc: Mr. Blair Zordell, Cook Nuclear Plant Mr. Dan Dell, Permits Section, SWQD Ms. Sylvia Heaton, GLEAS, SWQD


American Electric Power Cook Nuclear Plant One Cook Place Brdgman, MI 49106 616 465 5901

> AMERICAN ELECTRIC POWER

January 25, 1999

Dear Mr. Morley:

Subject: NPDES Permit No. MI0005827 Application

We are currently preparing the Wastewater Discharge Permit Application to renew our current NPDES operating permit. As noted in Section III - Industrial and Commercial Wastewater, Part B. Outfall Information Item 6, paragraph 5 contains instructions to request permission to use a single sample for similar outfalls for application purposes.

We request that Outfall 001 be used as a representative sample for Outfalls 002 (Unit Two Noncontact Cooling Water) and Outfall 003 (De-icing Mode) for application use only. Outfalls 002 and 003 are substantially identical to Outfall 001. The source of these Outfalls is Lake Michigan; similar waste streams enter each Outfall prior to discharge.

In addition, we are requesting Outfall 00B (Unit Two Steam Generator Blowdown) to be used as a representative sample for Outfall 00A (Unit One Steam Generator Blowdown). Outfall 00A and Outfall 00B are substantially identical discharges, with the exception that Outfall 00A originates from the Unit One Steam Generators, and Outfall 00B originates from the Unit Two Steam Generators.

If you have any questions, please contact me at (616) 465-5901, ext. 1153.

Sincerely,

John P. Carlson Environmental Compliance Manager

/tlm

c: Greg Danneffel - MDEQ Plainwell
Sylvia Heaton - MDEQ Lansing

Page Two Mr. Morley January 25, 1999

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this and all attached documents, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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D. E. Cooper Plant Manager

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

-

LEASE TYPE OR PRINT					
ACILITY NAME Donald C. Cook Nuclear Plant	NPDES PERMIT N MI0005827	OUTFAI 003	OUTFALL NUMBER		
3. WASTEWATER CHARACTERISTICS - CONVENTION	NAL POLLUTANTS	- Instructions for co	mpleting this page a	re on the facing pag	je.
Check this box if additional information is included	as an attachment.	To submit additional	I information see pag	ge ii, item 8.	
Parameter	Maximum Daily Concentration	Maximum Monthly Concentration	Units	Number of Analyses	Sample Type
Biochemical Oxygen Demand - five day (BOD₅)	•	*	mg/l	•	Grab 24 Hr Comp
COD (Chemical oxygen demand)	•	*	mg/l	*	Grab
TOC (Total organic carbon)	*	*	mg/l	*	Grab
Ammonia Nitrogen (as N)	•	*	mg/l	*	Grab 24 Hr Comp
Total Suspended Solids	*	*	mg/l	*	Grab
Total Dissolved Solids	•	*	mg/i	•	Grab
Total Phosphorus (as P)	*	*	mg/l	*	Grab
Fecal Coliform Bacteria (report geometric means)	maximum-7day *	+	counts/100ml	*	Grab
stal Residual Chlorine	•	•	mg/l μg/l	÷	Grab
Dissolved Oxygen	minimum daily *	Do Not Use	mg/l	•	Grab 🔍
pH (report maximum and minimum of individual samples)	ការការការកា *	maximum *	standard units	+	Grab 24 Hr Comp
Temperature, Summer	*	*	୲୶୲ୖ୰	•	Grab 24 Hr Comp
Temperature, Winter	•	*	_ ୩୮ _ ୯୦	•	Grab 24 Hr Comp
Oil & Grease	*	÷	mg/l	+	Grab
					Grab 24 Hr Comp
					Grab 24 Hr Comp
* Water discharged from Outfall 003					Grab 24 Hr Comp
is the same as Outfall 001 and 002					Grab 24 Hr Comp
Permission has been granted to use the					Grab 24 Hr Comp
Screening data from Outfall 001 to					Grab
charactenze this discharge.					Grab
				<u> </u>	Grab
	J		<u> </u>	1	

Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

1

	CILITY NAME	NPDES PERMIT NUMBER	OUTFALL NUMBER
	Donald C. Cook Nuclear Plant	MI0005827	003
! .	PRIMARY INDUSTRY PRIORITY POLLUTANT INFORM Existing primary industries that discharge process waster identified in Table 2 (as determined from Table 1, <u>Testin</u> identified in Table 3. Existing primary industries must a 2 known or believed to be present in facility effluent	MATION ewater must submit the results of at least one effluent <u>ng Requirements for Organic Toxic Pollutants by Inc</u> Iso provide the results of at least one effluent analys	t analysis for <u>selected</u> organic pollutants <u>dustrial Category</u>), and all the pollutants is for any other chemical listed in Table
	In addition, submit the results of all other effluent analys	es performed within the last 5 years for any chemical	llisted in Tables 2 and 3
	New primary industries that propose to discharge proce Tables 2 and 3 expected to be present in facility effluent	ess wastewater must provide an estimated effluent t	concentration for any chemical listed in
5	DIOXIN AND FURAN CONGENER INFORMATION		1 (Ohma 0.0 5
	Existing industries that use or manufacture 2,3,5-trichle TP), 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropi trichlorophenol (TCP) or hexachlorophrene (HCP), or ke facility effluent, must submit the results of at least one e dioxin and furan congeners must be conducted using El	orophenoxy acetic acid (2,4,5-T); 2- (2,3,5-trichlorophionate (Erbon), 0,0-dimethyl 0-(2,4,5-trichloropheny nows or has reason to believe that 2,3,7,8-Tetrachlor effluent analysis for the dioxin and furan congeners like PA Method 1613	ohenoxy) propanoic acid, (Silvex, 2,3,5 yl) phosphorothionate (Ronnel); 2,4,5 rodibenzo-p-dioxin (TCDD) is present il sted in Table 6 All effluent analyses fo
	In addition, submit the results of all other effluent analy	ses performed within the last 5 years for any dioxin a	nd furan congener listed in Table 6
	New industries that expect to use or manufacture 2,3, 2,3,5-TP), 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichlorop trichlorophenol (TCP) or hexachlorophrene (HCP), or k facility effluent must provide estimated effluent concent	5-trichlorophenoxy acetic acid (2,4,5-T), 2- (2,3,5-tr propionate (Erbon), 0,0-dimethyl 0-(2,4,5-trichlorophe nows or has reason to believe that 2,3,7,8-Tetrachlo rations for the dioxin and furan congeners listed in Ta	nchlorophenoxy) propanoic acid (Silvex enyl) phosphorothionate (Ronnel), 2,4,5 rodibenzo-p-dioxin (TCDD) is present i able 6.
5	OTHER INDUSTRY PRIORITY POLLUTANT INFORM Existing secondary industries, or existing primary indus , analysis for any chemical listed in Tables 2 and 3 known	ATION stries that discharge non-process wastewater, must s n or believed to be present in facility effluent	submit the results of at least one effluer
	In addition, submit the results of all other effluent analyst	ses performed within the last 5 years for any chemica	I listed in Tables 2 and 3
	New secondary industries, or new primary industries concentration for any chemical listed in Tables 2 and 3	s that propose to discharge non-process wastewat expected to be present in facility effluent	er, must provide an estimated effluer
7.	ADDITIONAL TOXIC AND OTHER POLLUTANT INFO All existing industries, regardless of discharge type, m believed to be present in facility effluent, and a measur be present in facility effluent In addition, submit the Tables 4 and 5	RMATION nust provide the results of at least one analyses for red or estimated effluent concentration for any chemic results of any effluent analysis performed within the	any chemical listed in Table 4 known o cal listed in Table 5 known or believed f e last 5 years for any chemical listed i
	New industries, regardless of discharge type, must probe in facility effluent	vide an estimated effluent concentration for any chen	nical listed in Tables 4 and 5 expected
8	INJURIOUS CHEMICALS NOT PREVIOUSLY REPOR New or existing industries, regardless of discharge ty injurious chemicals known or believed to be present effluent data that are less than 5 years old for these ch	TED pe, must provide a measured or estimated effluent in facility effluent that have not been previously in emicals must be reported.	concentration for any toxic or otherwis dentified in this application. Quantitativ
	NOTE: All effluent data submitted in response to quest see page II, item 8 If the effluent concentrations a completed for each data row: Parameter, CAS No, C See page II, number 5 for analytical test requirements.	tions 4, 5, 6, 7, and 8 above should be recorded on p re estimated, place an E in the "Analytical Method Concentration(s), Sample Type, Analytical Method, C	age 31. To submit additional information column The following fields must b Quantification Level and Detection Level

Michigan Department of Enumental Quality- Water Division WASTEWATER DISCHARGE PERMIT APPLICATION SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

FACILITY NAME					NP	DES PERMI	T NUMBER			OUTFALL N	UMBER			()	,
Donald C. Cook Nucl	ear Plant				МІС	005827				003					
SAMPL	E DATE 🗲											Part and a fee	بالمثلثة المتحدثة المثلية. بالمركزة المريدة المريد	2 2 700 0 0 0 2 2 4 4 4 5 1 1	ا به مح ملسوا این موج و مرد . مسرور می و الور موج و مرد . مراکز ایر اکر این این مسلوم مد
PARAMETER	CAS: No.	:- Conc. :- (ug/l)	Conc.	ia: Conc ‴(ug/l) ™		⊈ Conc. ≦ 2 (ug/l)	~ Conc.~ ^{介:} (ug/l) ~	₩ Conc. ↔ ₩ (ug/l) ±	Conc.≠ (ug/l)	Conc. (ug/l)	Conc.	Sample	Analytic (ALL DL
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Michigan Department of Environmental Quality- Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION

SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

	PLEASE TYPE OR PRINT								
FAC	ILITY NAME Donald C Cook Nuclear Plant	NPDES PERMIT NUMBER MI0005827	OUTFALL NUMBER 003						
9	WATER TREATMENT ADDITIVES Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water.								
	Approvals of water treatment additives are authorized by the DEQ under separate correspondence. The issuance of an NPDES permit does not constitute approval of the water treatment additives that are included in this application								
	A. Are there water treatment additives in the discharge from this facility?								
	No, proceed to item 4.								
	TYes	-	•						
	B. Have these water treatment additives been previously approved?								
	No, continue with C below.								
	Yes Submit a list of the previously approved water treatment add updated if it has changed since the previous approval.	itives and the date they were approved. The infor	mation listed in C. 1-8 must be						
	C. Submit a list of water treatment additives that are or may be discharadditive	rged from the facility Applicants must submit the	information listed below for each						
	1. The water treatment additive Material Safety Data Sheet.								
	2. The proposed water treatment additive discharge concentration								
	3. The discharge frequency (i.e., number of hours per day, week, et	c).							
	4. The outfall the water treatment additive is to be discharged from.								
	5 The type of removal treatment, if any, that the water treatment ad	ditive receives prior to discharge.							
	6 The water treatment additive function (i.e., microbiocide, floccular	nt, etc.)							
	7. A 48-hour LC50 or EC50 for a North American freshwater plankto	onic crustacean (either Ceriodaphnia sp , Daphnia	sp , or Simocephalus sp).						
	8 The results of a toxicity test for one other North American freshwarequirement of Rule 323.1057(2)(a) of the Water Quality Standard a rainbow trout, bluegill, or fathead minnow.	ater aquatic species (other than a planktonic crusta ds Examples of tests that would meet this required	acean) that meets a minimum ment include a 96-hour LC50 for						
	The required toxicity information (described in items 7 and 8 above) is on the DEQ's Internet page http://www.deq state.mi.us/swq/gleas additives on this list, only the information in items 1 through 6 above ne	s currently available in the SWQD files for the wa s/docs/wta/WTAlist.doc. If you intend to use eeds to be submitted to the SWQD	ter treatment additives listed one of the water treatment						
	Note: The availability of toxicity information for a water treatment addit	ive does not constitute approval to discharge the	water treatment additive.						
10.	WHOLE EFFLUENT TOXICITY TESTS								
	Have any acute or chronic WET tests been conducted on any discharg If yes, identify the tests and summarize the results below unless the te	ges or receiving water in relation to facility discharges st has been submitted to the department in the last	ges within the last three years? st 5 years						
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Michigan Department of Environmental Quality-Surface Water Quality Division WASTEWATER DISCHARGE PERMIT APPLICATION . . .

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SECTION III - Industrial and Commercial Wastewater

B. Outfall Information

PLEASE TYPE OR PRINT

FACILITY NAME	NPDES or COC PERMIT NUMBER	Outfall Number			
	10003827	003			
9. WATER TREATMENT ADDITIVES					
	I				
Water Treatment Additive	Approval Date				
Sodium Hypochlorite	5/23/00 NPDES Permit approval 9/28/95				
Betz CT-1300 Formerly called Betz CT-2	5/23/00, 2/28/02, 9/13/94, NPDES Permit approval 9/28/95				
Betz CT-4	5/23/00, NPDES Permit approval 9/28/95				
Calgon H-130M	8/16/95, 5/23/00	···· · · · · · ·			
Calgon EVAC	8/8/00				
Nalco Macrotrol 9380	8/16/95, 5/23/00, 2/28/02	· · · · · · · · · · · · · · · · · · ·			
Nalco Macrotrol 9210	8/16/95, 5/23/00, 2/28/02				
Nalco TRASAR 23299	5/23/00, 9/17/96				
Fluorescein Dye	9/21/98				
Bentonite Clay	5/23/2000, NPDES Permit approval 9/28/95	· · · · · · · · · · · · · · · · · · ·			
Betz Ferroquest FQ LP 7200 (Formerly Call Betz Depositrol 855D) 11/14/94, 5/23/00, 9/17/96, NPDES Permit approval 9/28/95					
Sodium Tetraborate (Borax) 5/23/00					
SF6 (Sulphur hexafluoride gas)	NPDES Permit approval 9/28/95				
Betz Corrshield NT 4205 (Formerly Powerline 3231)	4205 (Formerly Powerline 3231) 6/23/99, 9/17/96				
Calgon LCS-60 6/23/99, NPDES Permit approval 9/28/95					
Betz Corrshield NT4201	5/17/02				
Betz Corrshield NT 2403	9/18/02				
Spectrus NX 1105 (Formerly Betz Biotrol 107)	6/23/99, 5/23/00	· · · ·			
Calgon H-300	6/23/99, 5/23/00				
Betz AZ 8103 (Formerly Betz Copper-Trol Cu1	etz AZ 8103 (Formerly Betz Copper-Trol Cu1 12/18/95, 6/23/99, 5/23/00				
Betz 3610 6/23/99					
Betz MD-4103	3/26/02	······································			
Nalco 22199	9/17/96	····•			