TENNESSEE VALLEY AUTHORITY

KNOXVILLE, TENNESSEE 37902

MAR 3 | 1989

Mr. Garland P. Wiggins, Manager Industrial Facilities Section Division of Water Pollution Control Tennessee Department of Health and Environment Bureau of Environment TERRA Building 150 Ninth Avenue, North Nashville. Tennessee 37219-5404

Dear Mr. Wiggins:

WATTS BAR NUCLEAR PLANT (WBN) - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. TN0020168 - RENEWAL APPLICATION

Enclosed are two copies of Environmental Protection Agency forms 3510-1, 3510-2C, and 3510-2E to support our request for reissuance of the WBN NPDES permit. Also enclosed for your use are:

- site map:
- pictorial identification of outfalls; 0
- plant discharge diagram;
- description of the boron sources and discharges;
- list of chemicals added to each discharge; O
- description and analysis of the X-ray film processing waste: 0
- description of the raw water systems; 0
- description of a program to control microbiologically induced corrosion:
- summary of requested permit changes and justification; and 0
- reproduction of the current permit modified to reflect the proposed changes (Parts I, II, and III).

Please note that we have not submitted priority pollutant data for the Liquid Radwaste System/Outfall Serial Number 104 because the effluent from this source is discharged on a batch basis. We will be submitting these data as soon as the sampling and analysis are completed.

If you have any questions regarding the enclosed information, please call Abraham H. Loudermilk, Jr., at (615) 632-6656 in Knoxville.

Sincerely.

M. Paul \$dhmîerbach, Manager

Quality

Enclosures cc (Enclosures): See page 2

Mr. Garland P. Wiggins

cc (Enclosures):
 Mr. Bruce Barrett, Director
 Water Management Division
 U.S. Environmental Protection
 Agency, Region IV
 345 Courtland Street, NE.
 Atlanta, Georgia 30365

Mr. Philip L. Stewart, Manager Chattanooga Field Office Division of Water Pollution Control 2501 Milne Street Chattanooga, Tennessee 37406-3399

U.S. Nuclear Regulatory Commission Attention: Document Control Desk Washington, D.C. 20555

Ms. S. C. Black, Assistant Director for Projects TVA Projects Division U. S. Nuclear Regulatory Commission One White Flint, North 11555 Rockville Pike Rockville, Maryland 20852

Mr. Gary G. Zech, Assistant Director for Inspection Programs TVA Projects Division U.S. Nuclear Regulatory Commission NMBB3206 Washington, D.C. 20555 DOCKET NO. 50-390/391 WATTS BAR, 1/2 TVA

RENEWAL APPLICATION OF NPDES PERMIT NO. TN0020168

Rec'd. w/ltr. 3/31/89......8904140088

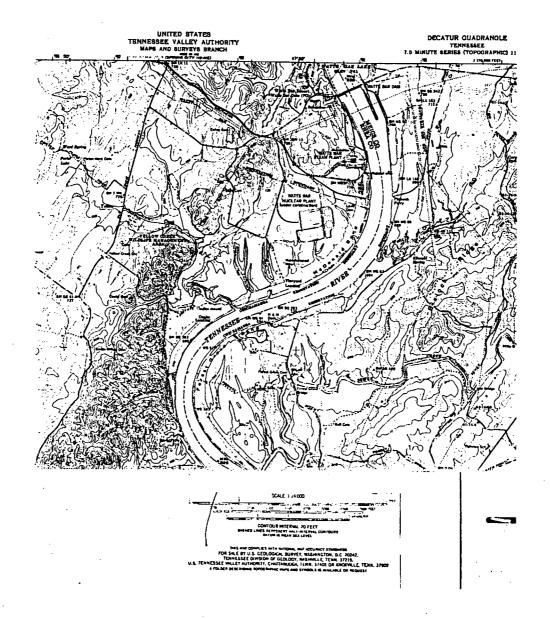
-NOTICE-

THE ATTACHED FILES ARE OFFICIAL RECORDS OF THE RECORDS & REPORTS MANAGEMENT BRANCH. THEY HAVE BEEN CHARGED TO YOU FOR A LIMITED TIME PERIOD AND MUST BE RETURNED TO THE RECORDS & ARCHIVES SERVICES SECTION P1–122 WHITE FLINT. PLEASE DO NOT SEND DOCUMENTS CHARGED OUT THROUGH THE MAIL. REMOVAL OF ANY PAGE(S) FROM DOCUMENT FOR REPRODUCTION MUST BE REFERRED TO FILE PERSONNEL.

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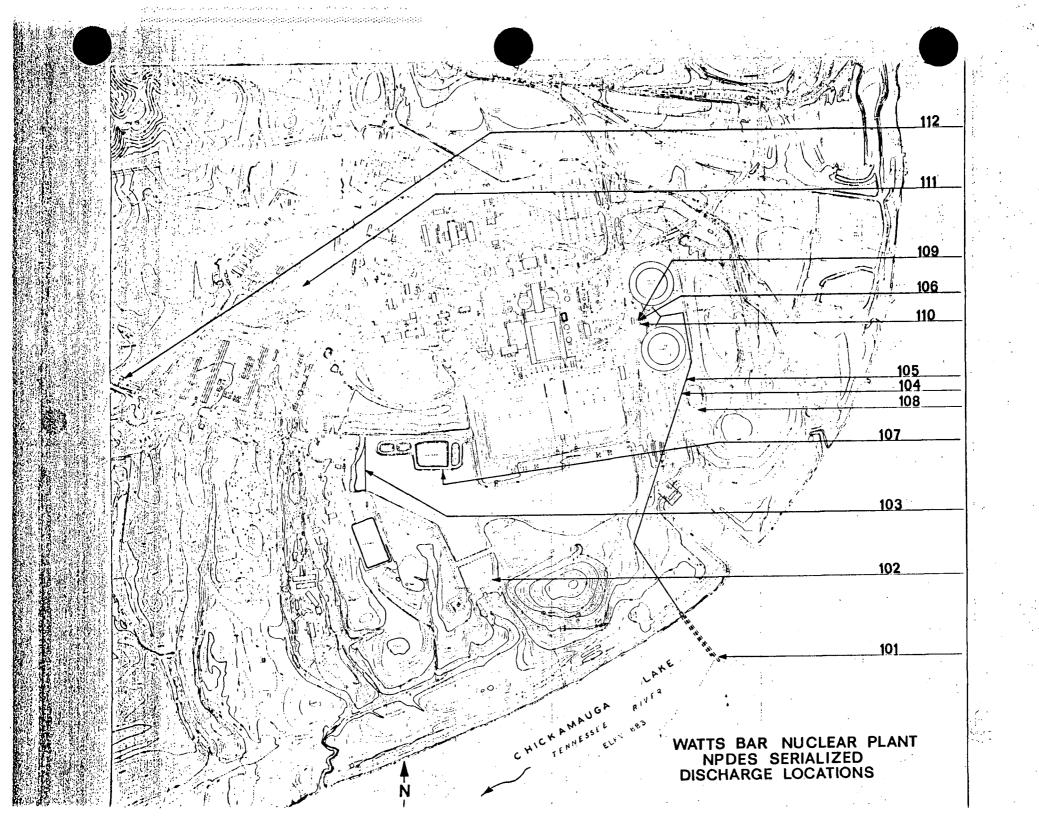
SITE MAP

WATTS BAR NUCLEAR PLANT

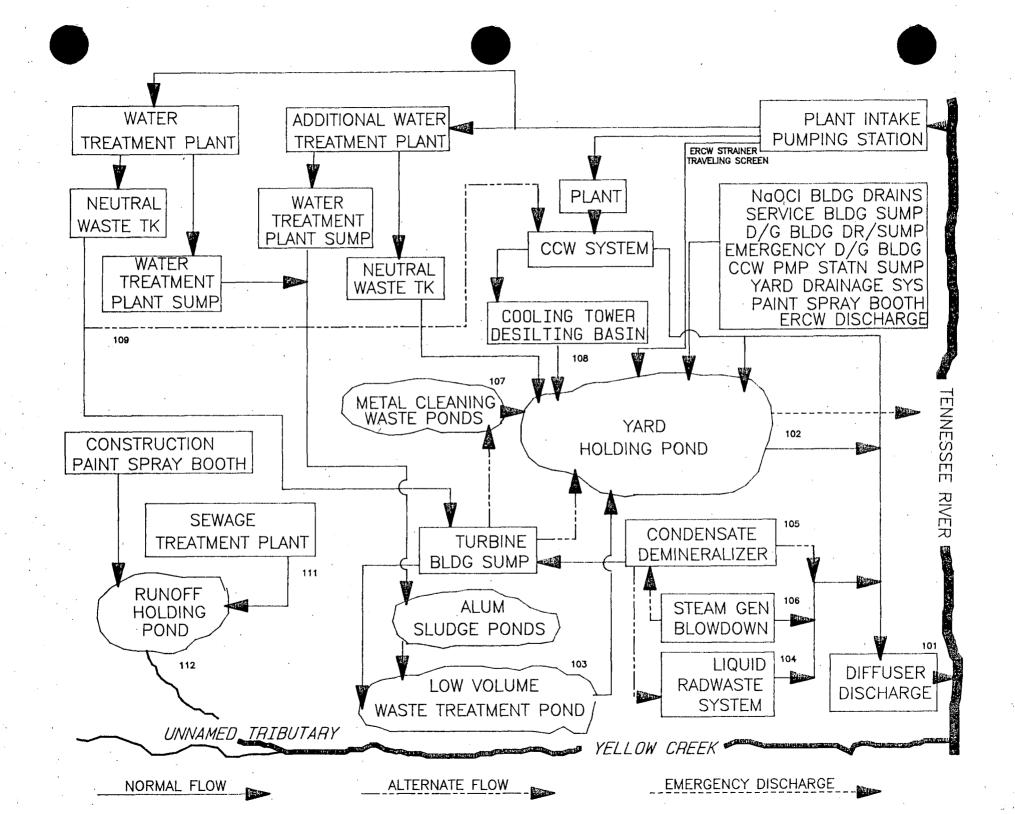


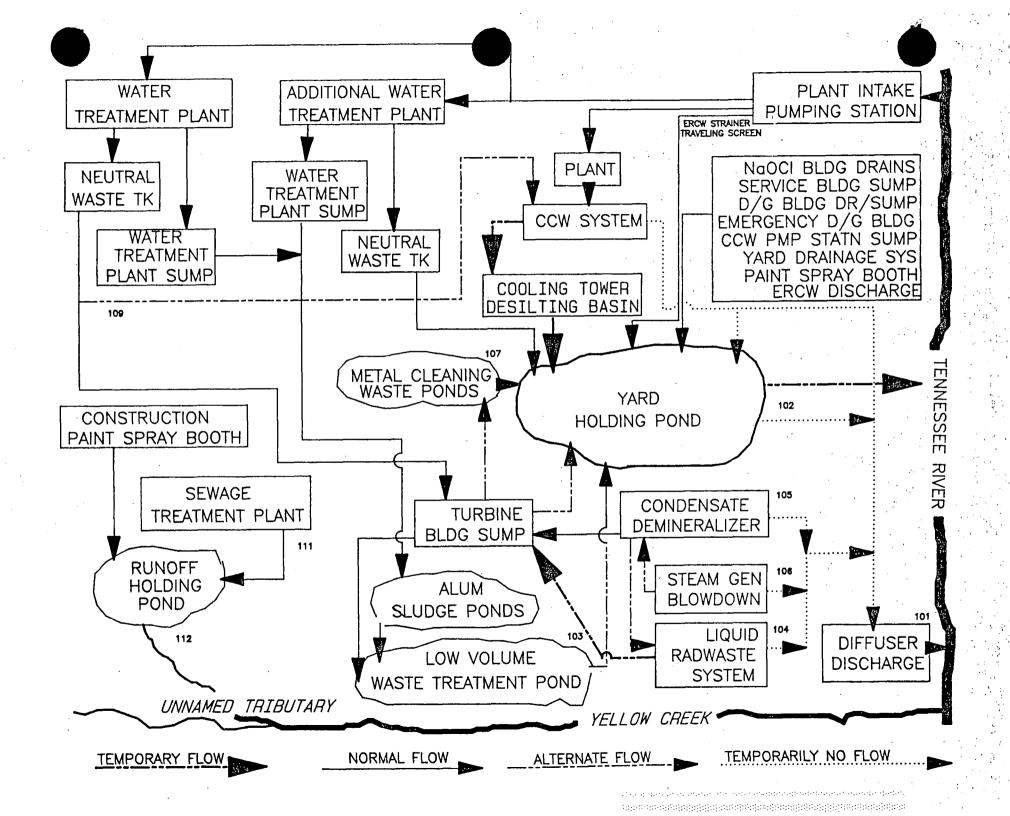
WATTS BAR NUCLEAR PLANT
Site Map

OUTFALL IDENTIFICATION
WATTS BAR NUCLEAR PLANT



PLANT DISCHARGE DIAGRAM
WATTS BAR NUCLEAR





EPA FORMS

EPA FORM 3510-1 EPA FORM 3510-2C EPA FORM 3510-2E

WATTS BAR NUCLEAR PLANT

, Onm	FORM									
u if I. warm Chann Shared B. D.	ERAL INFORM		FTN 002	0 1 6 8						
GENERAL (Read the "C	General Instructions"	before starting.)	1 2	UCTIONS						
I. EPA I.D. NUMBER			GENERAL INSTRI If a preprinted label has be it in the designated space. I ation carefully; if any of it through it and enter the c	Review the inform- is incorrect, cross						
FACILITY NAME	appropriate fill—in area belong the preprinted data is abserted to the label space list	appropriate fill—in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information								
V. MAILING ADDRESS PLEASE PLACE LABEL IN THIS SPACE that should appear), please proper fill—in area(s) below. complete and correct, you not										
VI. FACILITY VI. LOCATION	Items I, III, V, and VI (exc must be completed regardles items if no label has been pr									
			which this data is collected.							
II. POLLUTANT CHARACTERISTICS			darma to the EDA. If you are	war "var" to any						
INSTRUCTIONS: Complete A through J to determine we questions, you must submit this form and the supplement if the supplemental form is attached. If you answer "no" is excluded from permit requirements; see Section C of the	tal form listed in the to each question, y	e parenthesis following the que ou need not submit any of the	stion. Mark "X" in the box in se forms. You may answer "no	the third column " if your activity						
SPECIFIC QUESTIONS	MARK 'X'	SPECIFIC C		MARK X						
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)	•	include a concentrated	(either existing or proposed) snimal feeding operation or on facility which results in a U.S.? (FORM 2B)	X 20 21						
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	77		(other than those described will result in a discharge to M 2D)	X 25 26 27						
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		F. Do you or will you inject municipal effluent below taining, within one qui	et at this facility industrial or the lowermost stratum con- erter mile of the well bore, trinking water? (FORM 4)	X 31 32 33						
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid	X	cial processes such as m process, solution mining	t at this facility fluids for spe- ining of sulfur by the Frasch of minerals, in situ combus- covery of geothermal energy?	X						
hydrocarbons? (FORM 4) Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	X	J. Is this facility a propos NOT one of the 28 ind instructions and which we per year of any air pollus Air Act and may affect	ed stationary source which is ustrial categories listed in the will potentially emit 250 tons eant regulated under the Clean or be located in an attainment	X X						
		The state of the s								
IV. FACILITY CONTACT			1. 18. 19. 19. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18	er in the second						
A. NAME & TITLE (last, f	 	ENV QLT 6	. PHONE (area code & no.)	3						
V. FACILITY MAILING ADDRESS		At IA	4) 14 51 52 55							
A. STREET OR P.O	вох	I N G								
B. CITY OR TOWN		C.STATE D. ZIP CO	, -							
4 KNOXVILLE		T N 3 7 9 0	2	Nation of the second						
VI. FACILITY LOCATION A. STREET, ROUTE NO. OR OTHER	SPECIFIC IDENTIF	IER I	Carlot San	And the second second second						
5 P O B O X 8 O O										
15] 16 名名 B. COUNTY NAME		45		÷						
RHEA		70								
C. CITY OR TOWN		D.STATE E. ZIP CO	DE F. COUNTY CODE (if known)							
SPRING CITY		T N 3 7 3 8	1 52 - 54							

ONTINUED FROM THE FRONT					
III:SIC CODES (4-digit, in order of priority)				B. SECOND	7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
A FIRST	<u> </u>	ا ا	(specify)		:
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16	0.2	12/16	19.1	D. FOURTH	
C. THIRD		<u> </u>	(specify)		
(specify)	the visit of the contract of	7			
19	to the state of th	Te to	of the state of the first	in our landstand and the	nest the transfer for the state
III. OPERATOR INFORMATION	न्य अस्ति । स्वर्थन स्वर्थने स्वर्थने । स्वर्थने स्वर्थने । स्वर्थने स्वर्थने स्वर्थने स्वर्थने स्वर्थने स्वर्	· 100 100 100 100 100 100 100 100 100 10	designed and to assure a second	Water State of the Control of the Co	B. Is the name listed in
	A. NAME		11711	THE PROPERTY OF THE PROPERTY 	Item VIII-A also the owner?
TENNESSEE VALL	E'Y AUTH	ORITY	-		X YES NO
				 	66
16		annuar have if uc	ther" specify 1	D. PHONI	E (area code & no.)
C. STATUS OF OPERATOR (Enter the app.	fodoral or state	(specify)	mer, specify.		6 3 2 6 5 7 8
F = FEDERAL M = PUBLIC (other than S = STATE O = OTHER (specify)	F	(specify)		A 6 1 5	
P = PRIVATE	36			15 16 18	19 - 21 22 - 25
E. STREET O	R P.O. BOX			1 - 1 - 1 - 1	
<u> </u>			65		
F. CITY OR TOW	'N	G.:	STATE H. ZIP CO	DDE IX. INDIAN LAND	ted on Indian lands?
	· · · · · · · · · · · · · · · · · · ·	' ' '	. 11	<u> </u>	IX NO
				YES 52	. بن بن بن
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LEXISTING ENVIRONMENTAL PERMITS	ENGINEER (SANSKI)	等的地位的問題			And the state of t
A. NPDES (Discharges to Surface Water)		issions from Prop	osed Sources)		
	C T 1				
N T N O O 2 O 1 6 8	9 P	<u> </u>	30		
B. UIC (Underground Injection of Fluids)		OTHER (specify)			
	CTI	1111	1 7 7 7 7	(specify)	
	30 15 16 17 18	 	30		
C. RCRA (Hazardous Wastes)		OTHER (specify)			·
CITILITY III	<u> </u>	1111		(specify) see Attach	ment
R	9	 	30	see Accach	-
AP	30 15 16 17 11	500 088 045		ra en la compaña de la compaña	
	an of the area extend	ding to at least	one mile bevon	d property bounderies	. The map must show
treatment storage or disposal facilities, a	nd each well where	it injects natus	underground.	include all springs, riv	ers and other surface
water bodies in the map area. See instruction	ons for precise requir	ements.			
XII. NATURE OF BUSINESS (provide a brief des		हम्मा है कर क्षेत्र	4 Little Committee		the property of the first of the second
		onucloss f	ission and	associated one	erations
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		the face of the same	LANGER OF THE BASE	The strong property of the strong	The state of the s
XIII. CERTIFICATION (see instructions)	en in mercial to a to the thing of the				this application and all
I certify under penalty of law that I have	personally examine	d and am famil	iar with the info	ormation submitted in	uns application and all
attachments and that, based on my inquapplication, I believe that the information		ne immoriisteiv	' mesonosible lol	r uplammu ure mivi	igitori contamico in tino
application, I believe that the information false information, including the possibility	II IS True, accurate 8.	nu complete. I nment	aili awais tiidt	C. C. C. C. C. G. G. III CO. I. I	
				<u> </u>	C. DATE SIGNED
A. NAME & OFFICIAL TITLE (type or print)	į.	IGNATURE			1
M. Paul Schmierbach, Manager					
Environmental Quality	ſ				
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20 SEPA

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS Consolidated Permits Program

OUTFALL LOCATION

each outfall, list the letitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

SUTFALL	B. LATITUDE			C. L	ONGITUE	E.	D. RECEIVING WATER (name)				
(list)	1. DEG.	2. MIR.	35 36	1.080.	2. MIN.	3. sec.	D. RECEIVING WATER (name)				
101	35	35		84 4	47	9	Tennessee River				
					,						
112	35	36	04	84	48	11	Unnamed Tributary of Yellow Creek				
102	35	35	45	84	47	30	Unnamed Tributaty				
Emergenc	overf1	.ow									

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

- A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.
- B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUT-	2. OPERATION(S) CONTRIBUTI	NG FLOW	3. TREATMENT				
FALLNO (list)	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	LIST CODES FROM TABLE 2C-1			
	Diffuser Discharge which	20,000 gpm (min) Mixing by submerged multi-	4 A			
101	receives flow from the	80,000 gpm (max) port diffuser	1 0 .			
	following:	·					
_							
	1. Yard Hölding Pond		(See OSN 102)				
	(OSN 102)						
	2. Liquid Rad Waste Treatme	nt	(See OSN 104)				
	(OSN 104)		age of the transfer of the second of the				
	3. Condensate Demineralizer		(See OSN 105)				
	System (OSN 105) (A)						
	4. Steam Generator Blowdown		(See OSN 106)				
 	(OSN 106)						
	5. Condenser Circulating	35,500 gpm (ave) None				
	Water (CCW) which	40,000 gpm (max					
	receives flow from the						
	following:						
	A. Raw Cooling Water	28,000 gpm	Treated with Biocide	2 F			
	(RCW) System						
	B. Essential Raw Cool-	30,000 gpm	Treated with Biocide	2 F			
	ing Water (ERCW)						
	System						
	C. Neutral Waste Tank		(See OSN 109)				
	(A) (OSN 109) (Water						
	Treatment Plant)	n					

PORM 2C NPDES



APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS Consolidated Permits Program

DU	TF.	ΑL	Ŀ	LOCA	TION

				the receiving water

UTFALL	8. LATITUDE		C. Li	ONGITUC	E	D. DECENANC WATER (remail	
(list)	1. 000.	1. 1414.	3. SEC.	1. 044.	Z. MIN.	1. sec.	D. RECEIVING WATER (name)
	:						

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

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1. OUT-	2. OPERATION(S) CONTRIBUTI		3. TREATMENT				
(list)	8. OPERATION (list)	b. AVERAGE FLOW (include units)	a, DESCRIPTION	b. LIST CO TABL	DES FROM E 2C-1		
	Yard Holding Pond (OSN 102)	500 gpm (av	g) 35 Acre pond with	1	U		
102	which receives flow from the	40,000 gpm (max	sedimentation and oil				
	following:		skimming				
·							
	1. Low Volume Waste Treat-		(See OSN 103)				
	Pond (OSN 103)			:			
	2. Metal Cleaning Waste		(See OSN 107)				
-	Ponds (OSN 107)						
	3. Cooling Tower Desilting		(See OSN 108)				
!	Basin (OSN 108)		`				
, t	4. ERCW Discharge	30,000 gpm	Treated with Biocide	2	F		
	5. Diffuser Backflow	40,000 gpm (ma	x) None		·		
	6. Service Building Sump		Floor drain with oil skimming				
	7. Emergency D/G Bldg Sump		Floor drain with oil skimming	1	U		
	8. Diesel Gen Bldg Sump		Floor drain with oil skimming	1	Ŭ		
	9. NaOC1 Bldg Drains		Floor drain with dikes				
	10. ERCW Strainer Backwash	36,000 GPD	Treated with biocide	2	F		
	ll. Traveling Screen (IPS)		None				
	12. Neutral Waste Tk (addition	nal MWTP)	Neutralized regeneration	2	K		
	13. CCW Pump Station Sump		Leak collection w/oil skimmin	g			
	14. Paint Spray Booth	3,000 gal/yr		1	U		
	15. Yard Drainage System		None				
	16. Turbine Bldg Sump (A)	(1.5 MGD)	Floor and equipment drain				
			collection with oil skimming				

TN0020168

C SEPA

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

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UTFALL	B. LATITUDE		. C. LONGITUDE			D. RECEIVING WATER (name)	
(list)	1.084.	I, MIM.	1. 3 CC.	1.560.	2. MIN.	3. 1EC.	B. RECEIVING WATER (nume)
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1. OUT-	2. OPERATION(S) CONTRIBUT	NG FLOW	3. TREATMENT				
FALLNO (list)	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CO TABL	DES FROM E 2C-1		
	Low Volume Waste Treatment	0.5 MGD	Unlined Pond	1	0		
103	Pond which receives flow			1	. П .		
	from the following:				_		
	1. Turbine bldg station	(1.5 MGD)	Bldg drain w/oil skimmer				
	sump which contains						
	leakage, low volume wastes, and blowdown	·					
	2. Alum Sludge Ponds	(0.024 MGD)	Two ponds which provide	1	Π.		
	supernatant which		sedimentation and sludge	5	L		
	receives flow from the		thickening	5	Q		
	following:						
	A. Makeup Water Treat-		None				
	ment Plant Sump						
	B. Additional Makeup		None				
	Water Treatment						
	Plant Sump						
	3. Drum Dewatering		None				
		_			-		

OFFICIAL USE ONLY (effluent guidelines sub-categories)

2C SEPA

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS Consolidated Permits Program

为创造基础 (1980年)		

OUTFALL NUMBER	B. LATITUDE		C. LONGITUDE		•	D. RECEIVING WATER (name)	
(list)	1, 059.	z, MIN.	1. SEC.	1. 064.	Z. MIN.	3. 1EC.	
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1. OUT- FALL NO (list)	2. OPERATION(S) CONTRIBUTION	NG FLOW	3. TREATMENT		
FALLNO	s. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST COL TABLE	DES FROI 2C-1
	Liquid Radwaste System which	5.7 gpm	Ion exchange, filtration and	2	J `
104	receives flow from the		evaporation, as needed for	1	F
	following:		radioactive waste removal		
	1. Laundry and hot shower	(0.0003 MGD)	None		
	drains				
	2. Radioactive Floor Drains	(0.018 MGD)	None		
	and Sumps				•
	3. Chemical Drains	(0.1737 MGD)	None		
	4. System Leakage and	(0.018 MGD)	None		
	Blowdown				
	5. Condensate Demineralizer	(0.08 MGD)	Filtration	1	N
	System (A)			2	K
	6. Metal Cleaning Waste			-	
	1				
-					

OFFICIAL USE ONLY (effluent guidelines sub-categories)

. U.S. ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water,

9. L	ATITUDE		C. L	ONGITUE	E	
S. LATITUDE		1. DEG. 2. MIN. 3. SEC.). SEC.	D. RECEIVING WATER (name)	
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	-			 	 	· · · · · · · · · · · · · · · · · · ·
				<u> </u>		
		·				
					1	
					 	
		}		į		
			9. LATITUDE 1. DEG. 1. MIN. 3. SEC.			

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

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1. OUT-	2. OPERATION(S) CONTRIBUT		3. TREATMENT			
FALLNO (list)	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CO	DES FROM E 2C·1	
	Condensate Demineralizer	(0.08 MGD)	Neutralization of regenera-	2	K	
105	System which receives flow		tion wastes	1	N	
	from the following:					
_	•					
	1. Steam Generator Blowdown	(275 gpm)	None			
	(A) (OSN 106)				-	
	Steam Generator Blowdown	20 gpm (min)	None			
106	·	300 gpm (max)				
			·			
•	Metal Cleaning Waste which		1 MG lined pond	2	С	
107	receives flow from the		5 MG unlined pond			
	following:					
	l. Turbine Bldg (A) which	(1.5 MGD)	Floor and equipment drain			
	receives flow from the		with oil skimming			
	following:					
	A. Neutral Waste Tank		(See OSN 109)			
	(Makeup Water Treat-					
	ment Plant)(OSN 109)		·			

OFFICIAL USE ONLY (effluent guidelines sub-categories)

20 SEPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
VISTING MANUE ACTUAL COMMERCIAL MINING AND SHAVIOUR THRE

EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

OUTFALL LOCATION

		The second secon	
	of its location to the nearest		

UMBER .	R B LATITUDE			C. L	C. LONGITUDE		D. DECENTAGE WATER (name)	
(list)	1. DEG.	1, MIN.	1. 3EC.	1. 056.	Z, MIM.	1. sec.	D. RECEIVING WATER (name)	
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						1		
					 			
					1	1		
					1	1		

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

- A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item 8. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.
- B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUT-	2. OPERATION(S) CONTRIBUTE		3. TREATMENT		
FALLNO (list)	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST COD	
107	B. Condensate Demineralizer		(See OSN 105)		
(cont)	System				
	C. Turbine Bldg Floor and	(1.4 MGD)	None		
<u> </u>	Equipment Drains				
	l. RCW strainer backwash		None		
	2. Equipment cooling		None		
•	water drains				
	3. System leakage and	·	None		
	spills				
	4. Equipment blowdown	~	None		
	5. Auxiliary boiler		None		
	drains				
	6. Low Volume Wastes		None		
108	Cooling Tower Desilting		Solid removed by sedimenta-	1	U
•	Basin which receives flow		tion		
	from the Cooling Tower				
109	Neutral Waste Tank which	0.017 MGD	Neutralized regeneration	2	K
_ /	receives flow from the		waste		
	Makeup Water Treatment Plant				
	•				
OFFICIA	L USE ONLY (effluent guidelines sub-categories)				

NPDES

U.S. ENVIRONMENTAL PROTECTION AGENCY

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS Consolidated Permits Program

		1004	TION
דטכ	FALL	. LOCA	TION

MBER	8.	LATITUDE		C. L	ONGITUD	E	D. RECEIVING WATER (name)
list)	1, 029.	Z. MIN.	1, 14C.	1. 014.	Z. MIN.	3. SEC.	D. RECEIVING WATER (nume)

NUMBER		LAIIIOU		0. 0			D. RECEIVING WATER (name)	
Į	NUMBER (list)	1, 029.	Z. MIN.	1, 14C.	1. 014.	2. MIN.	3. SEC.	b. RECEIVING WATER (name)
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II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

- A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures,
- 8. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUT-	2. OPERATION(S) CONTRIBUTI		3. TREATMEN	IT .	
fallno (list)	s. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CO	DES FROM
111	Sewage Treatment Plant	0.12 MGD		1	T, U
		0.05 MGD (avg)		2	F
				3	A, C
				5	A, B
2	Runoff Holding Pond which		Sedimentation	1	0, U
	receives waste from the			4 .	A
	following:				
		·	·		
	1. Sewage Treatment Plant		(See OSN 111)		
	(OSN 111)				
	2. Construction Paint Spray	3000 gal/yr		1	U
	Booth		·		
	·				
;			·		
					·
	NOTES: Values in parenthesis	"()" are based	on operations at Sequoyah	Nuclear Pl	ant
	"A" denotes an altern	ate flow path			
		1			

OFFICIAL USE ONLY (effluent guidelines sub-categories)

ONTINUED FE L'EXCEPTIOLS	ာကို ကြက္ကည်း	eaks, oj spi	ilis, are	any of the discharge	es described in	jtems II-д òr	blintermitten	t or seasonal	in the second		-
_X. √	ES icomplete	the follou	ving ta	ble)	T	<u> </u>		to Section II	D	* * *	···
			i.		3. FRE	DUENCY	ir	V RATE	4. FLOW	VOLUME	1
OUTFALL NUMBER (ist)	cc	2. OPER ONTRIBU (li			PER WEEK (specify average)	D. MONTHS PER.YEAR (SPECIL) average)	1. LONG TERM		(specif) it	2. MAXIMUM	ii
107	All mot	21 210	onin	g wastes, as	-	<u> </u>	1 1				Ħ
107	necessa			•					cannot b		
·				ed/flushed					approxim		
				following		per year		chargeu	approxim	in reity 4	Ę II
	types o	-		_		per year	Ϊ'				
				acid, EDTA,				-		ļ	
į				de, phosphor							
				, hydroxyace	1						
				osion inhibi							
				te, nitric					To the second se		
				c acid and							
.	hydrof1								1		
BBGBUGT	0.01			e kalangan sa	aleria de de la come de			l Falaskienbalek			 <i>1</i> 8557
PRODUCTI											
	Bent guidenni ES (complete			ulgated by EPA und	er Section 304	of the Clean		oly to your t o Section IV			
				nt avidalina averse.							
	E5 (complete			nt guideline express	ed in terms of	production 10	_	re ot operati to Section IV			
				e quantity which re	nroconte on a	tual manaira					
used in the	applicable e	ffluent gui	ideline	, and indicate the a	ffected outfall	s.	inent or your	reveror prou	uction, expres	sea in the tern	ns ar
				1. AVERAGE D	AILY PRODUC	TION					
a, QUANTITY PI	ER DAY	b. UNITS OF	- MFAR	1102	C. OPI	RATION, PROD	UCT, MATERIAL	., ETC.		2. AFF OUTF	FALI
a, ••••••••						(spec	cify)		,	(list outfal	l nui
									-		
N/A											
,								•			
						, ,					
						•		•			
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					**						
					•						
				ļ							
V. IMPROVEM	ENTS			A CONTRACTOR	Marie Control		147	Server fine	arring weigh	rwingsan	
A. Are you not	w required by	y any Fede	eral. St	ate or local authorit	ty to meet any	/ implementat	ion schedule f	or the consti	ruction upgrad	ing or operati	ion c
water treatn	nent equipme	ent or prac	tices o	r any other environ	mental progra	ms which may	∠affect the d	ischarnes des	cribed in this :	annlication2 T	hir i
or loan conc	fitions.	rmit condit		dministrative or enforce or enfor						ns, court orde	rs, a
						oie)	X NO (80	to Item IV-B	, 		
	TON OF COL	NDITION,	2. /	AFFECTED OUTFA	LLS	3. BE	HEF DESCRI	PTION OF P	BOILECT	4. FII	NAF
	MENT, ETC		_	1	i	2. 2			KOJECI		
		•	8. NO.	b. source of bisc	HARGE					8. RE QUIRE	
		•	8. NO.	b, source of bisc	HARGE				•	8. RE QUIRE	
IDENTIFICAT AGREE		•	8. NO.	b, source of disc	HARGE				*	8 RE QUIRE	
			8. NO.	b, source of bisc	HARGE				**	8. RE QUIRE	

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your activation.

1.	INTAKE	AND	EFF	LUENT	CHARACTERISTIC	C٤

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

Jse the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	- 2. SOURCE	1 POLLUTANT	2, SOURCE
Asbestos	- Wet laundry of worker's clothing involved in asbestos stripping/ handling operations. Discharge would be through radwaste system. (Note: currently use dry cleaning contract)		
	- Shower facilities (insulator showers) provided for workers involved in asbestos stripping/handling operations. Discharge approximately 100 gpd to the sewage treatment plant.		

is any pollutant listed in Item V-C a substance or a component of a su	ibstance which you currently use or manufacture as an intermediate or fina	al product or
byproduct?		

YES (list all such pollutants below)

No (go to Item VI-B)

N/A

eceiving water in relation to your discharge w	ithin the last 3 years?"			pana o mangana
Toxicity testing presently being performed on discharges OSN 107, and 102. To be submitted with DMR. WHICONTRACT ANALYSIS INFORMATION Were any of the analyses reported in Item V performed by a contract laboratory or consulting lirm? Were any of the analyses reported in Item V performed by a contract laboratory or consulting lirm? Were any of the analyses reported in Item V performed by a contract laboratory or donoulting lirm? Were all the name, address, and telephone number of, and pollutants analysed by, each such laboratory or firm below) A NAME B. ADDRESS C. TELEPHONE large code & no.)		(o), VIII)		
	peing performed o	on discharges OSI	N 107, and 102.	Results
		• .		
				• .
		· ·		
·	·			
Were any of the analyses reported in Item V p	performed by a contract lab	iber of, and pollutants	□ NO (go to Sec	
Were any of the analyses reported in Item V p \(\times Y \times S \) \(\times Y \times S \) \(\times S \	performed by a contract lab address, and telephone num ach such laboratory or firm	nber of, and pollutants below)	ONO (go to Sec	tion IX) D. PÖLLUTANTS AF
Were any of the analyses reported in Item V p \(\times Y \text{ES} \) (list the name, analyzed by, e. A. NAME nalytical Industrial	address, and telephone num ach such laboratory or firm B. At	nber of, and pollutants below) DDRESS	C. TELEPHONE (area code & no.) (615) 894-8102	D. POLLUTANTS A
Were any of the analyses reported in Item V p Tyes (list the name, analyzed by, e. A. NAME nalytical Industrial	address, and telephone num ach such laboratory or firm B. At	nber of, and pollutants below) DDRESS	C. TELEPHONE (area code & no.) (615) 894-8102	Cyanide
Were any of the analyses reported in Item V p Tyes (list the name, analyzed by, e. A. NAME nalytical Industrial	address, and telephone num ach such laboratory or firm B. At	nber of, and pollutants below) DDRESS	C. TELEPHONE (area code & no.) (615) 894-8102	Cyanide
Were any of the analyses reported in Item V p	address, and telephone num ach such laboratory or firm B. At	nber of, and pollutants below) DDRESS	C. TELEPHONE (area code & no.) (615) 894-8102	Cyanide
Were any of the analyses reported in Item V p	address, and telephone num ach such laboratory or firm B. At	nber of, and pollutants below) DDRESS	C. TELEPHONE (area code & no.) (615) 894-8102	Cyanide

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system design. assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system. those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and comp I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation

A. NAME & OFFICIAL TITLE (type or print)	B. PHONE NO. Tarea coat a no.
M. Paul Schmierbach, Manager, Environmental Quality	(615) 632-6578
C. SIGNATURE	D. DATE SIGNED

EPA Facilities Which Do Not Discharge Process Wastewater

Outfall		Latitud	ie	L	.ongitu	de .	Receiving Water (name)
Number (list)	Deg	Min	Sec	Deg	Min	Sec	
111	35	36	15	84	47	50	Yellow Creek via unnamed tributary

A. Check the box(es) indicating the general type(s) of wastes discharged. X Sanitary Wastes Restaurant or Cafeteria Wastes Noncontact Cooling Water Wastewater (Identify)

B. If any cooling water additives are used, list them here. Briefly describe their composition if this information is available.

NA

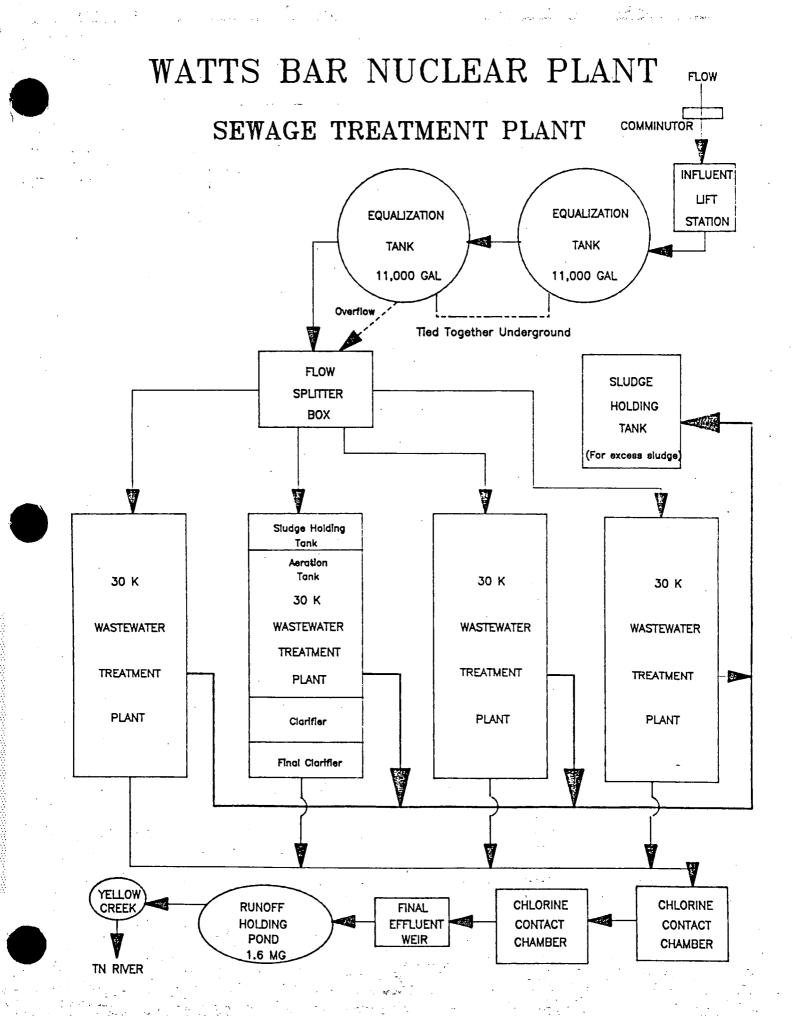
IV. Effluent Characteristics

- A. Existing Sources Provide measurements for the parameters listed in the left-hand column below, unless waived by the permitting authority (see instructions).
- B. New Dischargers Provide estimates for the parameters listed in the left-hand column below, unless waived by the permitting authority. Instead of the number of measurements taken, provide the source of estimated values (see instructions).

		1)		2)	(3)	(or) (4)
Pollutant or Parameter	Daily (includ	imum Value le units)	: Value /	ge Daily (ast year) de units)	Number of Measurements Taken	Source of Estimate
	Mass	Concentration	Mass	Concentration	(last year)	discharger)
Biochemical Oxygen Demand (BOD)	4.2 LB/DAY	8.8 mg/L	0.78 LB/ _{DAY}	2.01 mg/L	52	·
Total Suspended Solids (TSS)	2.0 LB/DAY	6.0mg/L	0.73 LB/DAY	1.95 mg/L	52	
Fecal Coliform (if believed present or if sanitary waste is discharged)	> 2000#/ _{100 1}		40.8 #/100	ML	52	
Total Residual Chlorine (if chlorine is used)	0.25 LB/ _{DAY}	0.5 mg/L	0.13 LB/Day		284	
Oil and Grease	< 1.3 LB/DAY	<pre> < 5 mg/L </pre>		i	1	
*Chemical oxygen demand (COD)						
*Total organic carbon (TOC)		. ——			_ <u>-</u> -	
Ammonia (as N)	0.005LB/DAY	0.02 mg/L			1	
Discharge Flow	Value 0.179	9 MGD	0.04 MGD		275	
pH (give range)	Value 6.1 - 8	. 3	6.84 - 7.5	1	268	
Temperature (Winter)	NA	°C	NA	°C	NA	
Temperature (Summer)	. NA	°C	NA	°C	NA	

If noncontact cooling water is discharged

V. Except for leaks or spills, will the discharge described in this form be intermittent or seasonal? If yes, briefly describe the frequency of flow and duration.	X No ······
The second secon	
	The state of the s
	• • •
	•
	,
	•
/I. Treatment System (Describe briefly any treatment system(s) used or to be used)	dead to the selection of the
FOUR 30,000 GPD PACKAGE SEWAGE TREATMENT UNITS	•
• GRINDER (COMMINUTOR) (1)	
• EXTENDED AERATION (4) 30,000 GPD BASINS	
(1) SLUDGE HOLDING TANK & (1) SLUDGE TANK FOR CHLORINATOR (1) CHLORINE CONTACT TANK	R EACH PLANT
• EFFLUENT FLOW RECORDER	
* FLOW EQUALIZATION	
EQUALIZATION TANKS	
See attached)	
Other Information (Optional)	经现金公司的股份的
Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer a should be considered in establishing permit limitations. Attach additional sheets, if necessary.	iny other information you feel
NA	
• •	
·	•
•	
/III. Certification	Capacida Andrews
I certify under penalty of law that this document and all attachments were prepared under my direction or so a system designed to assure that qualified personnel properly gather and evaluate the information submitted person or persons who manage the system, or those persons directly responsible for gathering the information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant information, including the possibility of fine and imprison personnels.	ed. Based on my inquiry of the on, the information submitted
information, including the possibility of fine and imprisonment for knowing violations. A. Name & Official Title	B. Phone No. (area code
	& no.)
	-
inature	D. Date Signed



TN0020168

Watts Bar Plant

Form Approved OMB No. 158-R0173

V, INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

Intake

PART A · You m					utant in this tab	ie. Complete	One raple to					
H. Martin		,		. EFFLUENT				(apecify i	IITS		TAKE (optiona	/ **(t_j-)
POLLUTANT	ia, MAXIMUM	DAILY VALUE	b, MAXIMUM 3	lable)	C.LONG TERM !	able)	d, NO. OF		T	a. LONG	TERM EVALUE	b NO. OF
Service Services	(I)	(2) MASS	CONCENTRATION	(2) MASS	(1)	(2) MASE	ANALYSES	a, CONCEN- Tration	b MASS	(1)	(2) MASS	ANALYSES
a. Blochemical Oxygen Demand (BOD)	<1.0	·<265					1	mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)	9.0	.2,387					1	mg/L	lbs/day			
c. Total Organic Carbon (TOC)	2.4	636					1	mg/L	lbs/day			
d. Total Suspended Solids (TS8)	7.0	1,856					1	mg/L	lbs/day			
e. Ammonis (as N)	0.12	32				•	1	mg/L	lbs/day			
. Flow	31.776		VALUE		VALUE	_		MGD	٠.	VALUE 37		1,462
y. Temperature (*) winter)	10.9		VALUE .		VALUE		8 /	. °C		VALUE		
h, Temperature	VALUE		VALUE		VALUE			°C	:	VALUE		
. рн 134,	5.9	7.1	MINIMUM	MAXIMUM			8	STANDAR	DUNITS		><	

PART B. Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT-	2. M Å	RK 'X'			3.	EFFLUENT					NITS		AKE (optional	I)
	a. er-	D. BE- LIEVED AB- SENT	B. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	O DAY VALUE	c.LONG TERM	AVRG. VALUE	d NO. OF	a, CONCEN-	b. MASS	8. LONG	TERM E VALUE	NO. OF
(if available)	PRE- SENT	SENT	CONCENTRATION	(2) MASS .	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	YSES	TRATION	U MA33	CONCENTRATION	(2) MASS -	YSES
a. Bromide (2495 9-67-9)	Х		<2.0	<530					1	mg/L	lbs/day			
b. Chlorine Total Residual	Λ		<0.1	<27					8	mg/L ·	lbs/day			
c. Color (12)	Х		15						1	PCU				
d. Fecal (F) Coliform (F)	Х		. <5						8 .	N/100ml		,		
e. Fluoride (16984-48-8)	Х		0.2	53					1.	mg/L	lbs/day			
f. Nitrate- Nitrite (as N)	Х		0.31	82					1	mg/L	lbs/day			

1. POLUT	2ï MA	RK'X	全国的"不管"的	的相談的歌曲時期	CO 876 3.1	EFFLUENT	A section to traffic (4. U	NITS		AKE (optional	<i>ŋ '*:'''</i> ''
N.P.	Live	D. BE-	8. MAXIMUM D	AILY VALUE	3. I	lable) VALU	ONG TERM	AVRG. VALUE	d. NO. OF	8, CONCEN- TRATION	b. MASS	¥ \$ F#SVE		D. NO.O.
	SENT	BENT	CONCENTRATION	(2) MASE	CONCENTRATION	(2) MASS	(1)	(2) MASS	YSES	TRATION		CONCENTRATION	MASS	YSES
g. Nitrogen, Total Organic (cs N)	Х		0.30	80					1	mg/L	lbs/day			
h. Oll end at Greass I	Х		<5.3	<1,405					4	mg/L	lbs/day			
l, Phosphorus (as P), Total. (7723-14-0)	Х		0.10	27					1	mg/L	lbs/day	·		
J. Redioactivity	7 7	1		• :										†
(1) Alpha Total			0.43723								· · · · · · · · · · · · · · · · · · ·			
	X		*(3)	-	·				1	pCi/L				
(2) Beta, mg.	,,	. [2.09225											
	X	∤	*(3)						1	pCi/L				
(3) Radium, Total	Х	İ	0.2908 *(3)		!				ا ا	- 0- /7				
		-	0.1074			·				pCi/L				
(4) Redium 22 226, Totel	X		*(3)					·	1	pCi/L				
k. Sulfate		1				······································							<u> </u>	1
(as SO ₄) (14808-79-8)	Χ		24.	6,364					1	mg/L	lbs/day			
l. Suffide		- 1	40.00	45.0		•			,	~ /T	11-0/301			
m. Sulfite	Х.		<0.02	<5.3	·				4	mg/L	1bṣ/day			
m. Sulfite (as SO ₃) (14265-45-3)	v	ļ	<0.1	<27				.1	8	mg/L	lbs/day			
Table 1 Strain Street 19 de	· A		70.1							mg/ L	103/ 449			+
n, Surfactents	Х	1	<0.1	<27					1	mg/L	lbs/day			ľ
o, Aluminum,														1
Total (7429-90-5)	Х		200	53				·	1	ug/L	lbs/day			
p. Barlum, 74 Total (7440-39-3)			20	F 0					$_{1}$	ug/L	lbs/day			
	Х		20.	5.3					1	ug/L	105/day			
q. Boron, Total (7440-42-8)	X	[<50.	<13					1	ug/L	lbs/day			'
r. Cobelt	^			/						367 2	200, 44,			+
Total (7440-48-4)	Х	f	<1.	0.26	Ì			İ	1	ug/L	lbs/day	·		
s, Iron, Total													 	1
(7439-89-6)	X		300.	80					1	ug/L	lbs/day			<u> </u>
t. Magnesium;	v		5.0	1.6					1	mg/L	lbs/day			1
(7439-95-4)	Х		5.9	1.0						mg/L	103/ 44,			<u> </u>
Total (7439-98-7)	х		<20.	<5.3	··		1		1	ug/L	lbs/day	١		ļ ·
v. Manganese,				13.3				· · · · · · · · · · · · · · · · · · ·		-0, -				
Total (7439-96-5)	Х		94.	25			.]		1	ug/L	lbs/day			
w. Tin. Total													·	1
(7440-31-8)	X	1	<50	13					1	ug/L	lbs/day			
x. Titanium,										/-	11 / 1			
(7440-32-6)	X		9.0	2.4		ļ	ŀ	.]	1	ug/L	lbs/day	1		1

TN0020168

Intake

No. 158-R0173 Form Approved Om

CONTINUED FROM PAGE 3 OF FORM 2-C

Callf you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenois. If you are not required to mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenois. If you are not required to mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenois. If you are not required to mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenois. respector. Mark "X" in column 2-a for all such GC/MS tractions that apply to your industry and for ALL tokic metals, cyalides, and total phenois. If you are not required common and the precion of the p See Instructions for additional details and requirements.

A the sound for some				to the saladay bear and		EFFLUENT "				4. UN	1ITS	5. INT	AKE (optle	
I POLLUTANT	2.	MARK 'X'		* Programme	TE MAXIMUM	30 DAY VALUE	CLONG TERM	AYRG. VALUE	d NO.OF	- CONCEN-	*	A LONG	TERM	b. NO.OF
NUMBER (U available)	ATEST	P BE- C BE	MAXIMUM	DAILY VALUE	(if ava	illable)	(1)	(2) MASS	ANAL-	a, CONCEN-	b MASS	(1) CONCEN-	(2) MASS	YSES
(if available) ?	20 m	SENT SENT	CONCENTRATION	W HE COLUMN THE SECOND	CONCENTRATION		CONCENTRATION	1				15, 15, 4	101.00 dips	4,846 (1.47)
METALS, CYANID	E, ANI	O TOTAL PI	HENOLS SAME	Colors a sector (Sec.)				 						1
Total (7440-36-0)	<u>X</u>		<1.0	<0.26				ļ	1	ug/L	lbs/day			ļ
2M Arednic (16th) (7440-38-21 A	.X		<1.0	<0.26					1	ug/L	lbs/day			ļ
3M. Beryllium. Total, 7440-41.7)	Х		<1.	<0.26					1 .	ug/L_	lbs/day			
4M, Cadmium, 103 Total (7440-43-9)	Х		<0.1	<0.03					1	ug/L	lbs/day			ļ
5M. Chromium, Total (7440-47-3)			<1.0	<0.26					1	ug/L	lbs/day			1
6M: Copper, Total (7650-50-8) 6	Λ_		<10.	<2.7				,	1	ug/L	lbs/day			-
7M Lead Tatal (344) (343) (343)	X		<0.1	<0.03					1	ug/L	lbs/day			ļ
8M. Mercury) Total (7439-97-61	1		<0.2	<0.05					. 1	ug/L	lbs/day			
9M. Nickel, Total (7440-02-01 Total	. X		<1.0	<0.26					1	ug/L	lbs/day		ļ <u>.</u>	-
10M, Selenium, 7 Total (7782-49-2)	у. 22		<1.0	<0.26					1	ug/L	lbs/day			
11M. Silver, Total (7440-22-4)	X		<10.	<2.7					1	ug/L	lbs/day			
12M. Thallium, Total (7440-28-0)	Х		<50.	<13.3					1	ug/L	lbs/day			
13M, Zine, Total (7440-66-6)	Х		<10.	<2.7					1	ug/L	lbs/day	.	ļ	
14M. Cyanide, Total (57-12-5)	X		<0.02	<5.3					4	mg/L	lbs/day		ļ	
15M. Phenois,	Х		<5	<1.3					4	ug/L	lbs/day	,		1 10

DIOXIN

DESCRIBE RESULTS 2.3.7.8-Tetrachlorodibenzo-P-Dioxin (1.764-01-6)

APOLLUTAN	*=	MARK		Park California	in an artist are	THE STANSON F	EFFLUENTE	Manager Continue	माजीस ् रम्बद्धिः	SALL SE	4. U	NITS MERCE	્રાંધ∵ 5. IJ	XE forth	onal)
GC/MS FRACTION	2014	SENT	SENT	CONCENTRATION	PAILYVALUE	The state of the s		CONCENTRATION	A LILWAS	d NO.OF	a. CONCENTRATION	b MASS	AYER	NLUE	ANALW YSES
GC/MS FRACTION	- VO	LATIL	E COM	POUNDS TO	计算生物的特性	UNITED AND SET	1.4 图 图 图 图	· (2015年)		1000	130.1	1 1	TRATION	May Mother	100
O PACTO	Х			<100	<27			1		1	ug/L	lbs/day			
2V Acrylofishings 1102-93-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-19-38-	X	1		<100	<27					1	ug/L	lbs/day			
AV. Activo tentes (100 marity and a (100 marity) an	Х		-	280	74					1		lbs/day		-	
AV. Bir (Chloro, Intelligible that (642-88-1).	·X			*(2)	,									 	
8V Bromotoms (176-25-2) £)15		:		<10	<2.7					1	ug/L	lbs/day			
6V. Carbon Wife. Tetrachlorida (56-23-5)	Λ			<10.	<2.7					1	ug/L	lbs/day			
7V. Chlorobetzene (108-90-117-5-4)	X			<10.	<2.7					1	ug/L	lbs/day			
8V. Chlorodi. bromomethene Life (124-48-1)	_X_			<10.	<2.7					1	ug/L	lbs/day			
9V. Chiprogramma (75-00-3) 1445	··X			<10	<2.7				·	1	ug/L	lbs/day			
ethylvinyl Ether (110-76-8)	X			<10	<2.7					1		lbs/day			
11V, Chloroform (67-66-3) 31	Х			<10	<2.7					1		lbs/day			
12V: Dichidro Dichidro (75-27-4)	X			<10	<2.7					1.	ug/L	lbs/day			
difluoromethanes (76-71-9)	. х		-	*(2)											
14V. 1,1-Dichlore sethane (75-34-3)	х			<10	<2.7					1	ug/L	lbs/day			
15V. 1,2-Dichlore ; ethane (107-06-2)	Х			<10	<2.7					1	ug/L	lbs/day			
16V.1,1-Dichloro othylene (78-25-4)	_x			<10	<2.7				·	1	ug/L	lbs/day			
17V 1,2 Dichloro- propene (78-87-5)	Х		_	<10	<2.7		<u>.</u>			1	ug/L	lbs/day			
18V. 1,3-Dickloro propylene (542-75-6)	X			*(2)											
19V: Ethylbenzene (100-41-4)	Х			<10	<2.7					1	ug/L	lbs/day			
20V. Methyl Bromide (74-83-9)	Х			<10	<2.7					1	ug/L	lbs/day			
21V: Methyl Chloride (74-87-3)	Х			<10	<2.7					1	ug/L	lbs/day			

PROME PROME	/ PAG	E V-4			Company of the Section	TN002		Iņ	take				Approved OM		
ANT NUMBER (If available)	2.	MARK	'X'		TO AILY VALUE	b. MAXIMUM 3	EFFL DDAY	C.LONG TERM	AVRG. VALUE	d NO. OF	4. U	NITS	3.	E (opti	
(if available)	ING RE-	PAE	APIT	CONCENTRATIO		(If ava	(1) MASS	(If,ava	(2) MASS	ANAL-	a. CONCEN- TRATION	b. MASS	AVERAGE (1) CONCENTRATION	(2) MASS	ANAL ANAL
C/MS FRACTION	- VC	LATILE	COM	POUNDS (con		CONCENTRATION		CONCENTRATION		 -			TRATION	(1,	
3V, Methylene hloride (75-09-2)	Х		:	<10	<2.7			,		1	ug/L	lbs/day			
3V. 1,1,2,2-Tetra- nioroethane 75 19-34-5)	X.			<10	<2.7					1	ug/L	lbs/day			
4V. Tetrachioro- hylenė (127-18-4)	Х		}	<10	<2.7		<u> </u>		,	1					
5V. Toluene 08-88-3)	Х			31.	8.2			·		· · 1		lbs/day			
5V. 1,2-Trans- ichloroethylene 56-60-5)	X			<10.	<2.7					1	,	lbs/day			
7V. 1,1,1-Tri-	X			<10.	<2.7		<u> </u>					lbs/day			
1-55-6) 3V. 1,1,2-Tri- ploroethane 9-00-5)	X			<10.	<2.7					1		lbs/day			
V. Trichloro- hylene (79-01-6)	X			<10.	<2.7					1		lbs/day		- <u>-</u>	
OV. Trichioro										1	1.1	lbs/day	.	· · · · · ·	
5-69-4) V. Vinyi	X			<10	<2.7				, ·	1	ug/L	lbs/day			
nloride (75-01-4)	X AC	ID COM	POUNI	<10.	<2.7					_1	ug/L	lbs/day			
. 2 Chloropheno 5-57-8)	Ϋ́			<5.0	<1.3					1	/T	11-0/1			
A. 2,4-Dichloro- É ienol (120-83-2)	Х			<5.0	<1.3							lbs/day		<u> </u>	
3,4-Dimethyl- snol (168-67-9)										1		lbs/day		•	
4,6-Dinitro-O- esol (534-52-1)	X			<5.0	<1.3					1		lbs/day			
. 2,4-Dinitro- enci (51-28-5)	X			<30	<7.9					1	ug/L	lbs/day		·	
. 2-Nitrophenol	X		-	<20	<5.3					1	ug/L	lbs/day			
8-78-5) A. 4-Nitrophenol DO-02-7)	<u>X</u>		_	<5.0	<1.3					1	ug/L	lbs/day		·	
4.5	X			<30.	<7.9			·		1	ug/L	lbs/day			
. P-Chlord-M- esol (59-80-7)	<u>X</u>			*(2)								,			
. Pentachloro- enoi (87-86-5)	. X			<30	<7.9				·	1	ug/L	lbs/day			
A. Phenol. 08-95-2)	Х			<5.0	<1.3					1	ug/L	lbs/day			
A. 2,4,6-Tth- lorophendi 3-06-2)	Х			<20	<5.3					1		lbs/day			

LPOL TANT	11/2	HARK	را دانه پوه	· And Amps · Ash () ()	SKIP TOMBE	ā-∰13-51 3.	EFFLUENT				1NU	020168 VITE	Intal	والمراجع المراجع	and to the
A NS	a rest	b.e.	C	8. MAXIMUM E		b. MAXIMUM 3	To 1 to year and the	C.LONG TERM		d NO OF	 	VIIIS	5, U	KE (option	b. NO. OF
TANT ASUL R. C.	RE-	PRES	SENT	CONCENTRATION	(a) MASS	(I) CONCENTRATION	(1)	(1) CONCENTRATION	(2) MASS	ANAL-	a, CONCEN- TRATION	b, MASS.	8. L. AYER (1) CONCE TRATION	ALUE	ANAL
C/MS FRACTION	- BA	SE/NE	UTRAL	COMPOUNDS		CONCENTRATION		CONCENTRATION					TRATION		1323
1B. Acenephthene (83-32-9)	: X			<5.0	<1.3	: .				1	ug/L				
28. Acenephtylene (208-96-6)	Х			<5.0	<1.3					1	ug/L				
38. Anthracene (120-12-7)	X			. <5.0	<1.3					1	ug/L				
4B. Benzidine (92-87-5)	Х	,		<50.	<13					1	ug/L			•	
58. Benzo (a) (5) (5) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6	Х			<5.0	<1.3					1	ug/L				
68. Benzo (a) Pyrene (50-32-8)	Х			<10	<2.7					1	ug/L				
7B. 3,4-Benzo- fluoranthene () (205-99-2)	٠X			<5.	<1.3			· · · · · · · · · · · · · · · · · · ·		1	ug/L			<u> </u>	
BB. Benzo (ghi) Perylene (191-24-2)	Х			<10.	<2.7					1	ug/L				
B. Benzo (k)	X			<10.	<2.7					1	ug/L	-		·	
10B. Bis (2-Chloro- thoxy) Methane 111-91-1)	Х			<5.	<1.3					1	ug/L	·			
11B. Bis (2-Chloro-thyl) Ether (111-44-4)	Х			<5.	<1.3					1	ug/L				
12B. Bis (2-Chloro- sopropyl) Ether 39638-32-9)	Х			<5.0	<1.3					1	ug/L				
13B. Bis (2-Ethyl- texyl) Phthalate 117-81-7)	Х			<5.0	<1.3				·	1	ug/L				7,,,,,
14B. 4-Bromo- chenyl Phenyl Ether (101-55-3)	Х			<5.0	<1.3				·	1	ug/L				
15B, Butyl Benzyl Phthelete (85-68-7)	Х	·		<5.0	<1.3					1	ug/L				
	Х			<5.0	<1.3					. 1	ug/L				
7B. 4-Chloro-	Х			<5.0	<1.3					1	ug/L				
	Х			<10	<2.7					1	ug/L				
	Х			<10	<2.7					1	ug/L				
08. 1,2-Dichloro- enzene (95-50-1)	Х			<5.0	<1.3					1	ug/L				
18, 1,3-Dichloro- enzene (541-73-1)	Х			<5.0	<1.3					1	ug/L				

EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER

CONTENT	M PAG	E V-6			,	TN0020168		Int	take			Form	Approved Q	to. 158-R	70173
AND CAS AND CA	2.	MARK	'x'	राज्यम् । सर्वे अपूर्वः	t 一种模型"阿克拉	3.	EFFLO	133			4. U	NITS	5. 1		onal) 🚟
MAND CAS	a rest	b. es-	C DE-	8. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	O DAY VALUE	CLONG TERM	AVRG. VALUE	d NO.OF	a. CONCEN-	b, MASS		E VALUE .	NO.OF
(if available)	AE-	PANT	SENT	(I)		CONCENTRATION			N (z) MASS	ANAL- YSES	TRATION	D, MA33	(I) CONCEN- TRATION	(2) MASS	YSES
GC/MS FRACTION	- BA	SE/NEU	JTRAL	COMPOUNDS	(continued)	the file of the	All graduate #115								
228, 1,4-Dichloro- bonzene (108-48-7	· X ·			<5.0	<1.3					1	ug/L	lbs/day			
23B, 3,3 Dichloro benzidine 3 192 (91-94-1)				<25.	<6.6					1	ug/L	lbs/day	:		
24B. Diethyl Phthelete 24 (84-68-2)				<5.0	<1.3		4.			1	ug/L	lbs/day			
25B. Dimethyl Is (Phthalate (25) (1) (131-11-3)	<u>х</u> Х			<5.0	<1.3					1		lbs/day			
268. DI-N-Butyl Phthelate: (84-74-2)	X			<5.0	<1.3					1	ug/L	lbs/day			
27B. 2,4-Dinitro- toluene (121-14-2)				<5.0	<1.3					1	ug/L	lbs/day			
28B. 2,6-Dinitro- toluene (606-20-2)				<5.0	<1.3					1	ug/L	lbs/day			
29B. DI-N-Octyl Phthalate	X			<10	<2.7					1	ug/L	lbs/day			
(117-84-0) 30B. 1,2-Diphenyl- hydrazine (as Azo-	X	,		*(2)								,			
318/ Fluorenthene (208-44-0)	 			<5.0	<1.3	L				1	ug/L	lbs/day			
328. Fluorene (86-73-7) 31.31.				<5.0	<1.3					1	ug/L	lbs/day			
33B. Hexe chlorobenzene (118-71-1)	,X							<u> </u>		1	ug/L	lbs/day			
34B. Hexa-				<5.0	<1.3						-	lbs/day			
(87-68-3) 35B. Hexachloro- cyclopentadiene	X			<5.0 <5.0	<1.3 <1.3			·		1	ug/L ug/L	lbs/day			
(77-47-4) 36B. Hexachloro- ethane (67-72-1)	X X			<5.0	<1.3					1	ug/L	lbs/day			
378. Indeno (1.2.3-cd) Pyrene							<u> </u>		-	1	ug/L	lbs/day			
(193-39-5) 388. leophorone (78-89-1)	X			<10. <5.0	<2.7 <1.3					1	ug/L	lbs/day			
398. Naphthalene (91-20-3)	X									1	ug/L	lbs/day			1
40B. Nitrobenzene (98-95-3)	X X			<5.0 <5.	<1.3 <1.3					1	ug/L	lbs/day			
41B. N-Nitro-				*(2)	(1.0						- 3, -				
(62-75-9) 42B, N-Nitrosodi- N-Propylamine (621-64-7)	X			<5.0	<1.3					1	ug/L	lbs/day			

TN0020168 Intake

I. PO INT	· 1/2. 1	MARK '	K'	建氯化甲基酚类属			EFFL		n i jedajana	St. 18	4. UI	NITS	5. 1	E (optio	nal)
I-PO ANT A S NU R (If available)	ATEST	b. e.c.		a, MAXIMUM E	DAILY VALUE	b. MAXIMUM 2	ilaBle)Y	CLONG TERM	AVRG. VALUE	d NO.OF		b. MASS	AVERAS	ALUE	b. NO. OF
(if available)	ODIM.	D. BE- (ANT	(I)	1 (z) MASS 111	CONCENTRATION	(2) MASS	CONCENTRATION	1/ (z) MASS	YSES.	TRATION	DMASS	(I) CONCEN-	(2) MASS	ANAL-
GC/MS FRACTION		SE/NEU	TRAI		(continued)										
438. N-Nitro sodiphenylemine (86-30-8)	·X			<5.0	<1.3	, ,				1	ug/L				
448, Phenonthrens (85-01-8)	Х			<5.0	<1.3					1	ug/L				
458, Pyrene (%) 4. (129-00-0)	Х			<5.0	<1.3					1	ug/L			· · · · · · · · · · · · · · · · · · ·	
46B. 1,2,4 - Tris.);; chlorobenzene.; (120-82-1)	X			<5.0	<1.3					1.	ug/L				
GC/MS FRACTION	- PES	TICIDES	<u> </u>	36.4	president services		15 15 15								
1P. Aldrin (309-00-2)			Х			-				· - <u></u>		·			
2P. G-BHG (3)9-84-8)			Х		-						ŀ				
3P. β-8HQ (1) (319-85-7)		ŀ	Х									,			
4P. γ-BHQ [] -2 ² [] (58-89-9)			Х						-						
SP. δ-BHC (319-86-8)			Х												
6P. Chlordans (67-74-9)			Х							·					
7P. 4,4'-DDT = 3 (50-29-3) 3 2			Х		· · · · · · · · · · · · · · · · · · ·							·····			<u> </u>
8P. 4.4'-DOE			Х												
9P. 4.4'-DDD			Х				······································								
10P. Dieldrin (%) (80-57-1)			Х								, ,		• • •		· . · ·
11P. G-Endosulfari (115-29-7)			Х												
12P. β-Endosultan (115-29-7)			X				· · · · · · · · · · · · · · · · · · ·								
13P. Endosulfan Sulfate 1031-07-8)			Х									<u> </u>		· · · · · · · · · · · · · · · · · · ·	
149. Endrin 7 72-20-8)			х												<u> </u>
15P. Endrin Aldehyde (7421-93-4)			X						·						
16P. Heptechlor (76-44-8)			X												· · · ·

CONTINUES FROM THE FRONT



TN0020168

Intake.

Form Approved OMB No. 158-R0173

CONTINUED FROM	NUED FROM PAGE V-8 DLLUTANT 12. MARK 'X'				\$ P	TN002016	8	. In	take.			For	m Approved	OMB No. 158	-R0173
1. POLLUTANT	2. 1	MARK	'X'				FFLUENT				4. U	NITS	5. IN	TAKE (optic	onal)
NUMBER	NUMBER (If available)	Dog.	C B4-	a. MAXIMUM E	PAILY VALUE	b. MAXIMUM 3	lable)	C.LONG TERM	AVRG. VALUE	d NO.OF	a, CONCEN-	b. MASS	AVERAG	G TERM E VALUE	b. NO. OF
(if available)	QUÎA.	SENT	SENT	CONCENTRATION	(1) MASS	CONCENTRATION	(x) MASS	CONCENTRATION	(z) MASE	YSES	TRATION		(I) CONCEN-	(1) MASS	YSES
GC/MS FRACTION	- PES	TICID	ES (co	ntinued)	11.	<u> </u>			ļ. <u>.</u>						
17P. Heptachlor Epoxide (1024-57-3)			Х												
18P. PCB-1242 (53469-21-9)			Х	<0.1	<0.03					1	ug/L	lbs/day			
19P. PCB-1254 (11097-69-1)			X	<0.1	<0.03					1	ug/L	lbs/day			
20P. PCB-1221 (**) (1:104-28-2)			Х	<0.1	<0.03			:		1.	ug/L	lbs/day			
21P. PCB-1232 14 (11141-16-5)			Х	<0.1	<0.03	÷				1	ug/L	lbs/day			
22P, PCB-1248 (12672-29-6)			Х	<0.1	<0.03					1	ug/L	lbs/day			
23P. PCB-1280 (11098-82-8)			X	<0.1	<0.03					1	ug/L	lbs/day			·
24P. PCB-1018 (12674-11-2)			X	<0.1	<0.03				; .	1	ug/L	lbs/day			
25P. Toxaphene (8001-35-2)			X		:										

EPA Form 3510-2C (6-80)

PAGE V-9

*Footnotes:

- (1) Long term data are for the period October 1984 through October 1988.
- Did not analyze.
- Data based on Sequoyah Nuclear Plant samples.

SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

STANDARD UNITS

TN0020168

DIFFUSER D. MARGI

Form Approved OMB No. 2040, 0086 Approval expuse 7,31,89

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

MAXIMUM

MINIMUM

MAXIMUM

this information on separate sheets (use the same format) instead of completing these pages.

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of

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PART A · You n	nust provide the	results of at l	east one analysis	s for every poll	lutant in this tal	ole. Complete	one table for	each outfall.	See instruc	tions for additio	nat details.	
				. EFFLUENT				3. UN		. 4. IN	TAKE (option	al)
D. Biochemical Dxygen Demand BOD) D. Chemical	8. MAXIMUM	DAILY VALUE	D. MAXIMUM 3	ilabic)	c.LONG TERM AVRG. VALUE		d. NO. OF		1	AVERAGI	TERM E.VALUE	h NO
	CONCENTRATION	(z) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	ANALYSES	A. CONCEN- TRATION	b. MASS	CONCENTRATION	(2) MASS	ANALY
Dxygen Demand												
o, Chemical Dxygen Demand COD)					·							
. Total Organic arbon (TOC)			"DIFFU	SER DISCHA	RGE SYSTEM	IS OUT OF	SERVICE"					
. Total Suspended olids (TSS)	·		(Repres	entative S	ampling Pr	ovided on (SN 102)					
Ammonia (as N)												
Flow	VALUE		VALUE		VALUE					VALUE		
Temperature vinter)	VALUE		VALUE	- 1.1. 1	VALUE			°C	<u> </u>	VALUE		
Température ummer)	VALUE		VALUE		VALUE			°C		VALUE		

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2 a for any polluta which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you may column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirement

	2. MA	RK 'X'				EFFLUENT				4. UI	NITS	5. IN T	AKE Jornona	11)
ANT AND CAS NO.	8. BE-	b. ar-	a. MAXIMUM D	AILY VALUE	b. MAXIMUM 3	O DAY VALUE	c.LONG TERM A	VRG. VALUE	1.NO. OF	a. LONCEN	· · · · · · ·	a LONG AVERAG	TERM E VALUE	b. 14 C
(if available)	SENT	SENT C	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(7): MASS	YSES	" PATION	b, MASS	CONCENTRATION	(2) MASS	AN YS
a. Bromide (24959-67-9)	.									·			1 20 1	
b. Chlorine, Total Residual					·		·							
c. Color											,			
d. Fecal Coliform	·		•				·	····						
e. Fluoride (16984-48-8)														
f. Nitrete— Nitrite (as N)														

MINIMUM

l, pH

TN0020168

Yard Hold: ond

Form Approved OMB No. 158-R0173

V, INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

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PARTA You m	ust provide the	results of at l	east one analysi	for every poll	utant in this tal	ole. Complete	one table fo	r each outfall.	See instruct	ions for additio		
N. S. S. S. S. S. S. S. S. S. S. S. S. S.	Application of the	The community of the	a (* sp.ed) 14a 2	EFFLUENT			g. 2012 94.	3. UN (specify I)	ITS SAGE		TAKE (options	1)
POLLUTANT				lable) VALUE	C.LONG TERM	llable * *		a. CONCEN-			TERM	L NO. OF
2,35-4,3,4,3,4,3,4,39,200 2,31-4,3,4,3,4,3,4,3,4,3,2,2,3,2,3,3,3,3,3,3,	(1)	181 (2) MASS	CONCENTRATION	(2) MASS	(1)	(2) MASS	ANALYSES	TRATION	b MASS	CONCENTRATION	(2) MADS	ANALYSES
a. Blochemical Oxygen Demand (BOD)	1.4	206					1	mg/L	lbs/day			
b. Chemical (COD)	9.0	1,322					1	mg/L	lbs/day			
c. Total Organic Carbon (TOC)	2.5	367					1	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	`5	734	37		8.8		802	mg/L	lbs/day			
6. Artimonia (as N)	0.02	2.9		,			1	mg/L	lbs/day	·	· · · · · · · · · · · · · · · · · · ·	
f. Flow	17.6		70		21.6		1304	MGD	::-	VALUE	٠.	
g. Temperature ((winter)	9.8		VALUE		VALUE		7 :	°C		VALUE		
h. Temperature (summer)	VALUE		VALUE	· · · · · · · · · · · · · · · · · · ·	VALUE			°C		VALUE		
і. рн 🧗 🧖	6.1	6.8	6.5	9.8			931	STANDARI	DUNITS			

PART 8 Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT	2. M Å	RK 'X'			# 15 met 3.	EFFLUENT		Market States	٠.	4. UI	NITS	5. INT	AKE (optional)
CAS NO.	A. BE-	D. pg-	e. MAXIMUM E	PAILY VALUE	b. MAXIMUM 3	PAY VALUE	C.LONG TERM	AVRG. VALUE	d NO. OF	a. CONCEN-		8. LONG	TERM VALUE	NO. OI
		SENT	CONCENTRATION	1 (2) MASS &	CONCENTRATION	16. (2) MASS	CONCENTRATION	1 (2) MASS	ANAL- YSES	TRATION	b MASS	(i)	(2) MASS (ANAL-
s. Bromide (24959-67-9)	Х		<2.0	<294			·		1	mg/L	lbs/day			
b. Chiorine, Total Residual	Х		<0.1	<15	0.13		0.003		2554	mg/L	lbs/day		***************************************	
d Color	Х		10						1	PCU				
d. Fecal (1) Coliform (1)	Х		<5		·				8	N/100m1				
e. Fluoride 👫 (16984-48-8)	X		0.7	103					1	mg/L	lbs/day			
f. Nitrete Nitrite (as N)	Х		0.61	90					1	mg/L	lbs/day			

المند و و الم	2 M A	e K iyil	Francis events	三面1900年出版的自由186	69F8555 3.1	EFFLUENT ?	建乳化分子] 4. U	NITS		AKE JUPITURE	
AN NOX	9.35	b	B. MAXIMUM E	AILY VALUE	b. MAXIMUM 3	DAY VALUE	ONG TERM	AVRG. VALUE	d. NO. OF	a, CONCEN- TRATION	b, MASS		TERM	NO.OF
in the	PRES	SENT	CONCENTRATION	(2) MASS	3. I b. MAXIMUM 30 (1) avai concentration	(2) MASS	ENTRATION	(2) MASS	ANAL- YSES	TRATION		CONCENTRATION	1A88	YSES
g. Niperen, in- Total Organica (as N)	Х		0.22	32					1	mg/L	lbs/day			3.57
h. Oll eride di Gresse Av	X	-	< 5	<734	19.4		5.5		323	mg/L	lbs/day			
L Phosphorus (cs P), Total (c. 17723-14-0)	х		0.05	7.3					1	mg/L	lbs/day			
I. Rediosctivity.												·		
(1) Alpha ga h. Total full	х		*(2)											·
(2) Beta Total 1	х		*(2)				·							
(3) Radium, Total	х		*(2)	- 1										
(4) Redium 2 226, Total	х		*(2)					. ,						·
k. Sulfate (1) (as SO ₄) (14808-79-8)	,		21	3,084					1	mg/L	lbs/day		-	
I. Suifide As. (as S)	х		<0.02	<2.9			-		4	mg/L	lbs/day			
m. Sulfite (as SO3) (14265-45-3)	X		<0.1	<15					8	mg/L	lbs/day			
n, Surfactanta	х	·	<0.1	<15	·				1	mg/L	lbs/day			1. t
o. Aluminum, Total (7429-90-5)	x'		190	28					1	ug/L	lbs/day			
p. Barlum, (1), Total (7440-39-3) T	v		20	2.9					1	ug/L	1bs/day	·		
q. Boron, (1) Total (7440-42-8)	х		<50 .	<7.3			·		1	ug/L	1bs/day		· · · · · · · · · · · · · · · · · · ·	
f. Cobalt. (7440-48-4)	x		<1.	<0.15					1	ug/L	lbs/day		·	
e. Iron, Total (7439-89-6)	X		210	31					1	ug/L	lbs/day			3
t. Magnesium Total (7439-95-4)	Х		6.3	925	·				1	mg/L	lbs/day		· 	
u, Molybdenum, Total (7439-98-7)	Х		<20.	<2.9					1	ug/L	lbs/day		*	
v. Manganesa Total (7439-96-8)	х		7.0	1	·				1	ug/L	lbs/day			
w. Tin, Total (7440-31-5)	X		<50.	7.3			i i		1	ug/L	lbs/day		• •	
x. Titanium, (2) Total (7440-32-6)	v		9.0	1.3					1	ug/L	lbs/day			

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b. 158-R0173 Form Approved

CONTINUED FROM PAGE 3 OF FORM 2-C दिहीं you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test The column 2-a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason by the ballous is process. to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the residual. sults of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall.

See Instructions for additional details and requirements.

Attanton.				20 20 20 20 20 20 20 20 20 20 20 20 20 2		EFFLUENT 1				4. UN	IITS		AKE (option	
POLLUTANT	2,1	MARK 'X'	1 14 3 14 75	interesting of	Th. MAXIMUM 3	O DAY VALUE	CLONG TERM	AYRG. VALUE	d. NO. OF	B. CONCEN.	b MASS	AVERAG	YALUK	NO.OF
NUMBER	ATEST.	D. BE. C. B	R B. MAXIMUM	DAILY VALUE	(I) ava	(lable)	(1)	(2) MASS	YSES	TRATION	D. MASS	(1) CONCENT	[2] MASS	YSES
POLLUTANT AND CAS NUMBER (F	CUIN-	SENT SET	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	X	1				7 5757 5	Sala, 1
SETALS CYANID	E. ANI	TOTAL P	HENOLS	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	-0.48% A375 \$100								, l	
M. Antimony			ł			ļ	}	1	1	ug/L	lbs/day	<u> </u>		
(mail 1440 20 m)	Χ.		<1.0	<0.15	 		 		 					.
IM. Antinony I Total (14030-01) IM. Arenie (1614) (7440-38-21)	ا ا	1	<1.0	<0.15					1	ug/L	1bs/day	<u>/</u>	·	
7440-50-414	X	└	1.0	10.13	 		 					1		
العال الأنجاز والمناسية ووراه مطا		1	/1	<0.15		1			1	ug/L	1bs/day	4		
TOTAL 37440-4137	<u>X</u>	 	<1.	(0.1)	 		1			-			1	
4M, Cadmium,		ļ.,	1 1	<0.01			<u> </u>		1	ug/L	lbs/day	у		
704117640499)	X	 	<0.1	1 (0.01			<u> </u>			_				1
6M Chromium Total (7440-47-3)			1	<0.15					11	ug/I	lhs/day	у	ļ	 -
A CONTRACTOR	<u>x</u> _	 -	<1.0	1 30.17						-	l., ,,			
6M; Copper, Total (7656-80-8)	l v		<10.	<1.5					1	ug/L	lbs/da	4	 	
THE PROPERTY OF THE PARTY OF TH		 		1	<u> </u>					·	/,			
7M Lead, Tatalan	V		<1.0	<0.15				<u> </u>	1	ug/L	lbs/da	4	 	
7M Lend Table 37 07439 23673	^	 		 						,	,			1
8M. Mercury 16th (7439-97-6) 47	v		<0.2	<0.15			<u> </u>		 1	ug/L_	lbs/da	4	 	
		 	- `` :						,	_ /_	l 1bs/da	_}.	}	
9M, Nickel, Total (7440-02-0) 31,	1 x	1	<1.0	<0.15		<u> </u>		ļ	1 1	ug/L	IDS/ua	\	 	1
1014 Celenium	 	1									l lbs/da			1 .
Total (7.782-49-2)	x	1	<1.0	<0.15			<u> </u>		1_1	ug/L	IDS/ ua	4		+
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		 -				1			,	ug/L_	lbs/da			
11M. Silver Total (7440-22-4)	X	\ <u>\</u>	<10.	<1.5	1	<u> </u>	 	_	1	Ug/L	Thela	y	 	
12M. Thalllum,	 '' '	1					1		1	ug/L	lbs/da	γ ·		
Total (7440-28-0)	X		<50.	<7.3	J		_		- 		1	1	1	., . :
13M. Zine, Tatal	1			7			-		1	ug/L	lbs/da	y	<u> </u>	
13M, Zinc, Total (7440-68-6)	X		<10.	<1.5	<u> </u>			- 	 -	- 0,	 	1		
14M Cyanide						1			4	mg/L	lbs/da	У		
Total (57-12-5)	X		<0.02	<2.9	<u> </u>		_		-		 	1	1	
15M. Phenois,		T	_						4	ug/L	lbs/da	.v		
Total	1 x	<u> </u>	<5	0.73	1	<u> </u>				_L_Nf	<u> </u>			100
DIOXIN			Toescolor of		: 医特特氏病结节		<u></u>						 -	

DESCRIBE RESULTS 2,3,7,8-Tetra-Dioxin (1764-01-6)

			-			101.3		en barteda (b. stant) in blis	林河沿横桥 面。	(.41. 14.)	7 A. U	NITS TO	5. 12	TAKE JOHN	onal) "''' "
	Way	D. BE	VP.	A MAXIMUM	MILYVALUE	BEMAXIMUM 2	NaSie	OLONG TERM	allable)	I AITAL	a. CONCENTRATION	L MASS	AVE	ALUE	NO.OF
GC/MS FRACTION	1 - VO	LATILI	COM	POUNDS	537 - 123	CONCENTRATION		CONCENTRATION	ASSERTED ON A	YSES		100	TRATION	a) mass	YBES
1907-02-By	x			<100	<14.7					1	ug/L	lbs/day			100.00
Acrylonis (last 1 (d) 181 pungasi N. Benzessi 11 (422) 301 1	Х			<100	<14.7					1	ug/L	lbs/day			
3V Bentage HA (21,43-2)	Х.			<10	<1.5					_1	ug/L	lbs/day			
methyl) Ethel (642-88-1)	X			*(2)						-					
BV Bromotomi (78-28-2) *, d	Х		-	· <10	<1.5			. ,		1	ug/L	lbs/day			
Tetrachlorida:	Х			<10	<1.5					1	ug/L	lbs/day			
(108-90-7) (14-3)	,		-	<10	<1.5			,		1	ug/L	lbs/day	·		
BV. Chlorodi bromomethendi (124-48-1)	Х		_	<10	<1.5		•			1 .	ug/L	lbs/day	·		
OV. Chlorograph 75-00-31 - 46 - 1 10V. 2-Chloro- 1	Х			<10	<1.5				·	1	ug/L	lbs/day			
110-75-8)	Х			<10	<1.5					1	ug/L	lbs/day			
1V. Chloroform 67-66-31				_17	2.5					1	ug/L	lbs/day			
2V. Dichloro promomethene 75-27-4) 3V. Dichlord liftuoromethene	Х		_	<10	<1.5					1	ug/L	lbs/day			
78-71-9) - (↓ ↓ ↓ · · · · · · · · · · · · · · · ·	_X			*(2)											
thane (75-34-3) 5V. 1,2-Dichloro	×			<10	<1.5					1	ug/L	lbs/day			
thane (107-06-2)	X		-	<10.	<1.5					1	ug/L	lbs/day			
1hylene (78-35-4) 7V: 1,2 Dichloro	X			<10.	<1.5					1	ug/L	lbs/day			
ropana (78-87-5) 8V: 1,3-Dichloros ropylena : (*) 142-75-8)	X	_		<10	<1.5					1	ug/L	lbs/day			
9V Ethylhentene	Х			*(2)											
00-41-4) V. Methyl comide (74-83-9)	Х			<10	<1.5			· ·		1	ug/L	lbs/day			
1V. Methyl	Х		-	<10	<1.5					1	ug/L	lbs/day	· .		

EPA Form 3510-2C (Rev. 12-80) Previous edition may be used.

ĝ.	EPA I.D. NUMBER (copy from Item	1 of Form 1)	OUTFALL NUMBER] 1	-;	
\$5. 17	TN0020168	_ `	102	1	•	

CONTURE OF FROM	PAG	E V-4			Sa Sr	TN0020168		10)2	d.		Form	Approved O	No. 158-R	0173
LP ANT	2.	MARK	'X'	AND STATE OF	र्वे अन्य स्थापित हैं।	•	EFFL	,		<i>,</i> .	4. U	NITS	5.	E (optio	onal)
NUMBER	ATEST	LIEVED	C. BE.	a. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	llable)	c.LONG TERM	AVRG. VALUE	d NO.OF	IS. CONCEN-	b, MASS	A LON	EVALUE	b. NO. O
NUMBER (If available)	OUIR-	SENT	APHY	CONCENTRATION	(1) MASS	CONCENTRATION	(2) MASS	(1)	(2) MASS	YSES	TRATION	U. MA33	(I) CONCEN-	(2) MASS	YSES
SOMO PACTION	<u>- vo</u>	LATILI	E COM	IPOUNDS (conti	rued)	<u> </u>			•		<u> </u>				
22V. Methylene Chloride (75-09-2)	X			<10	<1.5					1	ug/L	lbs/day	ļ		
23V. 1,1,2,2-Yetra- chloroethane (1) (79-34-5)	_X			<10	<1.5					1	ug/L	lbs/day	7		
24V. Tetrechloro- ethylene (127-18-4)	X			<10	<1.5					1	ug/L	lbs/da			
25V. Toluene (108-88-3)	Х			<10	<1.5				,	1	ug/L	lbs/day	7		
26V. 1,2-Trans- Dichloroethylene (156-60-5)	X			<10	<1.5					1	ug/L	lbs/day			
27V. 1,1,1-Tri- chloroethane (71-55-6)	Х			<10	<1.5					1	ug/L	lbs/day			
28V: 1,1,2-Trk chloroethane (79-00-5)	X			_<10	<1.5					1		lbs/day			
29V. Trichloro- ethylene (79-01-6)	٠X			<10	<1.5					1		lbs/day			
30V. Trichloro- fluoromethene (75-69-4)	X			<10	<1.5					1		lbs/day			
31V. Vinyi Chloride (75-01-4)	x			<10	: <1.5			·	· .	1		lbs/day			
GC/MS FRACTION	- ACI	D COM	POUN	DS :	A TOTAL										
1A. 2-Chloropheno (95-57-8)	X			<5.0	<0.73					_1	ug/L	lbs/day			
2A, 2,4-Dichloro- phenol (120-83-2)	Х			<5.0	<0.73					1	ug/L	lbs/day			
3A, 2,4-Dimethyl- phenol (168-67-9)	X.			<5.0	<0.73					1	ug/L	lbs/day			
4A. 4,6-Dinitro-O- Cresol (534-52-1)	Х			<30.	<4.4					1	ug/L	lbs/day			
5A. 2,4-Dinitro- phenol (51-28-5)	х			<20	<2.9					1	ug/L	lbs/day			
6A. 2-Nitrophenol (88-75-5)	x			<5.0	<0.73					1	ug/L	lbs/day			
7A. 4-Nitrophenol. (100-02-7)	Х	·		<30.	<4.4					1	ug/L	lbs/day			
8A. P-Chlord-M- Cresol (59-80-7)	Х			*(2)								,			
9A. Pentachloro- phenol (87-96-5)	х	·.		<30	<4.4					1	ug/L	lbs/day			
10A: Phenol (108-95-2)	_X.			· <5	<0.73				·	1	uģ/L	lbs/day			
1-1 A. 2,4,6-Tt1- chlorophendi (88-06-2)	Х			<20.	<2.9					1	ug/L	lbs/day			

•		
ONLINUED FROM THE FRONT	TNUUZULO8	1112.

1 PC TANT	1/2,	MARK 'X	· · · · · · · · · · · · · · · · · · ·	Carrie Guara	5 of 3.	EFFL				4. U	NITS	/Ś.	KE (option	onal i
TANT	ATEST	D. BE- C. BE- LIEVEDLIEVE PRE- AB- SENT SENT	a. MAXIMUM	DAILY VALUE	b. MAXIMUM d		CLONG TERM	AVRG. VALUE	d NO. OF	 	 	AXE	RM	b NO.OF
9				(c) MASS	(I)	整0.	CONCENTRATION	(2) MASS	ANAL-	TRATION	b MASS	(I) CONCE	(2) MASS	ANAL-
GC/MS FRACTION	– BA	SE/NEUTRA	L COMPOUNDS											
1B. Acenephthene (83-32-9)	Х		<5.0	<0.73					1	ug/L	lbs/day			
28. Acenephtylene (208-96-8)	x ·		<5.0	<0.73					1	ug/L	lbs/day			
3B. Anthracene (120-12-7)	v		<5.0	ζ0.73					1	ug/L	lbs/day			
48. Benzidine (92-87-5)	X		<50.	<0.73					1	ug/L	lbs/day			
5B. Benzo (a) 4 Anthracene (56-55-3)	Х		<5.0	<0.73					1	ug/L	lbs/day			
68. Benzo (a) Pyrene (50-32-8)	Х		<10.	<1.5	-				1	,	lbs/day			
7B. 3,4-Benzo- fluoranthene (205-99-2)	X		<10	<1.5					1	,	lbs/day		-:	
8B. Benzo (ghi) Parylene (191-24-2)	Х		<10.	<1.5					1		lbs/day			
98. Benzo (k);;;; Fluoranthene ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	Х		<10.	<1.5					1	/	lbs/day			-
10B. Bls (2-Chloro- ethoxy) Methans (111-91-1)	х		<5.0	<0.73					1		lbs/day			
11B. Bis (2-Chloro- ethyl) Ether (111-44-4)	Х		<5.0	<0.73					1		lbs/day			
128. Bis (2-Chloro- (sopropyl) Ether (39638-32-9)	x		<5.0	<0.73					1		lbs/day			
13B. Bis (2-Ethyl- hexyl) Phthalato (117-81-7)	y		<5.0	<0.73					1		lbs/day			
14B. 4-Bromo- phenyl Phenyl Ether (101-56-3)	X	-	<5.0	<0.73					1		lbs/day			
15B. Butyl Benzyl Phthalate (85-68-7)	Х		<5.0	<0.73					1		lbs/day			
16B. 2-Chlore- naphthalene (91-58-7)	х		<5.0	<0.73		,		·	1		lbs/day			
178. 4-Chloro- Phenyl P	Х		<5.0	<0.73					1	110/I	lbs/day	·.		
18B. Chrysene (218-01-9)	Х		<10.	<1.5					1		lbs/day			
19B. Dibenzo (a,h) Anthrecene (53-70-3)	Х		<10.	<1.5					. 1	ug/L	lbs/day			
208. 1,2-Dichloro- benzene (95-80-1)	х		<5.0	<0.73	·				1	ug/L	lbs/day			
218. 1,3-Dichloro- benzene (541-73-1)	Х		< 5. 0	<0.73					1	ug/L	lbs/day			

EPA Form 3510-2C (6-80)

EPA I.D. NUMBER (copy fr	om Item 1 of Form	1) OUTFALL NUMBER	
TN0020168		102	

	PAGI	E V.6			Bi	NUMBER (сору 1 TN0020168	rom Item 1 of Fo	102				Form	Approved	No. 158-R	0173
CONTINU		MARK	'x'		三三三 经有限的证券	r - W	EFFLU. A	•			4. UI	NITS	5.		onal) 🌃
AND CAS AND NUMBER ST.	TEST	b. es-	C 0E-	a. MAXIMUM I		b. MAXIMUM 3	DAY VALUE	c.LONG TERM	AVRG. VALUE	d NO.OF	a. CONCEN-	b MASS	A LONG	TERM VALUE	NO.OF
Mailable)	NE.	D. BE- LIEVEDI PRE- SENT		(I)	* (2) MASS	(1)	(2) MASS	(I)	4 (2) MASS	YSES	TRATION	L	(I) CONCENTRATION	(2) MASS	YSES
GC/MS FRACTION	- BAS	E/NEU	TRAL	COMPOUNDS	continued)						, 	· · · · · · · · · · · · · · · · · · ·			ļ
228, 1,4-Dichloro- berseng (106-48,7)	Х	: .		<5.0	<0.73					1	ug/L	lbs/day			
23B, 3,2, Dishloro benzidine (2,584) (91-94-1)	Х			<25.	<3.7					1	ug/L	lbs/day		·	
248, Diethyl, dr. Phthalate 44, 1997 (84-66-2)	Х			<5.0	<0.73		١,			1	ug/L	lbs/day	:		
25B. Dimethyl (1) Phthalate (1) (131-11-3)	χ.			<5.0	<0.73					1	ug/L	lbs/day		·	
268. DI-N-Butyl. Phtholato: (84-74-2)	X			<5.0	0.73					1	ug/L	lbs/day			
278. 2,4-Dinitro- toluene (121-14-2)	X			<5.0	<0.73					1	ug/L	lbs/day			
28B, 2,6-Dinitro- toluene (808-20-2)	Х			<5.0	<0.73					1 .	ug/L	lbs/day			
29B. DI-N-Octyl Phthalate (117-84-0)	Х			<10.	<1.5		·			1	ug/L	lbs/day			
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)	X			*(2)											
318, Fluorenthene (206-44-0) \$ \$\$;	× ×			<5.0	<0.73				,	1	ug/L	lbs/day			
328, Fluorens (86-73-7)	'Χ			<5.0	<0.73					1	ug/L	lbs/day			
33B. Hexe chlorobenzene (118-71-1)	X			<5.0	<0.73			,		1	ug/L	lbs/day			
348, Hexa chlorobutadiane (87-68-3)	Х			<5.0	<0.73		·			. 1	ug/L	lbs/day		/1.	
35B. Hexachloro- cyclopentadiene (77-47-4)	Х			<5.0	<0.73					1	ug/L	1bs/day			
36B, Hexachloro- ethane (β7-72-1)	Х			<5.0	<0.73					1	ug/L	lbs/day			
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	х			<10	<1.5					1	ug/L	lbs/day			
388. leophorone (78-59-1)	Х			<5.0	<0.73					1	ug/L	lbs/day			<u> </u>
39B. Naphthalene (91-20-3)	Х			<5.0	<0.73					1	ug/L	lbs/day			
40B. Nitrobenzene (98-95-3)	х			⟨5.0	<0.73		.•	-		1	ug/L	lbs/day			
41B. N-Nitro- sodimethylamine (62-75-9)	Х			*(2)						. <u>.</u>	· · · · · · · · · · · · · · · · · · ·	·			
42B, N-Nitrosodi- N-Propylamine (621-64-7)	Х			<5.0	<0.73		·			1	ug/L	lbs/day		ITINUE ON	

EPA Form 3510-2C (6-80)

POLLU	2.	MARK	'X'	1.5° +3+ 1.5°	gr. Migher office,	3.	EFFLU	ol .	n hand to his	30 (1.15)		NITS ·	5,	KE (opti	onal)
NUMB (if available)	A TEST	h er	C. BE.	a, MAXIMUM D	DAILY VALUE	b. MAXIMUM 3	ilaBle)Y		NATE VALUE	d NO. OF	a, CONCEN- TRATION	b. MASS	AVER	FRM	b. NO.O
		D. DE. LIEVED PRE- BENT			(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	YSES	TRATION	W MA33	(1) CONCENTRATION	. (2) MASS	YSES
C/MS FRACTION	– BA	SE/NEL	JTRAL	COMPOUNDS	(continued)										<u> </u>
138. N-Nitro- odlphenylemine 86-30-6)	Х			<5.0	<0.73					1	ug/L	lbs/day			<u> </u>
48, Phenenthrope 35-01-8) 37 2 5044	Х			<5.0	<0.73		463.			1	ug/L	lbs/day			
58, Pyren 4 : 129-00-0)	X			<5 . 0	<0.73					1	ug/L	lbs/day			
6B. 1,2,4 Tribility hiorobenzena 120-82-1)	X_			<5.0	<0.73					1	ug/L	lbs/day			
C/MS FRACTION	- PES	TICIDE	S	ign (see alter											
P. Aldrin 309-00-2)			X							·					
Р. а-вно			Х											•	
Р. β-вно (1/2). 319-85-71			Х												
P. γ-BHQ (1/4)? 58-89-9)			Х					-			,				
Р. δ-внс (\$; 319-86-8) Ѿ ;;			Х		· · · · · · · · · · · · · · · · · · ·										1
P. Chlordane 71. 57-74-9)			Х												
P. 4.4'-DDT			x												
P. 4.4'-DDE 74.72-55-9)			Х		. 1		,	·							
P. 4.4'-DDD (4)			Х												
OP. Dieldrin (1)	Ì		Х			·	·				·				
1P. G-Endosulfert 118-29-7)			Х												ļ
2P. β-Endosulfan 15-29-7)	.		Х												-
3P. Endosulfen de ulfete 1031-07-8)		_	Х		·										
4P. Endrin 72-20-8)	-		X										, č		-
5P. Endrin Idehyde (421-93-4)			Х	<u> </u>					<u></u>		· · ·				
8P. Heptechlor**	-		Х											· · · · · ·	



EPA I.D. NUMBER (copy from Item TN0020168 rm 1) OUTFALL NUMBER 102

Form Approved No. 158-R0173

1 POLLUTANT	2.	MARK	'X'		1	3, 8	EFFLUENT				4. UI	NITS		TAKE (option	onal)
AND CAS	A TEST	h ee-	C 04-	a. MAXIMUM E	DAILY VALUE	b. MAXIMUM 3	DAY VALUE	CLONG TERM	AVRG. VALUE	d NO.OF		b MASS	AVERAG	TERM E VALUE	B. NO. OF
AND CAS (A) NUMBER (A) ((I available)	RE.	PRET	SENT AB-	CONCENTRATION	(a) MASS	CONCENTRATION	(s) MASS	(1)	(2) MASS	ANAL.	TRATION	U M A 3 3	(I) CONCENTRATION	(2) MASS	VSES
GC/M8 FRACTION	- PES	TICIDI			14										ļ
17P. Heptachlor Epoxide 1305 (1024-57-3)			Х											, , ,	
18P. PCB-1242	х		:			<0.1		<0.02		5	ug/L	,			
19P. PCB-1254 (11097-69-1)			Х								· · ·				
20P, PCB-1221 (11104-28-2)		·	Х												
21P. PCB-1232 (11141-16-5)			Х												, ;
22P. PCB-1248 (12672-29-6)			Х												
23P. PCB-1260 (11096-82-8)			Х				•								
24F. PCB-1016 (12674-11-2)			Х												:-
25P. Toxaphene (8001-35-2)			Х												

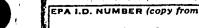
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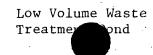
*Footnotes:

- (1) Long-term data are for the period October 1984 through October 1988.
- (2) Did not analyze

PLEASE PROPERTYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.



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V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

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PARTA You m	rust provide the	e results of at le	east one analysis	for every poll	utant in this tab	le. Complete	one table fo	r each outfall.	See instruct	ions for additio	nai details.	} <i>E</i>
NEW WORLS	gar e gurraga est e		2.		•		and the second	3, UN (specify i	IITS	4. IN	TAKE (optiona	1)
II POLLUTANT	a. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	lable) VALUE	C.LONG TERM	ARG. VALUE	d NO OF		/, Old/lk/	a. LONG	TERM	h NO. OF
THE PERSON NAMED IN	(I)	** (2) MASS	CONCENTRATION	(2) MASS	(1)	(2) MASS	d. NO. OF ANALYSES	8. CONCEN- TRATION	b. MASS	CONCENTRATION	(2) MASS	ANALYSES
a. Biochemical Oxygen Demand (BOD)	3.8	22					1	mg/L	lbs/day			
b. Chemical Oxygen Demend (COD)	21.	123					1	mg/L	lbs/day		•	
c. Total Organic Carbon (TOC)	3.7	22					1	mg/L	lbs/day			
d. Total Suspended Soilds (TSS)	10	59	87		10.8		593	mg/L	lbs/day			
e, Ammonia (as N)	0.02	0.12					1	mg/L	lbs/day		·.	
1. Flow FLA	VALUE		VALUE	·	VALUE		1010	MOD		VALUE		
	0.704		82		0.59		1049	MGD	<u> </u>	<u> </u>		
g. Temperature ((winter)	14.2		VALUE		VALUE		7 :	. °⊂	:	VALUE	4.4	. •
h. Temperature (summer)	VALUE		VALUE		VALUE			°C	:	VALUE		
l. рн	6.4	6.8	MUMINIM	MAXIMUM			8	STANDAR	ם טאודג			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

PART B. Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

I. POLLUT-	2. MÀ	K 'X'	30 T T T T			EFFLUENT					NITS		AKE (optional)
	8. 8E-	D. BE- LIEVED AB- SENT	a. MAXIMUM D	AILY VALUE	b. MAXIMUM 3	ODAY VALUE	c.LONG TERM	AVRG. VALUE	d NO. OF	a. CONCEN-	b. MASS	AVERAGE	TERM E VALUE	NO. OI
(if available)	PRE- SENT	SENT	CONCENTRATION	(2) MASS	CONCENTRATION	-) (2) MASS	CONCENTRATION	(z) MASS	ANAL. YSES	TRATION	U. MASS	CONCENTRATION	(z) MA88	YSES
a. Bromide (24959-67-9)	х		<2.0	<12					. 1	mg/L	lbs/day			
b. Chiorine, Total Residual	X		<0.1	<0.58	·				8	mg/L	lbs/day			
a. Color	Λ.		10						1	PCU				
d, Fecal () Collform	Х		<16				·		8	N/100ml				
s. Fluoride (16984-48-8)	Х		1.3	7.6		·			1	mg/L	lbs/day	:		
i. Nitrato÷ Nitrite (as N)	х		0.61	3.6					1	mg/L	lbs/day			

ANT	2 60	h ===		rate of the same o	3. I	DAYVALL	ONG TERM	AVRG VALUE		4. U	1	3, 114	TAKE (optional	
ANT CAS (If avo	I VE				111 4001	idute)	1.7 000	AVRG. VALUE	d. NO. OF	a. CONCEN-	b. MASS	A VER	LUE	NO.C
			CONCENTRATION	(2) MASE	CONCENTRATION	(2) MASS	GENTRATION	(2) MASS	YSES		ļ	CONCENTRATIO	1) MASS	ARES
n Nitroganic Fotal Organic as Ni	X		1.5	8.8					1	mg/L	l Lbs/day			
COII end ed	X		<5	<29	19.6		<5.5		465	mg/L	lbs/day		85 g	1
Phosphorus # P), Total 7723-14-0)	Х		0.15	0.88										
		·- Æ,	0.13	0.00					1	mg/L	lbs/day			-
I) Aipha at otal	х		*(2)											
2) Beta 15 23 otal % ris. 95								 -			77			
Redium.	Х		*(2)		· · ·						-			
otal	Х		*(2)									,		
4) Radium 26, Total	Х		*(2)					·	·		,			
Sulfate u SO ₄) 14808-79-8)	X		130	764					1	mg/L	lbs/day			
Suffice (4)	X		<0.02						1	mg/L	lbs/day			
Suffite						 !								
4265-45-3) Surfactants	X		<0.1					·	8	mg/L	lbs/day			
. Aluminum:	X		<0.1	<0.59					11	mg/I.	lbs/dáy			<u> </u>
otal 7429-90-51	Х		140.	0.82					1	ug/L	lbs/day			ļ
Barlum, (1) otal (440-39-3)	Х		30.	0.18					1	ug/L	lbs/day			
Boron, otal 440-42-8)	х		<50.	<0.29					1	ug/L	lbs/day			
Cobalt, (1) otal 440-48-4)	х		<1.	0.01							lbs/day			1
Iron, Total 439-89-6)	х													
Magnesium,			300.	1.8			·		$\left \begin{array}{c} 1 \\ \end{array} \right $	ug/L	lbs/day			
439-95-41	Х	\dashv	7.0	41.					1	mg/I.	lbs/day			
Molybdenum, otal 439-98-7) Manganese,	Х		<20.	<0.12					1	ug/L	bs/day		· · · · · · · · · · · · · · · · · · ·	
439-96-5)	Х		21.	0.12					1_	ug/L	bs/day(
Tin, Total (440-31-5)	х		<50.	<0.29					1	ug/L]	.bs/day			
Titanium, otal 440-32-6)	Х		<5.	<0.03							bs/day			

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PART Call you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test.

PART Call you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test.

PART Call you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test.

If you are a primary industries, and total phenois. If you are not required to mark "X" in column 2-b for each pollutant you know or have reason you must test.

If you mark "X" in column 2-b for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant you must test.

Suits of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall.

See instructions for additional details and requirements.

But Water Deer in:	,		a la est de la desenvició de la	the among the first war and		EFFLUENT	(Total Control Control			4, U'	NITS	5. INT	TAKE (optio	
POLLUTANT AND CAS	2. M	HARK 'X'	- MAXIMUM	DAILY VALUE	TE MAXIMUM	SO DAY VALUE	CLONG TERM	allable) VALUE	d NO.0F	a, CONCENT	b. MASS	AVERAG	E VALUE	D. NO. OF
AND CAS NUMBER (Frigravallable)	ING L	SENT SENT	CONCENTRATION	(2) MASS	CONCENTRATION	(a) MASS	CONCENTRATION	(2) MASS	YSES	TRATION		(I) CONCENTRATION	[2] MASS	YSES
METALS, CYANID	E, AND	TOTAL PH	IENOLS	(CEECGREEN, EV.						+'	****	1		1
Total [7440-36-01]	Х		1.0	0.01		·		-	1	ug/L	lbs/day	-	<u></u>	<u> </u>
2M Arsenie, Total (7440-38-217.	ιX		<1.0	<0.01					1	ug/L	lbs/day		 	
SM. Beryllium Total, 7440-41-7)	Х		<1.	<0.01					1	ug/L	lbs/day	<u>, </u>		1.
4M, Cadmium, 5 Total (7440-43-9)	Х		0.4	0.002					1	ug/L	lbs/day		ļ	ļ
5M. Chromlum, 7, 101al (7440-47-3)	Х		<1.0	<0.01		<u> </u>		<u> </u>	1_	ug/L	lbs/day	<u>, </u>		<u> </u>
6M: Copper, Total (7650-80-8) &	Х		<10.	<0.06					1	ug/L	lbs/day	,		
7M Lead, Tatelly (9439 872)	'X		5.0	0.03					1	ug/L	lbs/day	,		
8M. Mercury Total (7439-97-61: 572)	Х		<0.2	<0.001				<u> </u>	1	ug/L	lbs/day	,	-	-
9M. Nickel, Total 2 (7440-02-0)	X		2.0	0.01					1	ug/L	lbs/day	<u>, </u>	ļ ·	
10M, Selenium, Total (7.782-49-2)	X		1.0	0.01					1	ug/L	lbs/day	<u>r </u>	-	-
11M. Silver, Total (7440-22-4)	х		<10.	<0.06				<u>.</u>	1	ug/L	lbs/day	<u>/</u>	ļ.	
12M. Thailium, Total (7440-28-0)	Х		<50.	<0.29					1	ug/L	lbs/day	,	 	
13M, Zinc, Total (7440-66-6)	X		10.	0.06					1	ug/L	lbs/day	<u>, </u>		
14M. Cyanide, Total (57-12-5)	X		<0.02	<0.12					4	mg/L	lbs/day	<u>, </u>	-	_
15M. Phenois, 2 Total	91 X I		<65.	<0.38	į				4	ug/L	lbs/day			Feb. 1445

2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)

DESCRIBE RESULTS

EPA Form 3510-2C (Rev. 12-80) Previous edition may be used. PAGE V-3

CONTINUE ON REVERSE

oregorepaga garajaga jareteta ertepaga eratatati bigita terigiti ili gili kili kila

エバワリスりょりら GPOLLUTANT CONTRACT TO A UNITS OF THE PROPERTY AKE (optionel) AND COMSTRACTION - VOLATILE COMPOUNDS E GLONG TERM AVRO VALUE & NO. OF D MASS VALUE SHOOF . CONCEN-CONCENTRATION SILLMAN (a) MAGE . YEES (1) CON TRATION 动性病: 1864 18 3 4 17 17 V Aerolote 1107/224 / Sall Χ <100. <0.58 1 ug/L lbs/dav iYe asiya sa Х <100. <0.58 1 ug/L lbs/day W.Bentage Х <10. <0.06 1 ug/L lbs/dav AV. Bis (Chloros methyl) Ether | |GA2-88-11 | H X *(2) BV 3romotom 25 (75-25-2) 2, 25 Χ < 10 <0.06 1 ug/L lbs/day 6V Carbon Warner Tatrachlorides (38-23-5) Х < 10 <0.06 1 ug/L lbs/dav 7V. Chlorobenzene (108-90-117-6 X <10 <0.06 1 ug/L 1bs/day 8V: Chlorodi bromomethers! <10. <0.06 1 ug/L lbs/day 9V. Chiorpethane (76-00-3) Х <10 <0.06. 1 ug/L lbs/day 10V. 2-Chloro-ethylvinyl Ether (110-75-8) < 10 <0.06 1 ug/L lbs/day 11V, Chloratorm (87-86-3) X <10. <0.06 1 ug/L lbs/day 12V Dichlaro Chi bromomethene (75-27-4) ·X <10 <0.06 1 ug/L lbs/day 13V. Dichlord 3kg difluoromethanos (78-71-8) *(2) 14V. 1.1 Dichloro ethane (75-34-3) <10. <0.06 1 ug/L 1bs/dav 16V. 1,2 Dichloro othene (107-08-2) <10. <0.06 ug/L lbs/day 16V.1,1-Dichlord <10. <0.06 1 ug/L 1bs/day 17V. 1,2 Dichloro propene (78-87-5) X <10 <0.06 1 ug/L lbs/dav 18V 1,3-Dichloros propylene 3 477 (542-78-6) X *(2)19V. Ethylbenzene (100-41-4) Χ <10 **<0.06** 1 lbs/dav ug/L 20V. Methyl Bromide (74-83-9) Х <10 <0.06 1 lbs/day ug/L

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<10

<0.06

21V. Methyl Chloride (74-87-3)

- Caracana

1

ug/L

lbs/day

CONTINUE					5	TN0020168		10	3	<u> </u>			Approved	R No158-R	0173
I POLL		MARK		report distriction of	(1) 日本の中では、またりにはいる。		EFFL	/				NITS		KE (opti	onal)
NUMB_(if available)	ATEST ING RE-	D. BE-	C ME.		DAILY VALUE	b. MAXIMUM 3	llable)		AVRG. VALUE	d NO.OF ANAL- YSES	8. CONCENTRATION	b. MASS	AYERAG		b. NO. OF ANAL- YSES
GC/MS FRACTION				(1) CONCENTRATION POUNDS (contil		CONCENTRATION	(2)	CONCENTRATION	12/ 5000	1363		 	TRATION	(2) MARR	YSES
22V. Methylene Chloride (78-09-2)	X			43	0.25					1	ug/L	lbs/day			
23V. 1,1,2,2-Tetra- chloroethane	Х			<10	<0.06					1	ug/L	lbs/day			
24V. Tetrechloro- ethylene (127-18-4)	X			<10	<0.06					1	ug/L	lbs/day			
25V. Toluena (108-83-3)	X			<10	<0.06					1	ug/L	lbs/day			
26V. 1,2-Trans- Dichloroethylene (156-60-5)	Х			<10	<0.06					1	ug/L	lbs/day	·		
27V. 1,1,1-Trl chloroethane (71-55-6)	X			<10.	<0.06	· · · · · · · · · · · · · · · · · · ·				1	ug/L	lbs/day			
28V. 1,1,2-Tri- chloroethane (79-00-5)	X			<10.	<0.06				· · · · · ·	1	ug/L	lbs/day			
29V Trichloro- ethylens (79-01-6)	X			·· <10.	<0.06					1	ug/L	lbs/day			
30V. Trichloro- fluoromethene (75-69-4)	Х			<10	<0.06					1	ug/L	lbs/day			
31V. Vlnýl Chloride (75-01-4)	·X	İ		<10	<0.06					1	ug/L	lbs/day			
GC/MS FRACTION	- ACI	D COM	POUN	DS											
1A. 2-Chloropheno (95-57-8)	Х			<5.0	<0.03		· · · · · · · · · · · · · · · · · · ·			1	ug/L	lbs/day		.·	
2A. 2,4-Dichloro- £ phenol (120-83-2)	Х			<5.0	<0.03					1	ug/L	lbs/day			
3A. 2,4-Dimethyl- phenol (168-67-9)	_х			<5.0	<0.03					1	ug/L	lbs/day			
4A. 4,8-Dinitro-O- Cresol (534-52-1)	х			<30	<0.18					1	ug/L	lbs/day	·		
5A. 2,4 Dinitro chenoi (51-28-5)	х			<20	<0.12				,	11	ug/L	lbs/day			
5A. 2-Nitrophenol 88-76-5)	х			<5.0	<0.03					1	ug/L	1bs/day			
A. 4-Nitrophenal 100-02-7)	Х			<30.	<0.18					1	ug/L	1bs/day			
BA. P-Chlord-M- Cresol (59-80-7)	х	·	·	*(2)											
A. Pentachloro- chenol (87-96-5)	Χ.			<30	<0.18	-				1 .	ug/L	lbs/day			
0A Phenol. 108-95-2	X			<5	<0.03				·	1	ug/L	lbs/day			·
11A. 2,4,6-Tri-		1									,_	11 /1			

And the second of the second o

<20

<0.12

1

ug/L

and the control of place and every securities the replacement of the secretaries

lbs/day

POLLUTANT	1.2.	MARK	T 'ਸ਼ਾਂ()	一种,多种的内部和各	"STOP" TURKER	d at 100 3.	EFFLU	· p			4. U	NITS	5	AKE (opti	onal)
				a MAXIMUM D		b. MAXIMUM 3		CLONG TERM	AVRG. VALUE	d NO.OF			A Y	TERM VALUE	b. NO. O
Ill over	RE-	D. BENT	VENT.	(I) CONCENTRATION	(e) MASS	CONCENTRATION		CONCENTRATION	(2) MASS	ANAL-	a. CONCEN- TRATION	b MASS	(1) CON	(2) MASS	ANAL
C/MS FRACTION						CONCENTRATION		CONCENTRATION				 	TRATION	,127 -2200	1
1B. Acenaphthene (83-32-9)	Х			<5.0	<0.03					1	ug/L	lbs/day			
25. Acensphtylene (208-96-8)	X			<5.0	<0.03		,			1	ug/L	lbs/day		1	
3B. Anthracene (120-12-7)	X			<5.0	<0.03	· .	-			1		lbs/day			
4B. Benzidine (92-87-5)	Y Y	-		<50. □	_<0.03					1		1bs/day		· · · · · · · · · · · · · · · · · · ·	
58. Benzo (a) & Anthracene (56-55-3)	<u>_</u> Х			<5.	<0.03					1		lbs/day		· .	
6B. Benzo (a) Pyrene (50-32-8)	X			<10.	<0.06					1		lbs/day	···································	 	
7B. 3,4-Benzo- 2 Ruoranthene 7 (205-99-2)	·X			<10	<0.06		,	-		1		lbs/day	· · · · · · ·		
8B. Benzo (ghi) Perylene (191-24-2)	X		'	<10.	<0.06					1		lbs/day			
9B. Benzo (k) ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	' X			<10.	<0.06		:			1		lbs/day			
10B. Bis (2-Chlorosthaxy) Methane (111-91-1)	Х			<5.0	<0.03					1		lbs/day			
11B. Bis (2-Chloro- ethyl) Ether (111-44-4)	Х			<5.0	<0.03				·	1		lbs/day			·
128. Bis (2-Chloro- isopropyl) Ether (39638-32-9)	·X			<5.0	<0.03			:		1	ug/L	lbs/day			
13B. Bis (2-Ethyl- hexyl) Phthalate (117-81-7)	x i			<5.0	<0.03					1	ug/L	lbs/day			
148. 4-Bromo (148) phenyl Phenyl Ether (101-65-3)	·X			<5.0	<0.03					1		lbs/day			
158, Butyl Benzyl Phthalete (85-68-7)	Х			<5.0°	<0.03					1		lbs/day			
16B. 2-Chloro- naphthalene (91-58-7)	X			<5.0	<0.03					1	ug/L	lbs/day			
17B. 4-Chloro- chenyl Phenyl Ether (7005-72-3)	Х			<5.0	<0.03					1		lbs/day			
18B. Chryene 2 218-01-9)	Х			<10.	<0.06					1		lbs/day			·
198. Dibenzo (a,h) Anthracene 53-70-3)	Х			<10	<0.06					1		lbs/day			,
08. 1,2-Dichloro- penzene (95-50-1)	Х			<5.0	<0.03					1	ug/L	lbs/day			
11B./1,3-Dichloro- penzene (541-73-1)	Х			<5.0	<0.03					1	ug/L	lbs/day			

EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER

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Form Approved No. 158-R0173

CONTINU	M PAG	E V-6				_TN002016	58:		103 :	13		Form	Approved	No. 158-R	0173
U.POLLU	N. 2.	MARK	'X'	医腹腔 网络克雷克	201 0年 新疆	3.	EFFLU	1			4. U	NITS	5.	KE (option	mal) 🏋 🤁
AND C NUMBER SE C(I/ miallable)	a re sr	h.e.	C DE-	a. MAXIMUM I		b. MAXIMUM 3	ilable) VALUE	CLONG TER	M AVRG. VALUE vallable)	d NO.OF	a. CONCEN-	b MASS	AVERAGE	TERM VALUE	NO.O
(If mostlable)	QUIR-	PRAT	SENT	(I)	(E) MASS	CONCENTRATION	(2) MARR	CONCENTRATIO	N 24 (2) MASS	YSES	TRATION		(I) CONCENT	(2) MASS	YSES
GC/MS FRACTION	- BA	SE/NE	JTRAL	COMPOUNDS	(continued)	81.5	mither program					ļ	<u> </u>		ļ
223, 1,4-D)chloro- benzene (196-46-7)	Х			<5.0	<0.03					1	ug/L	lbs/day		·.	
238, 3,3 Dichloro bentidine (91.94-1)	-X			<25.	<0.15					1	ug/L	lbs/day			
248. Diethyl 183 Phtheiste 742 (84-68-2)	Х			<5.0	<0.03		٠.			1	ug/L	lbs/day		. •	
25B. Dimethyl Phthalate (131-11-3)	X			<5.0	<0.03		Į.			1	ug/L	lbs/day			
268. DFN-Buty(3) Phthalate (84-74-2)	Х	, .		<5.0	<0.01					1	ug/L	lbs/day			
27B. 2,4-Dinitro- toluene (121-14-2)	X			<5.0	<0.03					1	ug/L	lbs/day			
288. 2,6-Dinitro- toluens (806-20-2)	X	 		<5.0	<0.03			:		1	ug/L	lbs/day		ar of or	
298. DI-N-Octyl Phthalate 50/6/16 (117-84-0)	Х		•	<10.	<0.03		·			1	ug/L	lbs/day			
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-68-7)	. X	ļ		*(2)			,	 							
318, Fluorenthene (208-44-0) \$ \$ \$ \$	X	 		<5.0	<0.03				,	1	ug/L	lbs/day		,	
328. Fluorens (86-73-7)				<5.0	<0.03					1	ug/L	lbs/day			
33B. Hexe chlorobenzene (118-71-1)				<5.0	<0.03					1	ug/L	lbs/day			
348. Hexa- chlorobutediene (87-68-3)	. **			<5.0	<0.03					. 1	ug/L	lbs/day			
35B. Hexachlorovicyclopentadiene (77-47-4)	X			<5.0	<0.03					1	ug/L	lbs/day			
36B. Hexachloroethane (67-72-1)	×			<5.0	<0.03					1	ug/L	lbs/day			
378. Indeno (1,2,3-cd) Pyrene (193-39-5)	X			<5.0	<0.03					1	ug/L	lbs/day			
38B. Isophorone (78-59-1)	Х			· <5.0	<0.03					1	ug/L	lbs/day			
39B. Naphthalone (91-20-3)	Х			<5.0	<0.03					1	ug/L	lbs/day			
40B. Nitrobenzene (98-95-3)	Х			<5.0	<0.03					1	ug/L	lbs/day			
41B. N-Nitro- sodimethylamine (62-75-9)	Х			*(2)										-	
42B. N-Nitrosodi- N-Propylamine (621-64-7)	x			⟨5.0	<0.03					1	ug/L	lbs/day			

POLLU	, ^{9.5} 2.	MARK	'X'		19g 网络外部,12	3.	EFFLU	Mary Mary and the	t to the patient	V1	4. U	INITS	3	KE (optio	onal)
200								CLONG TERM	AVRG. VALUE	d NO. OF	A. CONCEN-		AVER.	FRM	b. NO. O
(if available)	SE.	PRES	ART.	a, MAXIMUM D	(z) MASS	(1)	(2) MASS	CONCENTRATION		YSES	TRATION	b. MASS	(1) CONCEN-	{2} MASS	ANAL
GC/MS FRACTION	- BAS	SE/NE'	UTRAI	COMPOUNDS	(continued)					1			. '		
438. N-Nitro codiphenylamina (86-30-6)	1 1			<5.0	<0.03					1.	ug/L	lbs/day			
448, Phenanthrens (35-01-9) 3 (1944)				<5.0	<0.03					1	ug/L	lbs/day	1		
45B, Pyrene 200. (129-00-0)	X			<5.0	<0.03		<u> </u>			1	ug/L	lbs/day			
48B. 1,2,4- Tri chlorobenzene. [120-82-1]	X			<5.0	<0.03		<u> </u>			1	ug/L	lbs/day			
C/MS FRACTION		TICID	ES	in the second	\$ 13 X/SQV(\$) H		1 11	Ţ <u>-</u>		/	<u> </u>	ſ <u>'</u> '		 	
P. Aldrin (1) (1) (2) (2) (3) (3) (4) (4)			Х		<u> </u>		ļ		<u> </u>					<u> </u>	
2P. G-BHQ 319-84-8)	11		Х				<u> </u>							<u> </u>	
3F, β-8HQ (1) 319-85-71			Х		<u> </u>		<u> </u>	·						l	-
IP. γ BHQ //			X		l	·	1								
3P. δ-BHC (1) 319-86-8)			X		1										
3P. Chlordane 22- 57-74-9)			Х				·.								·
P. 4,4'-DDT 80-29-3)			Х		1]	
72-55-9)			х												
72-54-8)			Х												
0P, Dieldrin (1) (60-67-1)			Х										· .		· .
19. G-Endosulfart 115-29-7)			Х												
2P. β-Endosulfan 115-29-7)			Х						1				1	1	
3P. Endosulfan ulfate 1031-07-8)			Х						i					- 1	
4P. Endrin 72-20-8)			Х												
5P, Endrin			X						1						
6P. Heptechlor 76-44-8)			Х		,	i			,			·		· · · · · · · · · · · · · · · · · · ·	



CONTINUED FROM PAGE V-8

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1 POLLUTANT		A4 A 5346	' X '		er en leger	3	EFFLUENT			 -	A 11	NITS	S IN	TAKE (optic	nali
AND CAS NUMBER (if available)	A TEST	D. e.	CPE	B. MAXIMUM	DAILY VALUE	b. MAXIMUM 3		CLONG TERM	AYRG. VALUE	d NO.OF		r		G TERM E VALUE	b. NO. OI
(if available)	BE-	PART SENT	SENT	(I)	(2) MASS	CONCENTRATION	(2) MASS.	CONCENTRATION	(1) MASS	YSES	TRATION	D. MA33	(I) CONCEN-	(z) MASS	YSES
GC/MS FRACTION	- PE	STICIDI	ES (cor	ntinued)	24. 1. 1. 1.			<u> </u>	·				I		
17P. Heptachlor X Epoxide (1024-57-3)			X								•			,	
18P. PCB-1242 (53469-21-9)	X		_			<0.1		<0.004		23	ug/L			. 1	
19P. PCB-1254 (11097-69-1)			X											,	
20P, PCB-1221 育 (11164-28-2) 与			X												
21P. PCB-1232 33 {11741-16-5}		-	Х												
22P. PCB-1248 (12672-29-6)			х												
33P. PCB-1260 () (11096-82-5) : :	,		х												
24P. PCB-1016 (* 5) (12874-11-2)			Х			,			<i>(</i>						
25P. Toxaphena (8001-35-2)			х												

EPA Form 3510-2C (6-80)

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*Footnotes:

- (1) Long term data are for the period October 1984 through October 1988.
- (2) Did not analyze.

PLEASE PR R TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages, SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

TN0020168

LIQUID RAY TE SYSTE

Form Appro OMB No. 2040-0086 Approval proves 7.31.89.

V. INTAKE AND EFFLUENT CHARACTERISTICS (cc	ontinued from p	page 3 of Form 2	2-C;
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				EFFLUENT	· · · · · · · · · · · · · · · · · · ·			3. UN (specify if		4 1N	TAKE (option	āl!
1. POLLUTANT		DAILY VALUE	b, MAXIMUM 3	lable) VALUE	c.LONG TERM	AVRG. VALUE	d. NO. OF		niank)	A LONG	TERM	h. NO
	(1)	(2) MASS	(I)	(2) MASS	CONCENTRATION	(7) MASS	ANALYSES	A. CONCEN- TRATION	b. MASS	CONCENTRATION	(2) MASS	ANALY
a. Biochemical Oxygen Demand (BOD)			·							CONCENTION		
b. Chemical Oxygen Demand (COD)		·									· · · · · · · · · · · · · · · · · · ·	
c. Total Organic Carbon (TDC)			"DATA TO	BE SUBMITT	ED LATER"							
d. Total Suspended Solids (TSS)		٠.	·									
e. Ammonia (as N)										·		
f. Flow	VALUE		VALUE		VALUE					VALUE	,	
g. Temperature (winter)	VALUE		VALUE		VALUE			~C	· · · · · · · · · · · · · · · · · · ·	VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			°C		VALUE	······································	
i, pH	MINIMUM	MAXIMUM	MUMINIM	MAXIMUM				STANDARD	UNITS			

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutary which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT-		4K 'X				EFFLUENT				4. UI	VITS	5. IN T	AKE (optional	1)
ANT AND CAS NO.	8. BE-	b. se	a. MAXIMUM E	AILY VALUE	b. MAXIMUM 3	O DAY VALUE	c.LONG TERM	AVRG. VALUE	d.NO. OF	a. LONCEN-		A LONG	TERM	h. NO.
(if avallable)	PRE- SENT	SENT	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	(I)	(7) MASS	YSES	RATION	b. MASS	CONCENTRATION	(2) MASS	ANA VSE
9. Bromide (24959-67-9)													-	1
b. Chlorine, Total Residual		***********				~ · · · · · · · · · · · · · · · · · · ·								
c. Color														
d. Fecal Coliform												·		
e. Fluoride (16984-48-8)											<u> </u>			
f. Nitrete— Nitrite (as N)					· · · · · · · · · · · · · · · · · · ·									

CONDENSATE DEMINERALIZER REGENERATION WASTE

OMB No. 2040-0086 Approval expuses 7.31.88

EPA I.D. NUMBER (copy from Item 1 of Form 1)

TN0020168

PLEASE PR R TYPE IN	THE UNSHADED AREAS ON	ILY. You may report some o	or all o
this information on separate sh	heets (use the same format) inst	ead of completing these page	25.
SEE INSTRUCTIONS.		3	

ļ	V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-0	
1		
	DADTA V	THE PARTY OF THE PARTY OF THE

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

		·		EFFLUENT				3. UN		4. IN	ITAKE (opnon	al!
1. POLLUTANT	. a. MAXIMUM	DAILY VALUE	b, MAXIMUM 3	ODAY VALUE	C.LONG TERM	AVRG. VALUE	d, NO. OF	' (specify i	f blank) :	a LON	G TERM E VALUE	
	(1)	(2) MASS	CONCENTRATION	(2) MASS	(1)	(2) MASS	ANALYSES	A.CONCEN- TRATION	b. MASS	CONCENTRATION	(2) MASS	h NO C
a. Biochemical Oxygen Demand (BOD)										CONCENTRATION		
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)			"NO DI	SCHARGE"	·							
d. Total Suspended Solids (TSS)												
e, Ammonis (as N)												
f. Flow	VALUE		VALUE		VALUE					VALUE	<u></u>	
g. Temperature (winter)	VALUE		VALUE		VALUE		(.	°C	<u></u>	VALUE		-
h. Temperatura (summer)	VALUE		VALUE		VALUE			°C		VALUE		
я, рН — — — —	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM				STANDARI	DUNITS			

Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutar which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you man column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements

1. POLLUT	2. MA	RK 'X'				FFLUENT				4. UI	NITS	5. IN 1	AKE (options	11)
ANT AND CAS NO.	a. BE-	b, se-	a, MAXIMUM E	PAILY VALUE	b, MAXIMUM 30	lable)	c.LONG TERM	AVRG. VALUE	d.No. of	a. LONCEN-		a LONG AVERAG	TERM	b. NO. C
(if avallable)	3687	AB- SENT	CONCENTRATION	(2) MASS	CONCENTRATION	(7) MASS	CONCENTRATION	[2] MASS	ANAL- YSES	" RATION	b. MASS	CONCENTRATION	(2) MASS	YSES
a. Bromide (24959-67-9)		. '											/ /	
b Chlorine, Total Residual		:										,		
c. Color												,		
d. Fecal Collform			•											
e. Fluoride (16984-48-8)														*
f. Nitrata- Nitrita (as N)		-										· · · · · · · · · · · · · · · · · · ·		

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EPA I.D. NUMBER (copy from Item 1 of Form 1)

Form Apple
OMB No. 20 - 6086
Approval expres 7,31,88

PLEASE PLANT R TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.

SEE INSTRUCTIONS.

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

TN0020168

TANTATION	J must	brovide r	ne results o	i at least one			<u>llutant in t</u>	his table	e. Comple	te one tabl	e for ea	ch outfall.	See instruc	tions for addition	nal details.	
	.			75		2. EFFLUENT	·					3. UN (specify if		4. IN	TAKE Jornan	al i
1. POLLUTAN	8. I	MAXIMUR (1)	A DAILY VA			ODAY VALUE			Sies. VALI		or a	CONCEN-	·	PARTA		h NO C
a. Biochemical	<u> </u>	CENTRATIO	N (2) MA1	CONCEN	TRATION	(2) MASS	CONCENTR	ATION	(2) MASS	ANALY		RATION	b. MASS	CONCENTRATION	(2) MASS	ANALYS
Oxygen Demand (BOD)		•														
b. Chemical Oxygen Demand (COD)		•			,											
c. Total Organic Carbon (TOC)				·	"NO	DISCHARGE'	,									
d. Total Suspend Solids (TSS)	ed								· · · · · · · · · · · · · · · · · · ·	·			· · · · · · · · · · · · · · · · · · ·			
e. Ammonla (as I	V)				-								· .			1
f Flow	VAL	UE .		VALUE			VALUE							VALUE		
g. Temperature (winter)	VAL	UE		VALUE			VALUE					°C	······································	VALUE		
h. Temperature (summer)	VAL	UE		VALUE			VALUE					°C		VALUE		
i. pH	Мімі	MUM -	MAXIMUM	MINIMU	Й	MAXIMUM		><		-	s	TANDARD	UNITS			
colur	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ou must pr	maciny, or mid	mectry but expr	essiv, in	nation of their p	resence in y 	eline vou	I MIIST DEAVE	de the recult	e of at loa	st one analys ch outfall. Se	is for that po e the instruc	bsent. If you mark flutant. For other p ctions for additions	بالتناء والمحمودالم	والمسار والمراز والمراز
ANTAND					Ib MA	3. EFFL		CLONG	TERM AVE	C VALUE		-+	UNITS	5.11	NTAKE <i>(optio</i> NG TERM	mal)
CAS NO.	LEVECLIE PRE: A SENT S		(I)	(2) MASS		XIMUM 30 DAY (if available)		(i)	· · · · · ·	(z) MASS	INO. O ANAL- YSES	A. LONCEI		AVERA	GE VALUE	H. NO.
a. Bromide (24959-67-9)								CONCENTI	MATION					CONCENTRATIO	N	73.
b. Chlorine, Total Residual												-	1			
c. Color													<u> </u>			
d. Fecal Collform			-									ļ —————	-			- 18.
e. Fluoride (16984-48-8)													 			

f. Nitrate-Nitrite (as N)

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PLEASE PRINGS TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1

Metal Cl Waste

TN0020168

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STANDARD UNITS

Form Approved OMB No. 158-R0173

OUTFALL NO.

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

7.07

8.4

9.7

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details. 3. UNITS 2. EFFLUENT 4. INTAKE (optional) (specify if blank) b. MAXIMUM 30 DAY VALUE 8, LONG TERM AVERAGE VALUE . POLLUTANT a, MAXIMUM DAILY VALUE d. NO. OF L NO. OF a, CONCEN-TRATION ANALYSES b MASS (1) CONCENTRATION (1) ANALYSES (2) MASS (2) MASS (2) MASS (2) MASS a. Biochemical Oxygen Demand mg/L lbs/dav 7.2 42 (BOD) b. Chemical Oxygen Demand (COD) mg/L lbs/day 93 16 c. Total Organic Carbon (TOC) mg/L 1bs/day 4.2 25 d. Total Suspended Solids (TSS) 32 12.94 3.89 mg/L lbs/day 5.8 e. Ammonia (as N) lbs/day 0.18 mg/L 0.03 VALUE VALUE VALUE VALUE f. Flow 1bs/day 1.83 18 MGD VALUE VALUE VALUE VALUE g. Temperature °C (winter) VALUE VALUE VALUE VALUE h. Temperature °C (summer) MINIMUM MAXIMUM MINIMUM MAXIMUM

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT-	2. MA	RK 'X'			3.	EFFLUENT				4. U	NITS	5. INT	AKE (optional	')
ANT AND CAS NO.	A. BE-	D. DE-	a. MAXIMUM I	DAILY VALUE	b. MAXIMUM 3	O DAY VALUE	c.LONG TERM	AVRG. VALUE	d NO. OF	a. CONCEN-	b. MASS	8. LONG AVERAG	TERM E VALUE	b NO. OF
(if available)	SENT	SENT	(1) CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	ANAL- YSES	TRATION	D. MA33	CONCENTRATION	(2) MASS	YSES
a. Bromide (24959-67-9)	Х		<0.1	<0.58					1	mg/L	lbs/day			
b. Chlorine, Total Residual	Х		<0.1	<0.58		·	·		8	mg/L	lbs/day			
c. Color	X		10						1	PCU		·		
d. Fecal Coliform	Х		*(3)											
e. Fluoride (16984-48-8)	Х		0.2	1,2					1	mg/L	lbs/day			
f. Nitrate— Nitrite (as N)	Х		0.01	0.06	·				1	mg/L	lbs/day			

i. pH

8.2

		RK 'X'				EFFLUENT				4. U	NITS	5. IN	(optional	i)
CAS	A. BE- LIEVE	D.BE- DLIEVED AB- SENT		DAILY VALUE	b. MAXIMUM 3 (i) avai	lable)	NG TERM (if ava	AVRG. VALUE	d. NO. OF	B. CONCEN- TRATION	h *****	A BETO	Me	b. NO. OF
(If avail	BENT	SENT	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	(1)	(2) MASS	YSES	TRATION	b. MASS	CONCENTRATION	(2) MASS :	ANAL- YSE3
g. Nitrogen, Total Organic (as N)	Х	. :	0.39	2.3					1	mg/L	lbs/day			
h, Oll and Greese	X.		<5	<29	8.2		<5.2		35	mg/L	lbs/day			
i. Phosphorus (as P), Total (7723-14-0)	v		0.07	0.41		- 1		,	1	mg/L	lbs/day	·		
j. Radioactivity		1	0.0.7.	0.41		-			 	mg/L				
(1) Alpha, Total	X		*(2)										·	1
(2) Beta, Total	X		*(2)			•	·				,			
(3) Radium, Total	X -												······································	
(4) Radium 226, Total			*(2)										· · · · · · · · · · · · · · · · · · ·	
k. Sulfate (as SO ₄)	X		*(2)											
(14808-79-8)	<u>X</u>		320	1,870					1	mg/L	1bs/day		·	
(as S) m. Suifite	X		<0.2	<1.2					4	mg/L	1bs/day			
(as SO ₃) (14265-45-3)	Х		<0.1	<0.58					8.	mg/L	lbs/day			
n. Surfactants	Х		<0.1	<0.58					1	mg/L	lbs/day			1
o. Aluminum, Total (7429-90-5)	х		<50.	<0.29					1	ug/L	lbs/day			
p. Barlum, Total (7440-39-3)	Х		30.	0.18					1	ug/L	1bs/day		·······	
q. Boron, Total (7440-42-8)	X		90.						1	ug/L				
r. Cobalt, Total				0.53							1bs/day		•	
(7440-48-4) s. Iron, Total (7439-89-6)	X		<1.0	<0.006	· · ·				1	ug/L	lbs/day			
t. Magnesium,	Х		10.	0.06	0.69		<0.14		31	ug/L	lbs/day			
Total (7439-95-4) . Molybdenum,	х.		5.8	34					1	mg/L	lbs/day	· .		
Total (7439-98-7) v. Manganese,	Х		170.	0.99					1	ug/L	lbs/day			
Total (7439-96-5)	х		<5.	<0.03					1	ug/L	1bs/day			
w. Tin,-Total (7440-31-5)	X		<50.	<0.29					1	,	lbs/day			
x. Titanium, Total (7440-32-6)	х		<5.	<0.03			-		1.		lbs/day		·	
EPA Form 3510-		80)		10.03			PAGE V-2	<u></u>		ug/L	103/ uay	<u></u>	NTINUE ON D	

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Form Approved OMB No. 158-R0173

CONTINUED FROM PAGE 3 OF FORM 2-C

TN0020168

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, non—process wastewater outfalls, and non—required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2.	MARK	'x'	ŧ		3. 1	EFFLUENT				4. UI	VITS ·	1	AKE (option	
AND CAS NUMBER				a, MAXIMUM I	DAILY VALUE		O DAY VALUE	c.LONG TERM (if ava	AVRG. VALUE	d, NO.OF ANAL- YSES	a. CONCEN- TRATION	b MASS	8 LONG	TERM E VALUE	b. NO. OF
(if available)	RE-	D. BE- LIEVED PRE- SENT	SENT	(1)	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	YSES	TRATION	· :	(1) CONCEN-	{2} MASS	YSES
METALS, CYANID	E, AN	D TOTA	AL PHE	NOLS									<u> </u>		
1M. Antimony, Total (7440-36-0)	Х			<1.0	<0.006					1.	ug/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	Х			<1.0	<0.006					1	ug/L	lbs/day		· · · · · · · · · · · · · · · · · · ·	, ,
3M. Beryllium, Total, 7440-41-7)	Χ.			<1.0	<0.006					1	ug/L	lbs/day		· · · ·	·
4M. Cadmium, Total (7440-43-9)	X			0.2	0.001	-				1	ug/L	lbs/day			
5M. Chromium, Total (7440-47-3)	Х			<1.0	<0.006					1	ug/L_	lbs/day			
6M. Copper, Total (7550-50-8)	Х			<10.	<0.06	0.03		<0.02		31	ug/L	lbs/day			
7M. Lead, Total (7439-92-1)	X		*, *	<1.0	<0.006	0.29		<0.11		22	ug/L	lbs/day	Y		
8M. Mercury, Total (7439-97-6)	X			<0.2	<0.001					1	ug/L	lbs/day			
9M. Nickel, Total (7440-02-0)	X			3.0	0.02	!				1	ug/L	lbs/day			ļ
10M. Selenium, Total (7782-49-2)	X			<1.0	<0.006					1	ug/L	1bs/day			
11M: Silver, Total (7440-22-4)	Х			<10.	<0.06					1	ug/L	lbs/day			
12M. Thallium, Total (7440-28-0)	X			<50.	<0.29			, , , , , , , , , , , , , , , , , , , ,		1	ug/L	lbs/day	Y		
13M. Zinc, Total (7440-66-6)	X			<10.	<0.06					1	ug/L	lbs/day	y :		, :
14M. Cyanide, Total (57-12-5)	Х			<0.02	<0.12					4	mg/L	lbs/day	y		
15M. Phenols, Total	X		-	<5.0	<0.03					4	ug/L	lbs/day	У		<u> </u>

DIOXIN

2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)

I POLLUTANT	4/4/20	MARK X	er and an architecture	AND AND AND AND AND AND AND AND AND AND	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	EFFLUENT	gidiging a squartigger	tergie Statie Lie ktorie	40,00 S. O.		NITS 1944	5. IN1	TAKE (optio	nal) 🗝 🚶
HAND CASH		1 h 1 h	ONCENTRATION		DEMAXIMUM 1	illable)	C.LONG TERM	AVRG. VALUE	d NO.OF		b. MASS	a. L AVE	ALUE	NO.OF
GC/MS FRACTION	4 - VO	LATILE	CONCENTRATION	(1) mass 4	CONCENTRATION	354 (1)	CONCENTRATION		YSES	TRATION	32 1 1/2	(I) CONC	2) MASS	YSES
1V. Acrole 17				 	1 32 74 14 3	1 1 1 1 1 1	The transfer	理点的更强力。	4000				4 4 4	N 24 4 1
2V. Acrylonitrile		-	<100.	<0.58			 		1	ug/L	lbs/day		• •	
	Х_		<100.	, <0.58					1	ug/L '	lbs/day			
3V_Benzeque3.48 (71,43-2)	X		<10.	<0.06					1	ug/L	lbs/day			<u>1</u>
4V. Bis (Chloromethyl) Ether (542-88-1)	х		*(2)											
5V. Bromoform	x		<10.	<0.06					1	ug/L	lbs/day	;		
6V. Carbon Tatrachloride 1 (56-23-5)	х		<10.	<0.06					1	ug/L	lbs/day		· · ·	
7V. Chlorobenzene (108-90-7)	х		<10.	<0.06		, , , , , , , , , , , , , , , , , , , ,		'	1	ug/L	lbs/day	.		
BV. Chlorodi- bromomethene (124-48-1)	х		<10.	<0.06					1		lbs/day			
9V. Chloroethane (75-00-3)	y		<10.	<0.06					1		lbs/day	`	, ,	
10V. 2-Chloro- ethylvinyl Ether (110-75-8)	х		<10.	<0.06		· · · · · · · · · · · · · · · · · · ·			1	ug/L	lbs/day	·		
11V. Chloroform (67-86-3)	х		<10.	<0.06					1		1bs/day			
12V. Dichloro- bromomethane (75-27-4)	v		<10.											
13V. Dichloro- difluoromethane (75-71-8)	x			<0.06					1	ug/L	lbs/day			
14V. 1,1-Dichloro- ethane (75-34-3)	X		*(2) <10.	40.06					1	ug/L				
15V. 1,2-Dichloro- ethane (107-06-2)				<0.06			<u> </u>				lbs/day			-
16V. 1.1-Dichloro-	X		<10.	<0.06					1	ug/L	1bs/day			
17V. 1.2-Dichloro	Х		<10.	<0.06					1	ug/L	1bs/day			
18V. 1,3-Dichloro-	x	_	<10.	<0.06					1	ug/L	1bs/day			
542-75-6)	х		* (2)											
19V. Ethylbenzene (100-41-4)	х		<10.	<0.06					1	ug/L	lbs/day			
20V. Methyl Bromide (74-83-9)	х		<10.	<0.06					1	ug/L	lbs/day			
21V. Methyl Chloride (74-87-3)	х		<10.	<0.06					1		lbs/day		-	

CONTINUED COM	PAGE	V-4			EPA I.D.	TN002016	•	orm 1) OUTFAL	O7		·	Form	Approved OM	No. 158-R	0173
1. POLLU		MARK					FFLU	//			4. U	NITS	5.	E (option	
NUMBER	A TEST	D. BE-	C BE-	B. MAXIMUM		b. MAXIMUM 3		C.LONG TERM		d NO.OF	8. CONCEN- TRATION	b. MASS	AVERAG		b, NO.O ANAL YSES
(if available) GC/MS FRACTION				CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	(I)	(2) MASS	YSES	TRATION	 	(1) CONCENTRATION	(2) MASS	YSES
22V. Methylene	T		E COM							1	/I	lbs/day			-
23V. 1,1,2,2-Tetra-	Х			<10.	<0.06					1	ug/L '				
(79-34-5)	Х			<10.	<0.06					1	ug/L	lbs/day			<u> </u>
24V. Tetrachioro- athylene (127-18-4)	х			<10.:	<0.06					1	ug/L	lbs/day			
25V. Toluene (108-88-3)	x			<10.	<0.06					1.	ug/L	lbs/day			
26V. 1,2-Trans- Dichloroethylene (156-60-5)	х			<10.	<0.06					1	ug/L	lbs/day		-	,
27V. 1,1,1-TrI-	x			<10.	<0.06				***************************************	1	ug/L	lbs/day			
28V. 1,1,2-Tri- chloroethane (79-00-5)	x x			<10.	<0.06					1	ug/L	lbs/day			
29V. Trichloro-	X			<10.						1	ug/L	lbs/day			
30V. Trichloro- fluoromethane					<0.06						ug/L			· · · · · · · · · · · · · · · · · · ·	
(75-69-4) 31V. VInyl Chloride (75-01-4)	X			<10.	<0.06			,		1	ug/L	lbs/day			
C/MS FRACTION -	X ACII	O COM	POUN		<0.06					-	-6/-2	lbs/day			
1 A. 2-Chlorophenol 95-57-8)	х			<5.	<0.03					1	ug/L	lbs/day			
2A. 2,4-Dichloro- phenol (120-83-2)	x			<5.			-	:			7,	lbś/day		٠.	
3A. 2,4-Dimethyl- phenol (168-67-9)					<0.03					1	ug/L			·	
AA. 4,6-Dinitro-O- Cresol (534-52-1)	X X			<5.	_<0.03					1	ug/L ug/L	lbs/day		 	<u> </u>
5A. 2,4-Dinitro- phenol (51-28-5)					<0.18				 			lbs/day			<u> </u>
5A. 2-Nitrophenol	Х			<20.	_<0.12					1	ug/L	lbs/day			
	X			<5.	<0.03					1	ug/L/	lbs/day		· -	<u> </u>
7A. 4-Nitrophenol 100-02-7)	х			<30.	<0.18					1	ug/L	lbs/day			
BA. P-Chloro-M- Cresol (59-80-7)	х			* (2)											
PA. Pentachloro- phenol (87-86-5)	х			<30.	<0.18					1	ug/L	1bs/day			
10A. Phenol 108-95-2}	х			<5.	<0.03					1	ug/L	lbs/day			
IIA. 2,4,6-Ttl-	х			<20.	<0.12					1	ug/L	lbs/day			1.

CONTINUE ON REVERSE

1. POLLUT	2	MARK 'X'	1 .	2.00	3.1					1		7		
ASAND (EFFL	ICLONG TEST	AVEC VALUE	·		NITS	5	KE (option	onal)
NUM	ING	LIEVEDLIEVED PRE- AB- SENT SENT	8. MAXIMUM D		b. MAXIMUM 3	lable)		AVRG. VALUE	d NO.OF	10. CONCENT	b MASS	_AŸE	VALUE	b. NO. 01
` (If availa				(2) MASS	(1)	(2) MASS	(1) CONCENTRATION	(2) MASS	YSES	TRATION	U. MASS	(I) CONCERT	(2) MASS	YSES
GC/MS FRACTION	- BA	SE/NEUTRAL	. COMPOUNDS								 	722104		
18. Acenaphthene (83-32-9)	Х		<5 .	<0.03					1.	ug/L	lbs/day			
28. Acenaphtylene (208-96-8)	Х		<5.	<0.03		-			1	ug/L	lbs/day			
3B. Anthracene (120-12-7)	X		<5.	<0.03	·	·····			1	ug/L	lbs/day			
4B. Benzidine (92-87-5)	X		<50.	<0.29					1	ug/L	1bs/day			
5B. Benzo (a) Anthracene (56-55-3)	X		⟨5,	<0.03							lbs/day			
68. Benzo (a)	Δ		-\).	(0.03		· ·			1	ug/L	IDS/day			
Pyrene (50-32-8) 7B. 3,4-Benzo-	Х		<10.	<0.06					1	ug/L	lbs/day			
fluorenthene (205-99-2)	х		<10.	<0.06		•			1	ug/L	lbs/day			
8B. Benzo (ghi) Perylene (191-24-2)	х		<10.	<0.06					1	ug/L	lbs/day			
9B. Benzo (k) Fluorenthene (207-08-9)	х		<10.	<0.06					1	ug/L	lbs/day			
10B. Bis (2-Chloro- ethoxy) Methane (111-91-1)	х		⟨5.	<0.03				<i>.</i>	1	ug/L	lbs/day			
11B. Bis (2-Chloro- ethyl) Ether (111-44-4)	х		<5.	<0.03					1	ug/L	lbs/day			
128. Bis (2-Chloro- isopropyl) Ether (39638-32-9)	x		<5.	<0.03					1	ug/L	lbs/day			
13B. Bls (2-Ethyl- hexyl) Phthalate (117-81-7)	х		<5.	<0.03					1	ug/L	lbs/day	-		
148, 4-Bromo- phenyl Phenyl Ether (101-55-3)	х		<5.	<0.03					1	ug/L	lbs/day			
158, Butyl Benzyl Phthalate (85-68-7)	Х		<5.	<0.03					1	ug/L	1bs/day			
16B. 2-Chloro- naphthalene (91-58-7)	х		<5.	<0.03					1	ug/L	lbs/day	s :		
17B. 4-Chloro- phenyl Phenyl Ether (7005-72-3)	х		<5.	<0.03					1	ug/L	lbs/day			
18B, Chrysene (218-01-9)	х		<10.	<0.06					1	ug/L	lbs/day			
198. Dibenzo (a,h) Anthracene (53-70-3)	Х		<10.	<0.06					1	ug/L	lbs/day			
208. 1,2-Dichloro- benzene (95-50-1)	x		<5.	<0.03					1	ug/L	lbs/day			
218. 1,3-Dichloro- benzene (541-73-1)	v v		<5.	<0.03					1	ug/L	lbs/day			

EPA I.D. NUMBER (copy from It

Form 1) OUTFALL NUMBER 107

Form Approved No. 158-R0173

CONTINUED FROM	VI PAG	E V-6			<u>.</u> !	TN0020	168		0/	<u> </u>			Approved		
I. POLLUTANT		MARK					EFFLUENT		, j	·	4. UI	NITS		TAKE (option	,
AND CAS NUMBER	A TEST	D. BE- LIEVED PRE- SENT	C BE-	a. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	ilable) VALUE	c.LONG TERM	AVRG. VALUE		a CONCEN- TRATION	b, MASS	AVERAG	TERM E VALUE	D. NO. OF
(if available)	euin-	SENT	BRHT	(I)	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION		YSES	TRATION	<u> </u>	(I) CONCENTRATION	(2) MASS	YSES
GC/MS FRACTION	- BAS	SE/NE	JTRAL	. COMPOUNDS	continued)				the site said						
228. 1,4-Dichioro- benzene (106-48-7)				<5.	<0.03					1	ug/L	lbs/day			
23B. 3,3'-Dichloro- benzidine (91-94-1)	х			<25.	<0.15					1	ug/L	lbs/day			
24B. Diethyl Phthalate (84-66-2)	х			<5.	<0.03					1	ug/L	lbs/day			<u></u>
25B. Dimethyl Phthalate (131-11-3)	х			<5.	<0.03					1	ug/L	lbs/day			
26B. DI-N-Butyl Phthalate (84-74-2)	X			<5.	<0.03					1	ug/L	lbs/day			8
27B, 2,4-Dinitro- toluene (121-14-2)	х			<5.	<0.03					1	ug/L	lbs/day			
28B. 2,6-Dinitro- toluene (606-20-2)	х_			<5.	<0.03				-	1	ug/L	lbs/day			
	х			<10.	<0.06	,				1	ug/L	lbs/day			
30B. 1,2-Diphenyl- hydrezine (as Azo- benzene) (122-68-7)	х			* (2)											
	х			<5.	<0.03					1	ug/L	lbs/day			
32B. Fluorene (86-73-7)	х			<5.	<0.03				·	1	ug/L	lbs/day			
33B. Hexe- chlorobenzene (118-71-1)	x.			<5.	<0.03					1	ug/L	lbs/day			
chlorobutadiene (87-68-3)	x			<5.	<0.03					1	ug/L	1bs/day			
cyclopentadiene (77-47-4)	х.			<5.	<0.03				,	1	ug/L	lbs/day			
36B. Hexachioro- ethane (67-72-1) 37B. Indeno	x			<5.	<0.03					1	ug/L	lbs/day			
(1,2,3-cd) Pyrene (193-39-5) 38B. Isophorone	х.			<10.	<0.06					1	ug/L	lbs/day			2.7
(78-89-1)	x			<5.	<0.03					1	ug/L	lbs/day			
39B, Naphthalene (91-20-3)	х	·	\dashv	<5.,	<0.03					1.	ug/L	lbs/day	·		
408. Nitrobenzene (98-95-3) 418. N-Nitro-	х			<5.	<0.03	,				1	ug/L	lbs/day			
sodimethylamine (62-75-9) 42B, N-Nitrosodi-	Х		_	* (2)											
N-Propylamine (621-64-7)	х			<5.	<0.03					1	ug/L	lbs/day		NITINUE ON	<u> </u>

TN0020168 OSN 107

CONTINUED FROM		MARK		T	······································					* 27 s					1 1 1
AND						3. E		IOLONG TERM			4. UI	NITS .	5	KE (optio	
NUMB.	ATEST ING RE-	LIEVED	CBE	a, MAXIMUM C	AILY VALUE	b. MAXIMUM 3		c.LONG TERM	flable). VALUE	T ANAL-	a. CONCEN- TRATION	b. MASS	AVERA	ERM	b. NO. OI
						(I) CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	YSES	THATION		(I) CONCENTRATION	(z) MASS	YSES
GC/MS FRACTION	- BA	SE/NEU	JTRAI	L COMPOUNDS	continued)	·			<u> </u>	<u> </u>				<u> </u>	<u> </u>
438. N-Nitro- sodiphenylamine (86-30-6)	Х			<5.	<0.03					1	ug/L	lbs/day	·		
44B, Phenanthrene (85-01-8)	X			<5.	<0.03					1	ug/L	lbs/day			
45B. Pyrene (129-00-0)	X			<5.	<0.03					1	ug/L	lbs/day			
46B. 1,2,4 - Tri- chlorobenzene (120-82-1)	X			<5.	<0.03							lbs/day			<u> </u>
GC/MS FRACTION	- PES	STICIDE	:0							1	ug/L			<u> </u>	
1P. Aldrin	- 124	1						 		ļ				 	
(309-00-2)	<u> </u>		Х												
2P. Q-BHC (319-84-6)			х												
3P. β-BHC (319-85-7)			Х									-		<u> </u>	
4P. γ-BHC (58-89-9)			Х		,										
5P. δ-BHC (319-86-8)			Х						, .						
6P. Chlordene (57-74-9)			Х							-					
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)					<u>.</u>										
9P. 4,4'-DDD (72-54-8)			X												-
10P. Dieldrin (60-57-1)															
11P. a Endosulfan			X											-	
(115-29-7) 12P. β-Endosulfan			Х												
(1:15-29-7)			Х	·											:
13P. Endosulfan Sulfate (1031-07-8)			Х												
14P. Endrin (72-20-8)			X									,			
15P. Endrin Aldehyde (7421-93-4)			Х												
16P. Heptachlor (76-44-8)			X												



EPA I.D. NUMBER (copy from Item 1 or Form 1) OUTFALL NUMBER

CONTINUED FROM	1 PAGI	E V-8				TN00201	68	1	07			Foi	m Approved	OMB No. 158	3-R0173
1. POLLUTANT	2.	MARK	'X'				EFFLUENT				4. UI	NITS	5. IN	TAKE (opti	onal)
AND CAS	A TEST	D. BE- LIAVED PRA- SENT	C BE-	8. MAXIMUM E	PAILY VALUE	b. MAXIMUM 3	O DAY VALUE	C.LONG TERM	AVRG. VALUE	d, NO. OF	a, CONCEN-	b. MASS	A LONG	G TERM E VALUE	b. NO. OF
(if available)	OUIR ED	SENT	THER	(I)	{2} MASS	CONCENTRATION	(Z) MAGS	(1)		ANAL- YSES	TRATION	D. MASS	(I) CONCEN-	(2) MASS	YSES
GC/MS FRACTION	- PES	STICID	ES (co	ntinued)					10						
17P, Heptachlor Epoxide (1024-57-3)		<i>-</i> : →.	х				·		·						
18P. PCB-1242 (53469-21-9)			Х												
19P. PCB-1254 (11097-69-1)			X											·	
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			х												
22P. PCB-1248 (12672-29-6)			Х												
23P. PCB-1260 (11096-82-5)			Х								·			·	
24P. PCB-1016 (12674-11-2)			Х												
25P. Toxaphana (8001-35-2)		,	Х												

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PAGE V-9

* Footnotes:

- 1. Long term data are for the period October 1984 through October 1988.
- 2. Did not analyze
- 3. Not available

PLEASE PROOF R TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

Form Appr OMB No. 2004-0086 Approval expense 7-31-88

COOLING TOWER

BASIN

TN 0020168

PARTA . You		t prov	uida the	o roculte	of at le	ant our	analyci	ic for over	ev evel	Lutant in					(or osc		Con instruct	tions for addition	eral dotails	
	7 11103	rt prov	ride till		OT at 16	ast One		. EFFLU		iutaiit iii	tiiis tai	ole. Con	ibiete	one table	TOT Eac	3. UNI		T	TAKE Jorner	
1. POLLUTAN	+	, MAX	MUM	DAILY V	ALUE	b. MAXI		ilable)		C. LONG	TERM	AVRG. V	ALUE	I		(specify if	blank) ·	a LONG	S TERM	h NO
		(,	RATION	(z) M	A 5 %	CONCENT		(2) M		CONCENT		(2) M		d. NO. O	74. ر	ONCEN-	b. MASS	AVERAG	(2) MASS	ANALY
a. Biochemical Oxygen Demand (BOD)		<u> </u>	HALIOR.								- HALLON						 			
b. Chemical Oxygen Demand (COD)																				
c. Total Organic Carbon (TOC)			-			"DES	ILTIN	G BASI	IN IS	BEING	G USE	D TO R	OUTE	COOLIN	G WA	ΓER				
d. Total Suspend Solids (TSS)	ed					ТО	THE Y	нь мні	LE T	не сос	OLING	TOWER	BLO	WDOWN L	INE :	IS OUT				
e. Ammonia (as i						OF	SERVI	CE FOF	R REI	AIRS"						7				
f. Flow	V	LUE				VALUE				VALUE								VALUE		
g. Temperatura (winter)	V	LUE				VALUE				VALUE						^C		VALUE		
h. Temperature (summer)	\v /	ALUE				VALUE				VALUE						°C		VALUE		
i, pH	M	ับเพีย	M	MĀXĪMŪ	м	MINIMUR	4	MAXIMU	м .		>				Si	TANDARD	UNITS			
whic	h is lir	nited e	ither dir	ectly, or in	ndirectly	y but expr	essly, ir	n an effluei	nt limit	ations gui	deline, y	ou must p	rovide	the results o	of at leas	st one analys	is for that po	bsent. If you mark llutant. For other p ctions for addition	offutants for w	bích ýou m
	. MA	RK 'X		_						UENT						4.	STINL		NTAKE (optio	onal)
CASNO L	. BE	b, er- Ligyen		XIMUM E	PAILY	VALUE		XIMUM 3 (if avai	lable)	VALUE			AXPG lable)	. VALUE	NO. OI	IA. CONCLE	h. MAS	AVER.	NG TERM	b. 11.0
(if available)	PRE- SENT	SENT	CONCE	NTRATION	(2)	MASS	CONCE	NTRATION	(2)	MA55	CONCE	(1)	(2)	MASS	YSES	PATION	(). (WA)	CONCENTRATION	ON (2) MASS	Y 5
a. Bromide (24959-67-9)											,									
b. Chlorine, Total Residual																				1
c. Color																				• • • • • • • • • • • • • • • • • • • •
d. Fecal Coliform				•										·			<u> </u>			

e. Fluoride (16984-48-8)

f. Nitrate-Nitrite (as N)



EPA I.D. NUMBER (copy from Item 1 of Form 1)

TN0020168

Neutral We Tank

Form Approved OMB No. 158-R0173

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

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PART-A - You m	ust provide the	e results of at le	east one analysi	s for every pol	utant in this tat	ole. Complete	one table to					
以初端的 。	, ,		4	. EFFLUENT				3. UN (apecify i	IITS		TAKE (optional	
I POLITANT	e, MAXIMUM	DAILY VALUE	b, MAXIMUM 3	PAY VALUE	c.LONG TERM	AVRG. VALUE	d NO. OF		, olank)	a. LONG	TERM	h NO. OF
	(1)	(z) MASS	(1)	(2) MASS	(1)	(2) MASE (1)	d, NO. OF ANALYSES	- a, CONCEN- TRATION	b MASS	CONCENTRATION	(2) MASS 1/2	ANALYSES
a. Biochemical Oxygen Demand (BOD)	3.2	0.09					1	mg/L	lbs/day			
b, Chemical (COD)	12.	0.34					1	mg/L	lbs/day			
c. Total Organic Carbon (TOC)	. 2.8	0.08					1	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	64	1.8		89		23	135	mg/L	lbs/day		٠,	
e. Ammonis (as N)	0.53	0.02			·		1	mg/L 🦩	lbs/day			
1. Flow	*(3)	0.0034	0.08	4	VALUE	0.009	147	MGD		VALUE		
g. Temperature (winter)	41.6		VALUE		VALUE		3 ′	°C	•	VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			°C	•	VALUE		
I. pH	6.3	MAXIMUM 7.0	MINIMUM	MAXIMUM			3	STANDAR	D UNITS			3. 海影響

PART B. Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT-	2. MÅ	RK 'X'	e		3.	EFFLUENT	The Attention of the	4.4		4. U	NITS		AKE (optional,)
ANT AND	a. BE-	b. BE-	B. MAXIMUM D	DAILY VALUE	b. MAXIMUM 3	O DAY VALUE	c.LONG TERM	AVRG. VALUE	d NO. OF	a, CONCEN-	b MASS	8. LONG	TERM VALUE	NO. OF
(if available)	SENT	AB- SENT	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	YSES	TRATION	L MASS	CONCENTRATION	(2) MASS 14	YSES
a. Bromide (24959-67-9)	Х		<0.1	<0.003			·		1	mg/L	lbs/day		:	
b. Chlorine, Total Residual	Х		<0.1	<0.003	·				3	mg/L	lbs/day	·		
c. Calor	Х		20						1	PCU	-			
d. Fecal (F) Colliarm (3)	Х		·<10		·				1	N/100ml		,		
e. Fluoride (*) (16984-48-8)			0.2	0.006					1	mg/L	lbs/day			
f. Nitrate÷ Nitrite (as N)	Х		1.9	0.05		7			1	mg/L	lbs/day			

1: par -	2, MA	RK 'X'			3.1	EFFLUENT				4. U	NITS	5. INT	'A (optional	ŋ i
I. POLL ANT A CAS N			a. MAXIMUM D	AILY VALUE	b. MAXIMUM 3		G TERM	AVRG. VALUE	d. NO. OF		<u> </u>	AVERAG		b. NO. O
(If availab.	SENT	SENT.	CONCENTRATION	(2) MASS /	CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	ANAL- YSES	TRATION	b, MASS	(1) CONCENTRATION	MASS	ŶSES
Nitrogen, Total Organic as Ni	X		0.37	0.01					1	mg/L	lbs/day			
Oll and	X		<5	<0.14	13.8		<5 . 5		33	mg/L	lbs/day			
Phosphorus u P), Total 1723-14-0)	т. Х		0.03	0.001		_			1	mg/L	lbs/day			ļ
Radioactivity														
1) Alpha, otal	. X _{1.}		*(2)											
2) Beta, otal	Χ.		*(2)											
3) Radium, otal	X		*(2)										1	
4) Radium 3 26, Total 3	Х		*(2)											
Sulfate is SO ₄) 14808-79-8)	Х		40,000	1,135					1	mg/L	lbs/day			
Sulfide (as S)	Х		<0.02	<0.001					3	mg/L	lbs/day			
n. Sulfite or SO ₃) 14265-45-3)	Х		<0.1	<0.003					γ 3.	mg/L	lbs/day	•		
. Surfactants	Х		<0.1	<0.003					1	mg/L	lbs/day			
. Aluminum, otal 7429-90-5)	Х		590.	0.017		<u> </u>			1	ug/L	lbs/day			
. Barlum, otal 7440-39-3)	Х		60.	0.002					1	ug/L	lbs/day			1
. Boron, otal 7440-42-8)	X		⟨50.	<0.001					1	ug/L	lbs/day		· · · · · · · · · · · · · · · · · · ·	
Cobalt, otal 7440-48-4)	X		18	0.001					1	ug/L	lbs/day			
Iron, Total (439-89-6)	Х		5700	0.16				·	1	ug/L	lbs/day			
Magnesium, otal (439-95-4)	X		18	0.51		·			1	mg/L	lbs/day			<u> </u>
Molybdenum, otal (439-98-7)	X		<20.	<0.001		. ,, 			1	ug/L	lbs/day	, ,		
Manganese, otal 7439-96-5)	X		110.	0.003					1	ug/L	lbs/day	•		
7439-90-8) 7440-31-8)	^		110.	0.000			· · · · · · · · · · · · · · · · · · ·		1	ug/L	lbs/day	····		

EPA Form 3510-2C (6-80)

x. Titanium, Total (7440-32-6)

<5.

<0.0001

PAGE V-2

ug/L

lbs/day

CONTINUE ON PAGE V - 3

Form Approved SwiB No. 158-R0173

TN0020168

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CONTINUED FROM PAGE 3 OF FORM 2-C

PART Colf you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for, Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall. See Instructions for additional details and requirements.

				1 1 1 1 1 1	ery seculosations in the		EFFLUENT	•			4. UN	IITS		AKE (optio	nai)
1. POLLUTANT	2.	MARK	'x'	18 18 6 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		I MAXIMUM 3	O DAY VALUE	C.LONG TERM	AYRG. VALUE	d NO.OF	a. CONCEN-	أيوكي والمواعظة	a, LONG	TERM	b. NO.OF
AND CAS NUMBER (if available)	ATEST	b. se-	CBE	a. MAXIMUM I		(If ava	ilable)	(1) dua	(2) MASS	ANAL-	TRATION	b. MASS	(I) CONCEN-	(2) MASS	YSES
(if available)	QUIR-	SENT.	SENT	(1)	(2) MASS	CONCENTRATION	(2) MASS	CONCENTRATION	2. (.)	1			12, 12.0	Mir sa ilipas	anaşı (t. \$1
METALS, CYANID	E, ANI	D TOT	AL PHE	ENOLS (
1M. Antimony. Total (7440-36-0)	х			130	0.004					1	ug/L	lbs/day	1		·
2M. Arsenic, Total (7440-38-2)	Х			<1.0	<0.00003					1	ug/L	lbs/day			
3M. Beryllium, Total, 7440-41-7)	Х			<1.0	<0.00003					1 .	ug/L	lbs/day	7		
4M. Cadmium, Total (7440-43-9)	Х			0.7	<0.00002					1	ug/L	lbs/day	,		
5M. Chromium, Total (7440-47-3)	X			53.	0.002		,			1	ug/L	lbs/day	,	ļ	
6M: Copper, Total (7550-50-8)	Х			10.	0.0003					1	ug/L	lbs/day	7		-
7M. Lead, Total (7439-92-1)	Х			8.	0.0002			:		1	ug/L	lbs/day	7		
8M. Mercury: Tota (7439-97-6)	Х			1.7	0.00005					1	ug/L	lbs/day	7		·
9M. Nickel, Total (7440-02-0)	x			39	0.001					1	ug/L	lbs/da	y		-
10M. Selenium; Total (7782-49-2)	х			59.	0.002					1	ug/L	lbs/da	y		
11M. Silver, Total (7440-22-4)	X.			<10.	<0.0003					1	ug/L	lbs/da	у		
12M. Thallium, Total (7440-28-0)	x			<50.	<0.001					1	ug/L	lbs/da	У		
13M. Zinc, Total (7440-66-6)	X			10.	0.0003					1	ug/L	lbs/da	у		
14M. Cyanide, Total (57-12-5)	Х			<0.02	<0.0006					3	mg/L	lbs/dá	у		
15M. Phenois, Total	Х			. <5.	<0.0001					3	ug/L	lbs/da	у		E 1 . 1.1141

DIOXIN -

DESCRIBE RESULTS 2;3,7,8-Tetrachlorodibenzo-P Dioxin (1764-01-6)

CONTINUED LUC	_		_							TIV	JUZUIUU	001, 10	, 		
1. POLLUTANT	<u> </u>	MARK		seconference	Company of the state of	different mini 3.	EFFLUE	trade la piece de	time to see the see	ે _{જાન્} કુંકેલ્	4. U	NITS (설명)	11/3/14 5.	KE loptio	nal) in i
AND C NUMB	ING RE-	D. DE- LIEVED PRE- SENT	CRE	8. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	lla8le)	CLONG TERM	AVRG. VALUE	d NO.OF	a. CONCEN	1 2 2 3 3 3 3 4	8. L		0. NO. OF
GC/MS FRACTION	1 - VC	I ATIP	E COM	CONCENTRATION	de la passe et	CONCENTRATION		CONCENTRATION	(z) mass	YSES	TRATION	m ^33	(I) CONCER-	(2) MASS	ANAL-
1V. Acrolein (107-02-8)		LAIL	2 001	<100.	<0.003		国际	· 的数据 · 经证券		1	ug/L	11 - / 1	: '		
2Vi Acrylonitrila 3				<100.	<0.003							lbs/day			
3V. Benzane La (71,43-2)										1	ug/L	lbs/day		ļ·	•
4V. Bis (Chloromethyl) Ethet	X			<10.	<0.0003		•		7	1	ug/L	lbs/day			
(542-88-1) 8V: Bromotom	X			*(2)						·		lbs/day			<u> </u>
(76-28-2)	x			<10.	<0.0003		* *1			1	ug/L	lbs/day			
Tetrachloride (1) (56-23-5)	X.			<10.	<0.0003					1	ug/L	lbs/day			
7V. Chlorobenzena (108-90-7)	Х			<10.	<0.0003					1	ug/L	lbs/day			,
8V. Chlorodi (1) 4 bromomethane: ————————————————————————————————————	X			<10.	<0.0003										
9V. Chlorosthana / (75-00-3) / h	v			<10.	<0.0003						ug/L	lbs/day			
10V. 2-Chloro-										_1	ug/L	lbs/day			·
110-76-8) 11.V. Chloroform (87-66-3)	X			<10.	<0.0003					$-\frac{1}{}$	ug/L	lbs/day			
12V. Dichloro- promomethene 75-27-4)	X			<10.	<0.0003					1	ug/L	lbs/day			
3V. Dichloro- 31	_X			∠ ⟨10.	<0.0003					1	ug/L	1bs/day			
ifiuoromethana (75-71-8)	X			*(2)											
14V. 1,1-Dichloro- thane (75-34-3)	x			<10.	<0.0003		·			1	ug/L	lbs/day			
6V. 1,2-Dichloro- thane (107-06-2)	Х			<10.	<0.0003					1		lbs/day			
6V. 1,1-Dichloro thylene (75:35-4)	х			<10.	<0.0003						<u> </u>	lbs/day			
7V. 1,2-Dichloro- ropane (78-87-5)	y			<10.	<0.0003					1					
8V. 1,3-Dichloro- ropylene 3 542-75-6)				*(2)						$\frac{1}{ }$	ug/L	lbs/day			
9V. Ethylbenzene 100-41-4)	X		_												
OV. Methyl romide (74-83-9)			+	<10.	<0.0003					_1	ug/L	lbs/day			
1V. Methyl	X		_	<10.	<0.0003					1	ug/L	lbs/day			

EPA Form 3510-2C (Rev. 12-80) Previous edition may be used.

<0.0003

<10.

PAGE V-4

CONTINUE ON PAGE V-5

ug/L

lbs/day

21V. Methyl Chloride (74-87-3)

				_
CDA	ID MILLIAMO (cons. fo	and Idams I ad Darms I	OUTFALL NUMBER	
15.5	I.D. NOMBER (COPY II	om Hem I of Form I) OO ALL NO BER	
1	m1700001(0)			
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CONTINGED	PAGI	- V-4						<u> </u>					Approved	0. 150-110	,,,,
1. POLLU	2.	MARK	'X'			3	EFFLU	7			4. U	NITS	5.	E (optio	onali
AND C		I h	10.00	B. MAXIMUM I	AU V VALUE	b. MAXIMUM 3	O DAY V	CLONG TERM	AVRG. VALUE	d NO.OF	 				b. NO. OF
NUMBER (if available)	ING.	FRE	LIEVE	1. MAXIMOM I						I ANAL-	8. CONCEN- TRATION	b, MASS	A VERAG		ANAL-
					(z) MA88	(1) CONCENTRATION	(2) MASS	CONCENTRATION	(2).MASS	YSES			(1) CONCEN- TRATION	(2) MASS	YSE8
GC/MS FRACTION	- VO	LATIL	E CON	APOUNDS (contir	rued)	ļ						L	ll		
22V. Methylene			1			٠.									
Chioride (78-09-2)	Х			<10.	<0.0003	·			•	1	ug/L	lbs/day	1		1
23V. 1,1,2,2-Tetra- chlorosthane	•														
(79-34-5)	Х			<10.	<0.0003					1	ug/L	lbs/day			1
24V. Tetrachtoro-			 	1	10.0003						48/1	IDS/ Gay			
ethylene (127-18-4)	X		l	(10)	40 0000	į į		1	_	1 .	/1	lbs/day	ŀ		}
			 	<10.	<0.0003	 		 			ug/L	IDS/ Gay	-		
25V. Toluene (108-88-3)					<0.0003					1	, 1		1		
7 - V - V - V - V - V - V - V - V - V -	_X			<10.	(0.0003			·		1	ug/L	lbs/day			<u> </u>
26V. 1,2-Trans- Dichioroethylene				1											
(156-60-5)	X			L <10.	<0.0003					$\cdot 1$	ug/L	lbs/day	ŀ		
27V. 1,1,1-Tri-						1	···	t		t					
(71-55-6)	Х			(10	<0.0003			. 1		1	ug/L	11 - / 1	Į		
28V. 1.1.2-Tri-				<10.	10.000	·					- CB, L	lbs/day			<u> </u>
chloroethana (79-00-5)	,,			(10	40 0000	i			-	,]	- /-	11 - / 1			! .
	<u>X</u>		· · · · · · · · · · · · · · · · · · ·	<10.	<0.0003	ļ				1	ug/L	lbs/day			ļ
29V. Trichloro- ethylene (79-01-6)	1												Į.		
	_X			<10.	<0.0003	<u> </u>		1		1	ug/L	lbs/day	ſ		ľ
30V: Trichloro-											·				
fluoromethene (75-69-4)	X			<10.	<0.0003			l i		1	ug/L	lbs/day			
31V. Vinyl				<u></u>	10.0003			 			_ ug/ L	103/day			
Chloride (75-01-4)	$_{\rm X}$]		<10.	<0.0003	1				1	,_	lbs/day			
GC/MS FRACTION	لبستت	D COM	IDOLIN		10.0003			 		1	_ug/L	103/ 443			
	- 201	000	II OON												
1A. 2 Chiorophenol	[l						1		}		., ,, })		
(95-57-8)	X			<5.	<0.0001					1	ug/L	lbs/day			
2A. 2,4-Dichloro-		ł		']							
phenol (120-83-2)	X			<5.	<0.0001			1		1	ug/L	lbs/day	1	. 1	
3A, 2,4-Dimethyl-									****					····	
phenol (108-67-9)	Х			<5.	<0.0001					1	ug/L	lbs/day			
				\'\'\-	10.0001	 					-0,2	100/44)			·
4A, 4,6-Dinitro-O- Cresol (534-52-1)	х	1		(20	(0.0000	i		. [,		11 - / 1	1		
the transfer of the same of th	A			<30.	<0.0009					1	ug/L	lbs/day			
5A. 2,4-Dinitro- phenol (51-28-5)		i								. 1	,	,	ł		
pilanoi (51-28-5)	X			<20.	<0.0006					1	ug/L	lbs/day			
6A. 2 Nitrophenol	İ			į					. 7	T					
(88-75-5)	X			<5.	<0.0001				İ	1	ug/L	lbs/day	j		
7A. 4-Nitrophenol							·								
(100-02-7)	Х	}		<30.	<0.0009	ŀ		<u> </u>	ł	1	ug/L	lbs/day		į	
EA P.Chloro.M.				- \JV.	10.000							100/ uay			
6A. P-Chloro-M- Cresol (59-80-7)	Х		j							- 1	j	lbs/day			
				*(2)								ros/day			
9A. Pentachloro-	.				, o o o o o		.		ľ		,_		į	l	l
phenol (87-86-5)	X			<30.	<0.0009			<u> </u>	<u> </u>	1	ug/L	lbs/day	<u></u>	i	
10A. Phenol		- 1	}						7	T		7			
(108-95-2)	X		1	<5.	<0.0001		·			1	ug/L	lbs/day			
11A. 2,4,6-Tri-		$\neg \uparrow$										 -			
chlorophend4 (88-06-2)	Х	1	i	<20.	<0.0006	•	İ	the second of the second	• •	1	ug/L	lbs/day		ĺ	,
00.00-2)				1400	10.0000	1			l		ug/L	103/uay			

CONTINUED PAGE V-4

Form Approved @

Lo. 158-R0173

1. POLLU		MARK				3					0020168		SN 109		
AND				l	DAILY VALUE	3. b. MAXIMUM 3 (if ava	Q DAY	c.LONG TERM	AVRG. VALUE	d NO. OF		NITS	5.	KE (optio	mal) b. NO.OI
(If availar	ING RE-	D. DE	LIEVED AB SENT	(I)		(if ava	(2) MASS	(if avai	(z) MASS	ANAL-	a. CONCEN- TRATION	b, MASS	AYEA	ALUE (2) MASS	ANAL-
GC/MS FRACTION					' 1 · · · · · · · · · · · · · · · · 	CONCENTRATION		CONCENTRATION		1			TRATION		
1B. Acenaphthene (83-32-9)	X			<5.	<0.0001	c				1	ug/L	lbs/day			
28. Acenaphtylene (208-96-8)	X			<5.	<0.0001					1	ug/L	lbs/day			
3B. Anthracene (120-12-7)	X			<5.	<0.0001					1	ug/L	lbs/day			
4B. Benzidine (92-87-5)	X			<50.	<0.0001	·				1	ug/L	lbs/day			
Anthrecene (66-55-3)	Х			<5.	<0.0001			·		1	ug/L	1bs/day			-
6B. Benzo (a) Pyrene (50-32-8)	X			<10.	<0.0003	·				1.	ug/L	lbs/day			
78. 3,4-Benzo- Ruoranthene (205-99-2)	X			<10.	<0.0003					1	ug/L	lbs/day			
8B. Benzo (ghl) Perylene (191-24-2)	X			<10.	<0.0003	."				1	ug/L	1bs/day			,
9B. Benzo (k) Fluoranthene (207-08-9)	X			<10.	<0.0003					1	ug/L	lbs/day			
10B. Bis (2-Chloro- ethoxy) Methane (111-91-1)	X			<5.	<0.0001					1	ug/L	1bs/day			
11B. Bis (2-Chloro- ethyl) Ether (111-44-4)	_X			<5.	<0.0001					1	ug/L	1bs/day			
12B. Bls (2-Chloro- lsopropyl) Ether (39638-32-9)	Χ			<5.	<0.0001					1	ug/L	lbs/day			
139. Bis (2-Ethyl- hexyl) Phthalate (117-81-7)	Х			<5.	<0.0001		:			1	ug/L	lbs/day			
14B, 4-Bromo- phenyl Phenyl Ether (101-55-3)	_X			<u><</u> 5.	<0.0001					1		lbs/day			
158. Butyl Benzyl Phthalate (85-68-7)	Х		-	<5 .	<0.0001					1	ug/L	1bs/day			
168, 2-Chloro- nephthalene (91-58-7)	_X			<5.	<0.0001					1	ug/L	1bs/day	,		
17B. 4-Chloro- phenyl Phenyl Ether (7005-72-3)	х			<5.	<0.0001	·				1	ug/L	lbs/day			
18B. Chrysene (213-01-9)	Х			<10.	<0.0003			·	·	1	ug/L	lbs/day			
19B. Dibenzo (a,h) Anthracene (53-70-3)	Х			<10.	<0.0003					1	ug/L	1bs/day			
20B. 1,2-Dichloro- benzene (95-50-1)	Х			<5.	<0.0001					1	ug/L	lbs/day			
								1							

218. 1,3-Dichloro-benzene (541-73-1)

EPA Form 3510-2C (6-80)

<5.

<0.0001

lbs/day

	-				EPA I.D.	NUMBER (COPY	from Item 1 of F	orm 1) OUTFAL	LNUMBER	٦ ۽ ا					
CONTINUE	1 PAGE	E V-6				TN00201			09			Form	Approved	Vo. 158-R	0173
I. POLLU		MARK	'x'			3. 1	EFFLUE			<u> </u>	4. U	NITS	5.		nal) 🤫
I IS AND CA	ATEST	b. ss-	C. DE-	6. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	DAY VALUE	C.LONG TERM	AVRG. VALUE	d NO.OF		b, MASS	8 LONG	TERM EVALUE .	b. NO. OF
(If available)	ATEST ING L RE- QUIR- ED	PRAT	SENT	CONCENTRATION	(z) MASS	CONCENTRATION	(z) MASS	(1)	(z) MASS	YSES	TRATION	D. M.A.3.3	(I) CONCEN- TRATION	(2) MASS	YSES
GC/M8 FRACTION	- BAS	SE/NE	UTRAL	COMPOUNDS	(continued)										ļ
228, 1,4-Dichloro- benzene (106-46-7)	X			<5.	<0.0001					1	ug/L	lbs/day			
23B. 3.3 Dichloro- benzidine (91-94-1)	·X			<5.	<0.0001					1	ug/L	lbs/day			
24B, Diethyl	1 1			<5.	<0.0001		<u> </u>	-		1	ug/L	1bs/day			
25B. Dimethyl 30 Phthalate (131-11-3)	х			<5.	<0.0001					1	ug/L	lbs/day			
26B. DI-N-Buty[Х			⟨5.	<0.0001					1	ug/L	lbs/day			
278. 2,4-Dinitro- toluene (121-14-2)				\(\(\)	<0.0001					1	ug/L	lbs/day			
28B. 2,6-Dinitro- toluene (606-20-2)	y			<5.	<0.0001					1	. ug/L	lbs/day			
29B. DI-N-Octyl Phthalate (117-84-0)	X.			<10.	<0.0003					1	ug/L	lbs/day			
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)	X			*(2)					,			lbs/day			
31B. Fluoranthene				<5.	<0.0001				,	1	ug/L	lbs/day			
328, Fluorene (86-73-7) 4	Х			<5.	<0.0001					1.	ug/L	lbs/day			

EPA Form 3510-2C (6-80)

15 N

33B. Hexe chlorobenzene (118-71-1)

34B. Hexachlorobutadiene

35B. Hexachlorocyclopentadiena (77-47-4)

36B. Hexachloroethane (67-72-1)

37B, Indeno (1,2,3-cd) Pyrene (193-39-5)

388. Isophorone (78-59-1)

39B. Naphthalene

408. Nitrobenzene

42B. N-Nitrosodi-N-Propylamine

(91-20-3)

(98 - 95 - 3)

43B. N-Nitrosodimethylamine (62-75-9)

(621-64-7)

(87-68-3)

Χ

Х

Х

X

Χ

Χ

<5.

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ug/L

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THE	FRON	<u>T</u>					·							
′2.	MARK	.х.									NITS ·	5. 1	E (optio	onal)
ATEST	b.e.	C BE.	a, MAXIMUM I	DAILY VALUE	b. MAXIMUM 3	ilable)	CLONG TERM	AVRG. VALUE	d NO. OF	a. CONCEN-		8 LON		b. NO. 01
OUIR-	PRESENT	AB. SENT	CONCENTRATION	(2) MASS	CONCENTRATION	{2} MASS	CONCENTRATION	(2) MASS	YSES	TRATION	D. MASS	(I) CONCEN-	(2) MAGG	ANAL-
- BA	SE/NE	UTRA	L COMPOUNDS	(continued)								1		1
X			<5.	<0.0001				-	1	ug/L	lbs/day			
X			:: <5.	<0.0001			·		1	ug/L	lbs/day			
X			<5.	<0.0001					1	ug/L	lbs/day			
X	,		· <5.	<0.0001					1	ug/L	lbs/day			
- PES	TICID	ES												
		Χ.												
		Х						·						
		Х												
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		X												
	Z. A TEST ING REP GUINA ED - BA	Z. MARK A TEST LIEVED TEST LIEVED TEST SENT ADD TEST SENT ADD TEST SENT X X X X X	- BASE/NEUTRA X X X - PESTICIDES X X X X X X X X X X X X X	TENT CLEVE CONTRACTION TENT CLEVE CLEVE OF CONCENTRATION - BASE/NEUTRAL COMPOUNDS X	2. MARK X	1.	2. MARK X	2. MARK X 3. EFFLU 6. MAXIMUM DAILY VALUE 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. CLONG TRIM 6. MAXIMUM MAJOR V 6. MAXIMU	Description Description	T. MANK X	2. MARK - 2. MAXIMUM DAILY VALUE 5. MAXIMUM DAILY VALUE 6. MAXIMUM DAILY VALUE 6.		2. MARK X	2. MARK X 3. S. S. MAXIMUM DALY VALUE D. MAXIMUM BOOK STORE D. MASS



EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER

TN0020168

109

Form Approved OMB No. 158-R0173

CONTINUED FROM	1 PAGE	E V-8				.TN0020)168	10)9			Fo	m Approved (OMB No. 158	I-R0173
1. POLLUTANT	2.	MARK	'X'				EFFLUENT				4. UI	NITS		TAKE (opti	onal)
AND CAS NUMBER	A.TEST	b.e.	C. DE- LIEVEL AD- SENT	a. MAXIMUM D	AILY VALUE	b. MAXIMUM 3	O DAY VALUE	CLONG TERM	AVRG. VALUE	d NO.OF	I W. CUNCERT	b. MASS	a. LONG	TERM EVALUE	b. NO.OF
, (if available).	RL. GUIR ED	PRE-	SENT	(I)	(2) MASS	(I).	(2) MASS	(I)		YSES	TRATION	U. MA33	(I) CONCEN- TRATION	(2) MASS	YSES
GC/MS FRACTION	- PES	TICID	ES (co	ntinued)					•						
17P, Heptachlor Epoxide (1024-57-3)	. 4.		Х												
18P, PCB-1242 (53469-21-9)			Х												
19P. PCB-1254 (11097-69-1)			X												
20P, PCB-1221 (11104-28-2)		,	Х												
21P. PCB-1232 (11141-16-5)			Х												
22P. PCB-1248 (12672-29-6)			Х												
23P. PCB-1260 (11096-82-5)			Х		***										
24P. PCB-1016 (12674-11-2)			· X						′.					·	
25P. Toxaphene (8001-35-2)		!	Х												

EPA Form 3510-2C(6-80)

4.55 Sec. 19

PAGE V-9

Footnotes:

- (1) Long term data are for the period October 1984 through October 1988.
- Did not analyze.
- Batch discharge of 3,380 gallons.

OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

TN0020168

Form Appr OMB No 2040 0086

SEWAGE TRI

Approval expused 7 31 89

110

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

				. EFFLUENT				3. UN		4. IN	TAKE (option	al)
1. POLLUTANT	L	DAILY VALUE		ODAY VALUE	c.LONG TERM (i) avai	AVRG. VALUE	d, NO. OF	(specify if	hlank) ·	A LONG	TERM E VALUE	h. NO 0
	(1)	(2) MASS	(1)	(2) MASS	(1)	(2) MASS	ANALYSES	8. CONCEN- TRATION	b. MASS	CONCENTRATION	(2) MASS	ANALYS
a. Biochemical Oxygen Demand (BOD)								,				
b. Chemical Oxygen Demand (COD)												j
c. Total Organic Carbon (TOC)			"THIS SO	URCE IS TO	BE DELETE)''						
d. Total Suspended Solids (TSS)												
e. Ammonia (as N)												
f, Flow	VALUE		VALUE		VALUE					VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE		, .	°C		VALUE		
h. Temperatura (summer)	VALUE		VALUE		VALUE			°C		VALUE		
l. pH	MINIMUM -	MAXIMUM	MUMINIMUM	MAXIMUM				STANDARE	UNITS			

Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you man column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements

									4. U	NITS	5. IN 1	TAKE (optiona	1)
a. ar. Likved	b. ar-	a, MAXIMUM E	PAILY VALUE	b. MAXIMUM 3	ODAY VALUE	c.LONG TERM	AVRG. VALUE	d, NO. OF	a. LONCEN		a LONG AVERAG	TERM TERM	b. 110. c
SENT	SENT	CONCENTRATION	(2) MASS	(I)	(2) MASS	(I) CONCENTRATION	(2) MASS	YSES	NOITAP	D, MASS	CONCENTRATION	- (2) MASS	ANAL YSE!
					7-1-								
											,		
		-										·	
													\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
		2. MARK X' a, ac- b, ar- LIEVEGLEVEG FRE- SENT SENT	a. se b. se a, MAXIMUM C	a. ae- b. ar- a, MAXIMUM DAILY VALUE	a. ae- b. ae- a, MAXIMUM DAILY VALUE b. MAXIMUM 3	a. BE. D. BE a. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE (if available)	a. HE- D. HE- B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM. (If available) (If available) (If available)	a. HE- D. HE- B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM AVEG. VALUE (if available) (if available)	a. HE. D. HE. B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM AVEG. VALUE (I available) (If available) (If available) (I available) (I available)	a. HE- D. HE- B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM AVEG. VALUE (1, NO. OF ALLEVED LIEVED (1, available)	a. HE- D. HE- B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM AVEG. VALUE (10 available) ANAL ANAL PATION D. MASS	a. HE- D. HE- B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM AVEG. VALUE (I.NO. OF AVERAGE PRET APPROVED TO THE PROVIDED TO THE PR	a. HE D. HE B. MAXIMUM DAILY VALUE D. MAXIMUM 30 DAY VALUE C.LONG TERM AVRG. VALUE C.NO. OF A. LONCEN A LONCEN A VERAGE VALUE C.LONG TERM AVRG. VALUE C.NO. OF A VERAGE VALUE C.NO. OF A VERAGE VALUE C.NO. OF

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.



EPA I.D. NUMBER (copy from Item 1 of Form 1

STANDARD UNITS

Sewage Plant

reatment

TN0020168

1261

Form Approved OMB No. 158-R0173

OUTFALL NO.

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

MINIMUM

6.1

MAXIMUM

6.9

MUMINIM

MAXIMUM

8.3

PART A - You r	nust provide the	e results of at le	east one analysi	s for every pol	lutant in this tal	ole. Complete	one table fo	r each outfall.	See instruct	ions for addition	nal details.	
171117-1001	T	, results of the		EFFLUENT			:	3. UN	IITS	4. IN	TAKE (optiona	I) - 1 174.
1. POLLUTANT	a, MAXIMUM	DAILY VALUE	b. MAXIMUM 3		c.LONG TERM (If ava	AVRG. VALUE		. (specify i		8. LONG		h NO. OF
A complete the	(1)	(Z) MASS	(1)	(2) MASS	(1)	(2) MASS	ANALYSES	TRATION	b. MASS	(1)	(2) MASS "	ANACISES
a. Biochemical Oxygen Demend (BOD)		0.66	490	-	<44.3		211	mg/L	lbs/day		· · · · · · · · · · · · · · · · · · ·	
b. Chemical Oxygen Demend (COD)	13	3.3					1	mg/L	lbs/day			
c. Total Organic Carbon (TOC)	3.2	0.81					1	mg/L	lbs/day	U	•	
d. Total Suspended Solids (TSS)	2.0	0.50	370		<11.7		211	mg/L	lbs/day		·.	
e. Ammonia (as N)	0.02	0.005						mg/L	lbs/day			
f. Flow	.0302		0.179		0.053		1207	MGD	٠.	VALUE		
g. Temperature (winter)	VALUE 12.1		VALUE		VALUE		7	· °C		VALUE		
h. Temperature	VALUE		VALUE		VALUE			°C		VALUE		

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT-	2. MA	RK 'X'	:			EFFLUENT ?	11. 15 1. 1. 1.			4. U	NITS		AKE (optional)
				DAILY VALUE	b. MAXIMUM 3	ODAY VALUE	c.LONG TERM (if ava	AVRG. VALUE	d NO. OF	8. CONCEN- TRATION	b, MASS	a LONG AVERAG	E VALUE	NO. O
(if available)	PRE-	D, BE- LIEVED AB- SENT	(I) CONCENTRATION	(2) MASS	CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	YSES	TRATION	U. MA33	CONCENTRATION	(2) MASS	YSES
a. Bromide (24959-67-9)	х		<2.0	0.50			-		1	mg/L	lbs/day			<u> </u>
b. Chlorine, Total Residual	Х		0.11	0.03	2.1		0.3		1228	mg/L	lbs/day			
c. Color	Х		20						1	PCU		,		
d. Fecal Coliform	Х		<36		>2000		<227.4		219	N/100m1				
e. Fluoride (16984-48-8)	X		0.3	0.08					1	mg/L	1bs/day		·	
f. Nitrate Nitrite (as N)	v		1.1	0.28					1	mg/L	lbs/day			

1. POLL	7	RK.'X'		Martine.	3.	EFFLUENT				T	NITS	5. INT	AKE (optional)) (a. 141 a.)
CAS		D.BE- LIEVED AB- SENT	8. MAXIMUM I		b. MAXIM IM 3		NG TERM	AVRG. VALUE	d. NO. OF	 	1	A VERA	Me	D. NO. OF
(if avail	PRE-	AB-	CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1)	(2) MASS	ANAL- YSES	8. CONCEN- TRATION	b, MASS	CONCENTRATION	MASS	YSES
g. Nitrogen, Total Organic (as N)	Х		0.80	0.20				· · · · · · · · · · · · · · · · · · ·	1	ug/L	lbs/day			
h, Oll and Grease	· X		<5.	<1.3	,					mg/L	lbs/day			
1. Phosphorus (as P), Total (7723-14-0)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \													
J. Radioactivity			3.2	0.81					_1	mg/L	lbs/day			
(1) Alpha,	i –	T							<u> </u>					
Total	X	ļ	*(2)											t = c
(2) Beta, ag	X		*(2)					,		,				
(3) Radium, Total	X		*(2)											
(4) Radium 226, Total	Х		*(2)											
k, Sulfate (as SO ₄) (14808-79-8)	Х		49	12.3					1	mg/L	lbs/day			
I. Sulfide (as S)				<0.005		· · · · · · · · · · · · · · · · · · ·						,		
m. Suifite	X		<0.02	(0.005					4	mg/L	1bs/day		·	
(as SO ₃) (14265-45-3)	Х		<0.1	<0.03		. 1902 - 1904			8.	mg/L	1bs/day			
n, Surfactants	Х		<0.1	<0.03					1 .	mg/L	lbs/day			
o. Aluminum, Total (7429-90-5)	X		<50.	<0.01					1	ug/L	lbs/day			
p. Barlum, Total (7440-39-3)	Х		<10.	<0.003					1	ug/L	lbs/day		······································	
q. Boron, Total (7440-42-8)	Х		<50.	<0.01	·				1	ug/L	lbs/day			
r. Cobalt, Total (7440-48-4)											, , , ,			
s, Iron, Total	X		<1.	<0.0003					1	ug/L	lbs/day			
(7439-89-6) (5)	Х		20.	0.005	-	<u> </u>	.:	· · ·	1	ug/L	1bs/day			
Total (7439-95-4) ı. Molybdenum,	Х		12.	3.0					1	mg/L	lbs/day			
Total (7439-98-7) v. Manganese,	X		<20.	<0.005					1	ug/L	lbs/day			
Total (7439-96-5)	Х		<5.	<0.001			·		1	ug/L	lbs/day	,		
w. Tin, Total (7440-31-5)	X		<50 .	<0.01		. •				ug/L	lbs/day			
x. Titanium, Total (7440-32-6)	Х		10.	0.003				-		ug/L	lbs/day		-	
FPA Form 3510		201	±0.	0.003			DAGE V.			~6/	200, day		1	

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CON THE

TIEM V-B CONTINUED FROM FRONT

CONTINUED FROM PAGE 3 OF FORM 2-C

TN0020168

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PART C. If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, non—process wastewater outfalls, and non—required GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe to be absent. If you mark either columns 2-a or 2-b for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2.	MARK				3. E	FEI UENT					NITS	5. IN 1		,
				a, MAXIMUM	DAILY VÄLUE	b, MAXIMUM 3 (if avai	O DAY VALUE	c.LONG TERM (if ava	AVRG. VALUE ilable)	d NO.OF	a. CONCEN-	b, MASS	a, LONG AVERAG		B NO.OF
(if available)	RE-	D. BE- LIEVED PRE- SENT	SENT	(I)	(2) MABS	(1)	(2) MASS	(1) CONCENTRATION	(2) MASS	YSES	TRATION	1, 1, 1	(I) CONCEN- TRATION	(2) MASS	YSE5
METALS, CYANID	E, AN	D TOT	AL PHE	NOLS	/	·			2.						+
1M. Antimony, Total (7440-36-0)	X			<1.0	<0.0003					1	ug/L	lbs/day			
2M. Arsenic, Total (7440-38-2)	Х			<1.0	<0.0003					1	ug/L	lbs/day			
3M. Beryllium, Total, 7440-41-7)	Х			<1.	<0.0003					1	ug/L	lbs/day			
4M. Cadmium, Total (7440-43-9)	X			<0.1	<0.00003					1	ug/L	lbs/day			<u> </u>
5M. Chromium, Total (7440-47-3)	Х			<1.0	<0.0003				<i>,</i> .	1	ug/L	lbs/day			, .
6M. Copper, Total (7550-50-8)	Х	·		<10.	<0.003					1	ug/L	lbs/day			· ·
7M. Lead, Total (7439-92-1)	X			<1.0	<0.0003					1	ug/L	lbs/day			<u> </u>
8M. Mercury, Total (7439-97-6)	_X_			<0.2	<0.0005					1	ug/L	lbs/day			-
9M. Nickel, Total (7440-02-0)	X			<1.0	<0.0003	,				1	ug/L	lbs/day			
10M, Selenium, Total (7782-49-2)	Х			<1.0	<0.0003					1	ug/L	lbs/day			<u> </u>
11M. Silver, Total (7440-22-4)	X			<10.	<0.003					1	ug/L	lbs/day			·
12M. Thallium, Total (7440-28-0)	X			<50.	<0.013					1	ug/L	lbs/day			-
13M. Zinc, Total (7440-66-6)	X			60.	0.015					1	ug/L	lbs/day			
14M. Cyanide, Total (57-12-5)	Х			<0.02	<0.005					4	mg/L	lbs/day			<u> </u>
15M. Phenols,	X		ļ	<5.0	<0.001					4	ug/L	lbs/day			<u> </u>

DIOXIN

2,3,7,8-Tetrachlorodibenzo-PDioxin (1764-01-6)

POLLUTANT			enial standard receive	A CAN DO CARGO ANOMA PROFESSOR	sandan rente tribita		Zaranci a zazaza i			020168	111	~~~~~		<u>-</u>
AND C					Th MAXIMUM 1	EFFLUE	LOUGHERM	AVBG VALUE	编建设设计	: :: 4. U		5.	KE (optio	nal) 🚟 🔄
NUME (if availa	ING	LIEVED LIEVED AB-	8. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	ilable)	(if av	AVRG. VALUE	ANAL.	a CONCEN- TRATION	b. MASS	AŸ5	FRM	D NO.OF
GC/MS FRACTION	V - VC	DI ATU E COM	CONCENTRATION	The state of the s	CONCENTRATION	(0)	CONCENTRATION	(2) MASS	YSES	1 1 1	17.	(1) CONCE	(2) MASS	YBES
1V. Acrolein (107-02-8)			<100.			The second secon		斯森斯斯 1979年	is (100 /T	lbs/day		b. Mit 1	77 - 3 - (
2V: Acrylonkrile (107-13-1)	X			<0.03	<u> </u>			·	1	ug/L		·		
3V. Benzene	X		<100.	<0.03					1	ug/L	lbs/day			
4V. Bis (Chloromethyl) Ether	X		<10. *(2)	<0.003					1	ug/L	lbs/day			
(542-88-1) 5V. Bromoform (75-25-2)	37			40.002					1	/T	11-0/10-			
6V. Carbon Tetrachloride	X		<10.	<0.003					1		1bs/day			
(56-23-5) 7V. Chlorobenzene (108-90-7)	.ł		<10.	<0.003		•			1		1bs/day		·	
8V. Chlorodi- bromomethane	X		<10.	<0.003				· · · · · · · · · · · · · · · · · · ·	1		1bs/day			
(124-48-1) 9V. Chloroethane (75-00-3)	X		<10.	<0.003					1		1bs/day			
10V. 2-Chloro- ethylvinyl Ether (110-75-8)	X		<10.	<0.003					1		lbs/day			
11V. Chloroform	X		<10.	<0.003					1		lbs/day			
(67-66-3) 12V. Dichloro-bromomethane	X		36.	0.009					1	ug/L	lbs/day			
(75-27-4) 13V. Dichlorodifluoromethane	X X		<10.	<0.003					1	ug/L	lbs/day			
(75-71-8)			*(2)											
ethane (75-34-3)	Х		<10.	<0.003					1		lbs/day			
ethane (107-06-2) 16V. 1,1-Dichloro	X		<10.	<0.003			·		1	ug/L	1bs/day			
ethylene (75-35-4)	X		<10.	<0.003					1	ug/L	lbs/day			
propene (78-87-5) 18V. 1,3-Dichloro- propylene	X		<10.	<0.003					1	ug/L	lbs/day			
(542-75-6)	X		*(2)									-		·
(100-41-4)	X		<10.	<0.003					1	ug/L	lbs/day			
Bromide (74-83-9)	X		<10.	<0.003					1	ug/L	lbs/day			
21V. Methyl Chloride (74-87-3)	X		<10.	<0.003					1	ug/L	1bs/day			

CONTINUE	I PAGE	E V-4			EPA I.D.	NUMBER (copy for TN0020168		Form 1) OUTFAL				Form	Approved	(o. 158-R	0173
1. POLLU	2.	MARK	٠x٠				FFLU				4. U	NITS	5.	KE (option	
AND CAS NUMBER	A TEST	D. BE- LIEVED PRE- SENT	C. BE-	a. MAXIMUM	DAILY VALUE		lable)	C.LONG TERM	AVRG. VALUE	d NO.OF	8. CONCEN- TRATION	b. MASS	A LONG	TERM	D. NO. OI
	1 2 2					CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	YSES	IRATION		(I) CONCENTRATION	(2) MASS	YSES
GC/MS FRACTION	i – VO	LATIL	E COM	IPOUNDS (conti	nued)	<u> </u>		ļ		 					
22V. Methylene Chloride (75-09-2)	Х			<10.	<0.003					1	ug/L	lbs/day			
23V. 1,1,2,2-Tetra- chloroethane (79-34-5)	X			<10.	<0.003					1	ug/L	lbs/day		·	
24V. Tetrachloro- ethylene (127-18-4)	X			<10.	<0.003					1	ug/L	lbs/day			
25V. Toluene (108-88-3)	Х			<10.	<0.003					1	ug/L	lbs/day			
26V. 1,2-Trans- Dichloroethylene (156-60-5)	X			<10.	<0.003					1	ug/L	lbs/day			
27V. 1,1,1-Tri- chloroethane (71-55-6)	X			<10.	<0.003					1	ug/L	lbs/day			
28V. 1,1,2-Tri- chloroethane (79-00-5)	Х			<10.	<0.003					1	ug/L	lbs/day			
29V. Trichloro- ethylene (79-01-6)	X			<10.	<0.003					1	ug/L	lbs/day			
30V. Trichloro- fluoromethene (75-69-4)	X		·	<10.	<0.003					1	ug/L	lbs/day		•	
31V. Vinyl Chloride (75-01-4)	Х			<10.	<0.003					1	ug/L	lbs/day)	
GC/MS FRACTION		D COM	IPOUN												
1A. 2-Chlorophenol (95-57-8)	X			<5.0	<0.001					1	ug/L	lbs/day			
2A. 2,4-Dichloro- phenol (120-83-2)	х			<5.0	<0.001					1	ug/L	lbs/day			
3A. 2,4-Dimethyl- phenol (165-67-9)	X			<5.0	<0.001					1	ug/L	lbs/day			
4A. 4,6-Dinitro-O- Cresol (534-52-1)	X			<30.	<0.008					1	ug/L	lbs/day		*	
5A. 2,4-Dinitro- phenol (51-28-5)	х			<20.	<0.005					1	ug/L	lbs/day	÷		
6A, 2-Nitrophenol (88-75-5)	Х			<5.0	<0.001					1	ug/L	lbs/day			
7A. 4-Nitrophenol. (100-02-7)	X			<30.	<0.008					1	ug/L	lbs/day	-		
8A. P-Chloro-M- Cresol (59-60-7)	X			*(2)								,			
9A. Pentachloro- phenol (87-86-5)	Х			<30.	<0.008				`	1	ug/L	lbs/day	-		
10A. Phenol (108-95-2)	X			<5.0	<0.001					1	ug/L	lbs/day			
11A. 2,4,6-Tti- chlorophenol (88-06-2)	X			<20.	<0.005					1	ug/L	lbs/day			

1. POLLUZIO	2.	MARK 'X'		11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3. W. A. A. 3.	EFFLU				4. U	NITS	3	KE (opti	onal)
AND	A TEST	D. BE. C	T. S MAYIMI	M DAILY VALUE	b. MAXIMUM 3		E C.LONG TERM	AVRG. VALUE	d NO.OF		1	ΑΫ́Ε	ERM VALUE	b. NO. OF
(if availa	NE-	PRE- AI SENT SE	ONCENTRAT	ION (2) MASS	CONCENTRATION	. (z) M255 .	(I)	(Z) MASS	ANAL- YSES	TRATION	b. MASS	(I) CONCER-	(2) MASS	ANAL-
GC/MS FRACTION	- BA	SE/NEUTF	AL COMPOUN	DS								1441104		
18. Acenephthene (83-32-9)	Х	<u> </u>	<5.0	<0.001					1	ug/L	lbs/day			
2B. Acenephtylene (208-96-8)	X		<5.0	<0.001		•	·	·	1		lbs/day			
38. Anthracene (120-12-7)	X		<5.0	<0.001					1	ug/L	lbs/day			
4B. Benzidine (92-87-5)	X		<50.	<0.013					1	ug/L	lbs/day			
5B. Benzo <i>(a)</i> Anthracene (56-55-3)	X		<5.	<0.001					1	ug/L	lbs/day			
68. Benzo <i>(a)</i> Pyrene (50-32-8)	Χ		<10.	<0.003				-	1		lbs/day	:		
7B. 3,4-Benzo- fluoranthene (205-99-2)	Х		<10	<0.003					1		lbs/day			
BB. Benzo (ghi) Perylene (191-24-2)	Х		<10.	<0.003					1		lbs/day		:	
9B. Benzo (k) Fluorenthene 207-08-9)	Х		<10.	<0.003					1		lbs/day	· · · · · · · · · · · · · · · · · · ·		
OB. Bis (2-Chloro- thoxy) Methane 111-91-1)	Х		<5.0	<0.001					1		lbs/day			
11B. Bis (2-Chloro- ethyl) Ether (111-44-4)	Х		<5.0	<0.001							lbs/day			
12D Die /O Chiere					·									ı

ug/L

ug/L

ug/L

ug/L

ug/L '

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1

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1

EPA Form 3510-2C (6-80)

12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)

13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)

158. Butyl Benzyl Phthalate (85-68-7 X

Х

X

14B. 4-Bromophenyl Phenyl Ether (101-55-3)

168. 2-Chforonaphthalene (91-58-7)

17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)

18B. Chrysene (218-01-9)

19B. Dibenzo (a,h) Anthracene (53-70-3)

208. 1,2-Dichlorobenzene (95-50-1)

218. 1,3-Dichlorobenzene (541-73-1) <5.0

<5.0

<5.0

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<0.001

EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER

TN0020168 111

I. POLLU	7 PAG	MARK	·x·		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3. 1	EFFLU				4. UI	NITS	5.	E (optio	nal)
AND CAS				a MAXIMUM	DAILY VALUE	b. MAXIMUM 3	DAY VALUE	c.LONG TERM	AVRG. VALUE	d NO.OF	a. CONCEN-	T	A LONG	TERM E VALUE	b. NO. OF
NUMBER (if available)	ING RE-	D. BE- LIEVED PRE- SENT	AB- EENT	(i)	(z) MASS	CONCENTRATION	(2) MASS	(1)	(z) MASS	ANAL- YSES	TRATION	b, MASS	(I) CONCEN-	(2) MASS	YSES
GC/MS FRACTION					L	CONCENTRATION		CONCENTRATION				·····			
228. 1,4-Dichloro-				001111 001100	,										
benzene (106-46-7)	X			<5.0	<0.001				}	1	ug/L	lbs/day	,		
23B. 3,3'-Dichloro-															
benzidine (91-94-1)	X			<25.	<0.006	ŀ				1	ug/L	lbs/day			<u> </u>
248. Diethyl															
Phthalats (84-66-2)	Х			<5.0	<0.001					11	ug/L	lbs/day	7		
25B. Dimethyl						,							{	,,	
(131-11-3)	X			<5.0	<0.001			<u> </u>		1	ug/L	1bs/day			ļ
26B. Di-N-Butyl										,					
(84-74-2)	X	,		<5.0	<0.001					1	ug/L	lbs/day	1		1
278. 2,4-Dinitro-			•			· · ·				,	/-	11 - / 1			1
toluene (121-14-2)	X			<5.0	<0.001			ļ		1	ug/L	1bs/day	1		
28B. 2,6-Dinitro- toluene (606-20-2)										,	/T	lbs/day]		
	X			<5.0	<0.001	ļ				1	ug/L	IDS/day	1 i		
29B. Di-N-Octyl Phthalate									:	,		lbs/day		+ 5	
(117-84-0)	X	·		<10.	<0.003	ļ				1	ug/L	IDS/day	 		
30B. 1,2-Diphenyi- hydrazine (as Azo-	7.7			1.40)	}							-			
benzene) (122-66-7)	<u>X</u>			*(2)				·	· · · · ·				<u> </u>		
31B, Fluoranthene (206-44-0)				45.0	<0.001					1	ug/L	lbs/day		-	
1.7846.74	<u>X</u>			<5.0	<0.00T	 				<u>.</u>	ug/L	103/ 449			
328. Fluorene (86-73-7)				45.0	<0.001	}				1	ug/L	lbs/day			
33B. Hexa-	X			<5.0	(0.001	1					46/11	100744	<u> </u>		
chlorobenzene (118-71-1)	Х			<5.0	<0.001					1	ug/L	lbs/day	,		
34B. Hexa-								ļ ————		\			 		
chlorobutadiene (87-68-3)	Х			<5.0	<0.001					1 1	ug/L	lbs/day	1		
35B. Hexachloro-															1
cyclopentadiene (77-47-4)	X		ļ	<5.0	<0.001					1	ug/L	lbs/day	1		
36B. Hexachloro-															
ethane (67-72-1)	Х		j	<5.0	<0.001					1	ug/L	lbs/day	1 :		ļ.
378. Indeno (1,2,3-cd) Pyrene											,_	. , .			
(193-39-5)	X			<10.	<0.003					1	ug/L	lbs/day	1		↓
38B. Isophorone									}	_	,_	,, ,,			
(78-59-1)	X			<5.0	<0.001					1	ug/L	lbs/day	1		
39B. Naphthalene (91-20-3)									1	1	ug/L	lbs/day	<u> </u>		
(51-20-3)	X			<5.0	<0.001	ļ . <u>-</u> ·		ļ			ug/L	103/day			
40B. Nitrobenzene (98-95-3)		"					-	-		1	ug/L	lbs/day	,		
41B. N-Nitro-	X			<5.0	<0.001	 		ļ			ug/L	103/uay			+
sodimethylamine	v			* (2)											1
(62-75-9) 42B, N-Nitrosodi-	X			*(2)	· · · · · · · · · · · · · · · · · · ·	 		<u> </u>			 				
N-Propvismine	X			<5.0	<0.001] 1	ug/L	lbs/day	<i>i</i> 1		1
(621-64-7)	Λ	1	I	\J.U	1 10.001	1		1	1	l					<u> </u>

CONTINUE

I PAGE V-6

(o. 158-R0173

Form Approved

1. POLLV	_	MARK				3. [FFEL					NITS		VE (13.11	
AND					· · · · · · · · · · · · · · · · · · ·	Ib. MAXIMUM 3	DAY	CLONG TERM	AVRG VALUE	· 1.	4. 0	NIIS	5	KE (opti	
NUMBE (if available)	ING	LIEVED	LIEVED	8. MAXIMUM ((1) CONCENTRATION	AILY VALUE	b. MAXIMUM 3 (If avai	(2) MASS	c.LONG TERM (if ava		7 ANAL-	8. CONCEN- TRATION	b. MASS	AVERA	EVALUE	D. NO OI
GC/MS FRACTION						CONCENTRATION	(2) mass	CONCENTRATION	(2) MASS	, YSES			(1) CONCENTRATION	(2) MASS	YSES
43B. N-Nitro- sodiphenylamine	X			<5.0	<0.001					1	ug/L	lbs/day			
(86-30-6) 448, Phenanthrene (85-01-8)	X			<5.0	<0.001					1		lbs/day			
458, Pyrene (129-00-0)													[
46B. 1,2,4 - Tri-	X			<5.0	<0.001					1	ug/L	lbs/day			
(120-82-1) GC/MS FRACTION	X	STICIDI		<5.0	<0.001			·		1	ug/L	lbs/day			ļ
	- FE	3110101	=3						· · · · · · · · · · · · · · · · · · ·						
1P. Aldrin (309-00-2)			X												
2P. a-BHC (319-84-6)			Х				e Am.		• .						
3P. β-BHC (319-85-7)			Х				,					-			-
4P γ-BHC (58-89-9)			Х	-			· · · · · · · · · · · · · · · · · · ·		:			-			
5P. δ-BHC 319-86-8)			Х							-					
SP. Chlordane 57-74-9)	,		Х								· ·				
7P. 4,4'-DDT 50-29-3)			Х				· · · · · · · · · · · · · · · · · · ·								
3P. 4,4'-DDE 72-55-9)			Х												
P. 4,4'-DDD 72-54-8)			Х												
10P. Dieldrin 60-57-1)			X				177								
11P. Q-Endosulfan 115-29-7)															
2P. β-Endosulfan 115-29-7)			X	·					·					.	
3P. Endosulfan Julfate 1031-07-8)	-		X									·	· ·		
4P. Endrin 72-20-8)			Х							- 			· · · · · · · · · · · · · · · · · · ·		
5P. Endrin Aldehyde 7421-93-4)			X						· · · · · · · · · · · · · · · · · · ·						
6P. Heptachlor 76-44-8)			X												·



CONTINUED FROM PAGE V-8

EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER TN0020168 111

Form Approved OMB No. 158-R0173

1. POLLUTANT	2. 1	MARK	'X'				EFFLUENT		. ,			VITS	5. IN	TAKE (optic	nal)
AND CAS NUMBER	ATEST	D. BE- LIEVED PRE- SENT	C. BE-	e. MAXIMUM E	AILY VALUE	b. MAXIMUM 3	ODAY VALUE	CLONG TERM	AVRG. VALUE	d NO.OF	a. CONCEN-	b. MASS	A LONG	TERM E VALUE	b. NO. OF
(if available)	RE- QUIR- ED	PRE- BENT	A B T	CONCENTRATION	EBAM (S)	(+)	(Z) MASS	(I)	(2) MASS	ANAL-	TRATION	U, MASS	(I) CONCEN-	(2) MASS	YSES
GC/MS FRACTION	- PES	TICID	ES (co	ntinued)							,				
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X	. ,				·							
19P. PCB-1254 (11097-69-1)			Х											•	
20P. PCB-1221. (11104-28-2)		•	Χ.												
21P. PCB-1232 (11141-16-5)	,		Х												
22P. PCB-1248 (12672-29-6)			Х				-								
23P. PCB-1260 (11096-82-5)		·	Χ.								,				
24P. PCB-1016 (12674-11-2)			х						′ .						
25P. Toxaphene (8001-35-2)			Х												

EPA Form 3510-2C (6-80)

PAGE V-9

*Footnotes

- 1. Long-term data are for the period October 1984 through October 1988.
- 2. Did not analyze.

PLEASE PROME A TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. SEE INSTRUCTIONS.



EPA I.D. NUMBER (copy from Item 1 of Form 1)

TN0020168

Construction Runoff Holdi

Form Approved OMB No. 158-R0173

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

JTF**all no.** - 112

PART-A · You m			2. 2. 2.					3. UN	IITS	4. IN	TAKE (options	11)
38 C 38 G G B 177 F 4 L	e. MAXIMUM	DAILY VALUE	b. MAXIMUM 3	DAY VALUE	CLONG TERM A	ADIE) VALUE	d NO. OF	(apecify i	1	8. LONG	TERM	L NO. OF
POLLUTANT	(1)	" ' (2) MASS	(1)	(2) MASS	(1)	(2) MASS. I	d, NO, OF ANALYSES	8. CONCEN- TRATION	b MASS	(I) CONCENTRATION	(2) MASS	ANALYSES
a. Blochemical Oxygen Demand (BOD)	<1.0	·<5.	34		8	. ·	221	mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)	18	89	-				1	mg/L	lbs/day		,	
c. Total Organic Carbon (TOC)	4:0	20					1	mg/L	lbs/day			
d. Total Suspended Solids (788)	26	129	310		35.4		166	mg/L	lbs/day		·	
e. Ammonlà (as N)	0.26	1.3	2.3		0.3		219	mg/L	lbs/day			
	0.5955		1.93		0.21	2	197	MGD		VALUE	\$ -	
g. Temperature	VALUE 8.7		VALUE		VALUE			°C	:	VALUE	,	
h, Temperature (summer)	VALUE		VALUE	*****	VALUE			°C	:	VALUE		
I. рн ⁴ 48.	6.4	7.1	6.2	10.7			234	STANDAR	D UNITS			

PART B. Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUT	2. MA	RK 'X'	ī .		3. 1	EFFLUENT				4. U	NITS		AKE (optional	,
ANT AND	a. ee-	b. BE-	a. MAXIMUM I	DAILY VALUE	b. MAXIMUM 3	ODAY VALUE	C.LONG TERM	AVRG. VALUE	d NO. OF	a, CONCEN- TRATION	.b. MASS	8, LONG	TERM E VALUE	NO. OI
(if available)	A. DE- LIEVED PRE- SENT	AB- SENT	CONCENTRATION	. (2) MASS	CONCENTRATION	(z) MASS	CONCENTRATION	· (2) MASS	ANAL- YSES	TRATION	. U, MA33	CONCENTRATION	(2) MASS :	YSES
a. Bromide (24959-67-9))	Х		<2.0	<10					1	mg/L	lbs/day			
b. Chiorine, Total Residual	Х		<0.1	<0.49	·				8	mg/L	lbs/day		·	
e Color	Х		30						1	PCU				
d. Fecal () Coliform ()	Х		<23		·				8	N/100ml	-	,		
e. Fluoride (16984-48-8)	X		0.1	0.49				,	1	mg/l	lbs/day			
f. Nitrate- Nitrite (as N)	Х		<0.01	<0.05					1	mg/L	lbs/day			

. POLITY	21 MA	RK 'X'	部人的行為性質的	特别的特殊特	3. I	EFFLUENT 3	135 kg (1944 a. s.				NITS		TAKE (optional	
ANT CA: T/ av	D. BE- LIEVED PRE- SENT	D. BE-	8. MAXIMUM I	DAILY VALUE	b. MAXIMUM 3 (if avai	lable) VALV	ONG TERM (If ava.	AVRG. VALUE	d, NO. OF ANAL- YSES	8. CONCENTRATION	b. MASS	AVER	TWE 21 MASS	NO.C
Nitrogen, tel Organic	X.		0.52	2.6		······································			1	mg/L	lbs/day			1
Oll end a d	X		<5.	· <25					4	mg/L	lbs/day			
hosphorus P), Total 23-14-0)	Х		0.39	1.9					1	mg/L	lbs/day		,	
adioactivity	· ·				· · · · · ·									
Alpha,	Х		*(2)									· .		,
Bete, Tag	Х		*(2)		<u> </u>									
Radium,	Х		*(2)					1				·		
Radium Total	Х		*(2)							·				
ulfate (O4) (08-79-8)	Х		43	213					1	mg/L	lbs/day			
iffide	Х		<0.02	<0.0001					4	mg/L	lbs/day			
Sulfite SO ₃) 265-45-3)	Х		<0.1	<0.49				,	8		lbs/day			
Surfactants	X	-	<0.1	<0.49					1	mg/L	lbs/day			
Aluminum, tal 29-90-5)	х		2300	11					1	ug/L	lbs/day			
Barlum, (1) tal (40-39-3)	X		30	0.15					1	ug/L	lbs/day			
Boron, tal 40-42-8) ∰	Х		<50 .	0.25	·				1	ug/L	lbs/day			
obelt, 4 al 40-48-4)	X		<1.	0.005					1	ug/L	lbs/day			
ron, Total 39-89-6)	X		2200	11					1	ug/L	lbs/day			
Aagnesium, tal 39-95-4)	х		7.5	37					1	mg/L	lbs/day			
olybdenum, al 39-98-7)	х_		<20.	0.09					1	ug/L	lbs/day			
langan ese, al 39-96-5)	Х		68.	0.34					1	ug/L	lbs/day	. ,		
in, Total 10-31-5)	Х		<50.	0.25					1	ug/L	1bs/day			
itanium, :/ el 10-32-6)	Х		33.	0.16					1	ug/L	lbs/day			

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CONTINUED FROM PAGE 3 OF FORM 2-C

PARTICALITY you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test ATLICATITY you are a primary industry and this outrain contains process wastewater, refer to Table 20-2 in the instructions to determine which of the GC/MS fractions you must test to table for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark "X" in column 2-a for each pollutant you know or have reason in a factor of the GC/MS fractions. The column 2-a for each pollutant you know or have reason in a factor of the GC/MS fractions. The column 2-a for each pollutant you know or have reason in a factor of the GC/MS fractions to determine which of the GC/MS fractions to determine whi See instructions for additional details and requirements.

District Control			A Maria Carlo	i Al Marin Agree Meestro Mi Romania Salahan Aring A		EFFLUENT				4. UI	NITS		AKE (optio	nal)
I POLLUTANT	2.1	MARK 'X'		F 2000 (1915)		30 PAY VALUE	CLONG TERM	AVRG. VALUE	d NO.OF	a. CONCEN:	b MASS	a. LONG	TERM	b. NO.OF
AND CAS NUMBER (If available)	ATEST	D. BET G.	NT CONCENTRATION		(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	YSES	TRATION	D. MA3-	(I) CONCENTRATION	(2) MASS	YSES
1) (if avaitable)	ED.	TOTAL	ONCENTRATION		CONCENTRATION	1	CONCENTRAL						1 47 47 1 ** :	23% (1)
METALS, CYANID	E, ANI	TOTAL	HENULS	100000						11	lbs/day	1]
1M. Antimony. Total (7440-36-0)	<u> </u>		<1.0	<0.005			ļ		1	ug/L				-
2M Arsenic, Total (7440-38-21	.X		<1.0	<0.005		ļ			1	ug/L	lbs/day			
3M. Beryllium, Total, 7440-41-7)	X		<1.0	<0.005					1 .	ug/L	lbs/day			-
4M, Cadmium Total (7440-43-9)	X		<0.1	<0.0005					1	ug/L	lbs/day	• !		-
5M. Chromium, Total 17440-47-3)	Х		4.0	0.02			· .	· · · · · · · · · · · · · · · · · · ·	1	ug/L	lbs/day			-
6M. Copper, Total (7650-60-8) 6			<10.	<0.05					1	ug/L -	lbs/day	<u> </u>		
7M Lead, Tatal. (3439-521)	X		6.0	0.03					1	ug/L	lbs/day	 	,	
8M: Mercury 7,0te (7439-97-6)	Х		<0.2	<0.001					1	ug/L	lbs/day	 		
9M, Nickel, Total (7440-02-0)	X		3.0	0.01					1	ug/L	lbs/day			
10M, Selenium, Total (7782-49-2)	X		<1.0	<0.005					1	ug/L	lbs/day	<u> </u>	,	
11M. Silver, Total (7440-22-4)	X		<1.0	<0.05					1	ug/L	lbs/day	,		1
12M. Thallium, Total (7440-28-0)	X		<50.	<0.25					1	ug/L	lbs/day	,		
13M, Zine, Total (7440-66-6)	Х		10.	0.05					1	ug/L	lbs/day	;	!	\$.
14M. Cyanide, Total (57-12-5)	Х		<0.02	<0.09					4	mg/L	lbs/day	<u>r</u>	- '- '	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1
15M. Phenois, Total	Х		<5.0	<0.02					4	ug/L	lbs/day	7		<u> </u>

DIOXIN

DESCRIBE RESULTS 2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6) Χ

Company Comp	G POLITICA NA	er same	. Constitution	a Tiron	MENOPERO INCO- SONOCO	top and enough to proceed the	VANARATION OF THE CONTRACT					NOOFOTOR		خلال		
Constitute Con	ANDCAC	37.2	MARK) fr			and the state of t	EFFLUENT	A CONTRACTOR	the second	行動で発力	4. U	NITS	10 kg - 5, 1M	TAKE forth	nat) wine.
	VII ava	201	PENT	SENT.	CONCENTRATION	PAILY VALUE	STATE OF THE	ilable)		estable)	TO ANALS		L MASS	AV	,	ANO.DE
	GC/MS FRACTION	- vo	LATILE	COM	POUNDS	Task a Valent Per	4 H 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- a least part of the	有维护的强制 。	ALTERNO		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
X	1107.02.0 3	Х			ł	· ·					<u> </u>	 				
According X	2V: Acrylonitchers I I Cave 3-1 jednas (j. 1)	Х			<100.	<0.49					1		lbs/day			
Section Sect	OVC Bentage 1	Х			330	1.6					. 1		lbs/day			
Table Tabl	methyl) Ether 1542-88-11	Х			*(2)	·		•		·						:
(16-23-9)		Х			<10.	<0.05					1	ug/L	lbs/day		-	
Section Sect	(56-23-5)				<10.	<0.05			-		1	ug/L	lbs/day			
124-45-18-18-18-18-18-18-18-18-18-18-18-18-18-		X			<10.	<0.05					1	ug/L	lbs/day			
1	(124-48-1)	Х		_	<10.	<0.05	, .				1	ug/L	lbs/day			
1	100	X	_		<10	<0.05			-	-	1	ug/L	lbs/day			
1	(110-76-8)	X			<10.	<0.05					1	ug/L	lbs/day			
1		_X		-	<10.	<0.05					1	ug/L	lbs/day			
1	13V. Dichlord Aik	X			<10.	<0.05					1	ug/L	lbs/day			
1		X		\dashv	*(2)				-							
19V.1, 1-Dichloro 1	44.5	_x		_							1	ug/L	lbs/day			
1											1	ug/L	lbs/day			
1	17V 1 2 Dichloro		_	\dashv				·							·	
1			_	+		<0.05			-		1	ug/L	lbs/day	· ·		
10V. Methyl X	19V. Ethylbenzene (100-41-4)			_		<0.05			·		1	110/1	he/day			
PIV. Methyl hloride (74.87.3)	20V. Methyl Bromide (7483-9)			1												
	21V. Methyl Chloride (74-87-3)															

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PEPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER TN0020168 Form Approved CMB No. 158-R0173 CONTINUED FROM PAGE V-4 & POLL 2. MARK 'X' 4. UNITS 3. EFFL KE (optional) AND NUMB RTEST D. SE- C. SE- S. MAXIMUM b. MAXIMUM 30 DAY E C.LONG TERM AVRG. VALUE AVER-SE VALUE & MAXIMUM DAILY VALUE d NO.OF b. NO. OF a. CONCENb. MASS ANAL-ANAL. YSES (if available) CONCENTRATION CONCENTRATION TRATION (2) MASS (I) CONCEN-(2) MASS (2) MASS (2) MASS GC/MS FRACTION - VOLATILE COMPOUNDS (continued) 22V. Methylene Chloride (75-09-2) <10. < 0.05 1 ug/L lbs/dav 23V. 1,1,2,2-Tetrachioroethane <10. <0.05 1 ug/L 1bs/day 24V. Tetrachloroethylene (127-18-4 <10. <0.05 1 ug/L lbs/day 25V. Toluene (108-88-3) ug/L 43 0.21 .1 lbs/day 26V. 1,2-Trans-Dichloroethylene lbs/day (156-60-5) <10. <0.05 1 ug/L 27V. 1,1,1-Tri-chloroethane 1 ug/L lbs/day <10. <0.05 (71-55-6) 28V. 1,1,2-Trichloroethana (79-00-5) Х 1 ug/L lbs/day <10. <0.05 29V. Trichloroethylene (79-01-6) <10. < 0.05 1 ug/L lbs/day 30V. Trichlore fluoromethene <10. < 0.05 1 ug/L lbs/dav (75-69-4) 31V. Vinyi Chloride (75-01-4) < 10 ug/L lbs/day < 0.05 1 GC/MS FRACTION - ACID COMPOUNDS 1A. 2-Chlorophenol (95-57-8) <0.02 1bs/day X <5.0 1 ug/L 2A, 2,4-Dichlorophenol (120-83-2) Х <5.0 <0.02 1 ug/L 1bs/day 3A. 2,4 Dimethylphenol (165-67-9) <5.0 <0.02 1 ug/L 1bs/day Χ 4A. 4.6-Dinitro-O-Cresol (534-52-1) <30. < 0.15 1 ug/L 1bs/day 5A. 2,4-Dinitrophenol (51-28-5) <20 1 ug/L 1bs/day < 0.09 6A. 2-Nitrophenol (88-76-B) 1 ug/L 1bs/day <5.0 <0.02 7A. 4-Nitrophenal (100-02-7) 1 ug/L lbs/day <30. < 0.15 8A. P-Chloro-M-7 Cresol (59-80-7) Х *(2)

EPA Form 3510-2C (6-80)

Х

<30.

<5.0

<20.

< 0.15

<0.02

<0.09

9A. Pentachlorophenol (87-86-5)

10A. Phenol (108-95-2)

11A. 2,4,6-Tti-

(88-06-2)

1bs/day

lbs/day

1bs/day

1

1

1

ug/L

ug/L

ug/L

LPOLLUTANT		MARK X	建筑企业的基础	ing on the	5-40 3.	EFFLU <u>EN</u> T	A			4. U			TAKE (optio	male See
				AILY VALUE	b. MAXIMUM 3	9. PAY	CLONG TERM	AVRG. VALUE	d NO OF	4.0	1.113		TERM VALUE	b NO.OF
(If eve	HE-	PRES C. BE-	(I)	(e) mass	(I) CONCENTRATION	(2)	(I) CONCENTRATION	(I) MASS	ANAL-	S. CONCEN- TRATION	b MASS	AYI (I) CON	(2) MASS	ANAL-
GC/MS FRACTION	- BA	SE/NEUTRAL	COMPOUNDS		CONCENTRATION		CONCENTRATION				 	TRATIO	1.,	
1B. Acenephthene (83-32-9)	Х		<5.0	<0.02				·	1	ug/L	lbs/day			
28. Acensphtylene (208-96-6)	Х		<5.0	<0.02					1	ug/L	lbs/day			. 1
38. Anthracane (120-12-7)	Χ		<5.0	<0.02	,				1	ug/L	lbs/day			
48. Benzidine (92-87-5)	Х		<50.	<0.25					1	ug/L	lbs/day		. :	
6B. Benzo (a) (5 Anthrecene (56-55-3)	Х		<5.0	<0.02	-		·		1	ug/L	lbs/day	-	•	
6B. Benzo (a) 1. Pyrene (50-32-8)	<u>X</u>		<10.	<0.05					1	ug/L	lbs/day			
7B. 3,4-Benzo- fluoranthene (205-99-2)	, X		<10.	<0.05					1	ug/L	lbs/day			
8B. Benzo (ghi) Perylene (191-24-2) 9B. Benzo (k)	Х		<10.	<0.05	· · · · · · · · · · · · · · · · · · ·				1 .	ug/L	lbs/day			
	X		<10.	<0.05				-	1	ug/L	lbs/day			
ethoxy) Methane (111-91-1)	Х		<5.0	<0.02					1	ug/L	1bs/day	·		
ethyl) Ether (111-44-4) 12B. Bis (2-Chloro-	х		<5.0	<0.02					1	ug/L	lbs/day			
(39638-32-9) 13B. Bis (2-Ethyl-	X		<5.0	<0.02		,			1	ug/L	lbs/day			·
hexyl) Phthalate (117-81-7) 14B. 4-Bromo- phenyl Phenyl	Х	_	<5.0	<0.02					1	ug/L	lbs/day			
phenyl Phenyl Ether (101-55-3)	<u> </u>		<5.0	<0.02					1	ug/L	lbs/day			
Phthelate (85-68-7)	Х		<5.0	<0.02					1	ug/L	lbs/day	·		
nephthalene (91-58-7) 178. 4-Chloro-	Х		<5.0	<0.02				·	1	ug/L	lbs/day	,		
phenyl Phenyl Ether (7005-72-3)	X		<5.0	<0.02					1	ug/L	lbs/day			
18B. Chrysene (218-01-9)	Х	_ _	<10.	<0.05		· .	· ·		1	ug/L	lbs/day			
Anthracene (53-70-3) 298/1,2-Dichloro-	Х		<10.	<0.05		· · · · · · · · · · · · · · · · · · ·)		1	ug/L	lbs/day			
218. 1,3-Dichloro-	Х		<5.0	<0.02					1		lbs/day			
benzene (541-73-1)	X		<5.0	<0.02					1	ug/L	lbs/day			I

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्या मा ज्याची प्राच्याक प्रत्येक्तात्र प्रत्ये क्षेत्र वेशव विश्ववत्त्र विद्यालया विद्यालया विद्यालया विद्यालय

					1)	NUMBER (COPY TN0020168		Form 1) OUTFAL		1		Form	Approved O	48 No. 158-R	ு தக்க 0173
	M PAG			2000 R 2 (1983)		سعد سبح بريد بيني بين النفرة		1 11		<u> </u>	4 (1)	NITS .	5	KE (optio	والتقادي
POLLU AND C	^{::} 2, 1	MARK	,x,	<u> </u>		TE 144 WILLIAM !		c.LONG TERM	AVRG. VALUE	d NO.OF		<u> </u>	AVERAG		B. NO. OF
AND C. NUMBER (E. M.)	ATEST	LIEVES	LIEVER	6. MAXIMUM (DAILY VALUE	(I) CONCENTRATION				ANAL-	a, CONCEN- TRATION	b, MASS	(I) CONCEN-	(2) MASS	VSES
GC/MS FRACTION						CONCENTRATION	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CONCENTRATION	-	 	 		TRATION		
	- 60	SE/ITE.		. COM CO.132 ,	1	+	-	 	-	 					
225, 1,4-Dichloro- benzene (106-46,7)				<5.0	<0.02	<u> </u>				1	ug/L	lbs/day			
23B, 3,3- Dichloro benzidine (91-94-1)	Х			<25.	0.12			:	:	1_1_	ug/L	lbs/day			
24B, Diethyl Phthalate (1997) (84-66-2)	X			<5.0	<0.02		٠.			1	ug/L_	lbs/day			
25B. Dimethy (1) Phthalate (1) (131-11-3)	Х			<5.0	<0.02					1	ug/L	lbs/day			, .
268. DI-N-Buty [Phtheiste: (84-74-2)	X			<5.0	<0.02					1	ug/L	lbs/day	,	, ",,	to medica
278, 2,4-Dinitro- toluene (121-14-2)	X			<5.0	<0.02					1	ug/L	lbs/day			e company
28B. 2,6-Dinitro- toluene (606-20-2)		,								1	ug/L	lbs/day		- 1,	
29B. Di-N-Octyl	X	ļ		<5.0	<0.02	+				1	45/11	103/44	i		
Phthelate (117-84-0)	X			<10	<0.05	<u> </u>	 			1	ug/L_	lbs/day			
30B. 1,2-Diphenyl- hydrazine (as Azo- benzene) (122-66-7)	Х		·	*(2)									1 8.44.5		
318. Fluorenthene (208-44-0) \$52公。	X			<5.0	<0.02					1	ug/L	lbs/day	-11 W		
328. Fluorene (86-72-7) 31 1-71	'X			<5.0	<0.02					1	ug/L	lbs/day	116 -107 13744		
33B. Hexe chlorobenzene (118-71-1)	Х			<5.0	<0.02					1	ug/L	lbs/day			trya disha
348. Hexe- chlorobutediene (87-68-3)	X			<5.0	<0.02					1	ug/L	lbs/day	1		s ata strain.
35 B. Hexachloro- cyclopentadiene (277-47-4)	X			<5.0	<0.02					1	ug/L	lbs/day		10	1 6 444 -
36B. Hexachloro- ethane (87-72-1)	X			<5.0	<0.02					1	ug/L	lbs/day	,	,	4 - 6-8 -
37B. Indeno (1.2,3-cd) Pyrene (193-39-5)				<10.	<0.05					1	ug/L	lbs/day			. / 50#-
38B. leaphorone (78-59-1)	X			<5.0	<0.02					1	ug/L	lbs/day			die jee gag
398. Naphthalene (91-20-3)	X			<5.0	<0.02					1	ug/L	lbs/day			
40B. Nitrobenzene (98-95-3)						1	 .			1	ug/L	lbs/day			
41B. N-Nitro-	X			<5.0	<0.02						46, 5	100, 42,			
(62-75-9)		ļ!	L	*(2)					<u> </u>	 	 	 		 	

<0.02

ug/L

lbs/day

CONTINUED FROM	_											020168	112		
1. POLLU		MARK			为。明绝的别…		EFFLU	···			 	NITS	5.	KE (option	
AND C NUMBE	ATEST ING RK- QUIR-	PRAT	C BE-	8, MAXIMUM I	(z) MASS	b. MAXIMUM 3 (i) ava	ilable) (2) MASS	CONCENTRATION	AVRG. VALUE	d NO.OF ANAL- YSES	a, CONCEN- TRATION	b MASS	A L AVER. (1) CONCEN- TRATION	YALUE (2) MASS	b. NO. OI ANAL- YSES
GC/MS FRACTION	- BA	SE/NE	UTRAI	L COMPOUNDS	(continued)	CONCENTRATION		CONCENTRATION	 			 	1551105		1
438. N-Nitro- sodiphenylemine 1 (88-30-6)				<5.0	<0.02	·				1	ug/L	lbs/day			
448, Phonenthrene (85-01-8): 31 (Exact	X			<5.0	<0.02					1	ug/L	lbs/day			
458, Pyrene (1) (129-00-0)				<5.0	<0.02					1	ug/L	lbs/day			
46B. 1,2,4 - Tri. chlorobenzene (120-82-1)	Х			<5.0	<0.02					1	ug/L	lbs/day			
GC/MS FRACTION	- PES	TICID	ES	1.5 1.5 1.5 1.5		1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 1 to 1 to 1 to 1 to 1 to 1 to 1 to 1 t	3.							
1P. Aldrin (309-00-2)			Х										·		
2Р. С-ВНО (19 6) (319-84-8)			Х		. ·				,	!					
3P. β-BHQ (3.19-85-7)			Х												
4P. γ-BHQ F (88-89-9)			Х	,							, ,			·	
5P. δ·BHC (\$\frac{1}{2}); (319-88-8) (\$\frac{1}{2};			Х												
6P. Chlordene (57-74-9)			Х		•				,						
7P. 4.4'-DDT			Х												
8P. 4.4'-DDE			Х					·							
9P. 4.4'-DDD (72-64-8)			х												
10P. Dieldrin (1) (60-57-1)			Х						·						
11P. Q-Endosulfan (115-29-7)			х												
12P. β-Endosulfan (115-29-7)			X											į, č	
13P. Endosulfen Sulfete (1031-07-8)			X												
14P. Endrin (72-20-8)			X											-	
15P. Endrin Aldehyde (7421-93-4)			X				•		· · · · · · · · · · · · · · · · · · ·						
16P. Heptechlor (76-44-8)			X												

 $(-\infty)$, which is a positive range of a distribution of approximate the field of the distribution of $(-\infty)$



TN0020168

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Form Approved OMB No. 158-R0173

CONTINUED FROM	1 PAGE	8-V			<u> </u>	TN0020	168	11	2			For	m Approved (OMB No. 158	-R0173
1. POLLUTANT	2.	, ž. MARK 'X'		3. EFFLUENT					1 · · · · · · · · · · · · · · · · · · ·			INTAKE (optional)			
NUMBER 1	A 74 97	b.se.	E- C DE-	a. MAXIMUM	MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE c.L.		ONG TERM AVRG. VALUE	d NO.OF	IA. CONCEN.	b. MASS	A LONG TERM AVERAGE VALUE		b. NO.OF
(if available)	avia.	PRE	SENT	(1)	(2) MASS	(I)	(2) MASS	(I)	(2) MASE	YSES	TRATION	u m233	(I) CONCEN-	(2) MASS .	YSES.
GC/MS FRACTION	- PES	TICID	ES (co	ntinued)											<u> </u>
17P. Heptachlor x Epoxide (1024-57-3)			X										, •	3m, r	
18P. PCB-1242 (53469-21-9)			Х	<0.1	<0.0005					1	ug/L	lbs/day			
19P. PCB-1254 (11097-69-1)			X	<0.1	<0.0005					1	ug/L	lbs/day			
20P. PCB-1221			X.	<0.1	<0.0005	,				1	ug/L	lbs/day			
21P. PCB-1232 (11141-18-5)			Х	<0.1	<0.0005			·		1	ug/L	lbs/day			
22P, PCB-1248 (12672-29-6)			Х	<0.1	<0.0005					1	ug/L	lbs/day			
23P. PCB-1260 (11096-82-6)			Х	<0.1	<0.0005					1	ug/L	lbs/day			
24P. PCB-1016 (12674-11-2)			Х	<0.1	<0.0005				· ·	1	ug/L	lbs/day	:		
25P. Toxaphane (8001-35-2)			Х												

EPA Form 3510-2C (6-80)

PAGE V-9

*Footnotes:

- (1) Long term data are for the period October 1984 through October 1988.
- Did not analyze.

WATTS BAR NUCLEAR PLANT

BORON SOURCES AND DISCHARGES

BORON SOURCES AND DISCHARGES

Boric acid is used as a chemical neutron absorber in the reactor coolant system for reactivity control and to provide borated water for safety injection. During reactor operation, changes are made in the reactor coolant boron concentration for the following conditions:

- Reactor startup boron concentration must be decreased from shutdown concentration.
- 2. Load follow boron concentration must be either increased or decreased following a change in load.
- 3. Fuel burnup boron concentration must be decreased to compensate for fuel burnup and the buildup of fission products in the fuel.
- 4. Cold shutdown boron concentration must be increased to the cold shutdown concentration.

The concentration of boron in the reactor coolant system varies from 0 to 2100 parts per million (ppm) depending on plant conditions.

The boron concentration is controlled through the Chemical and Volume Control System (CVCS). The CVCS consists of several subsystems: the charging, letdown, and seal water system; the chemical control, purification, and makeup system; and the boron recovery system. The major components of these systems as they relate to the potential boron release paths are shown in the attached figure. The boric acid is stored in boric acid tanks at a concentration between 20,000 and 22,000 ppm boron. The boron concentration in the reactor coolant system is varied by feeding makeup water from the primary water storage tank and the boric acid tanks as needed to reach the desired concentration. Excess liquid effluents from the reactor coolant system which can contain 0 to 2100 ppm boron are diverted (referred to as letdown) to the CVCS holdup tanks. Water from the CVCS holdup tanks can be processed as a batch through the boric acid evaporators, where the boron is recovered and returned to the boric acid tanks. The distillate from the evaporators which can contain <10 to 100 ppm boron is released to CVCS monitor tank. The boric acid evaporator may be bypassed and CVCS holdup tanks routed to either (1) the hyperfiltration system (proposed) (2) the mobile demineralizers, or (3) the condensate demineralizer waste evaporator. The hyperfiltration system and mobile demineralizers were designed to reduce various radionuclide concentrations and do little to reduce the boron concentration. These systems are released to either (1) the cask decon collector tank or (2) the CVCS monitor tank. The condensate demineralizer waste evaporator was designed to reduce the liquid radwaste volume before solidification and can reduce the boron concentration in the distillate to less than 200 ppm. The distillate from this system is released to the radwaste discharge line via the distillate tanks. The decision to bypass the boric acid evaporators depends on the storage capacity available for the concentrated boric acid and the condition of the boron. With time, the capacity of the boron to absorb neutrons is consumed and it must be removed from the system.

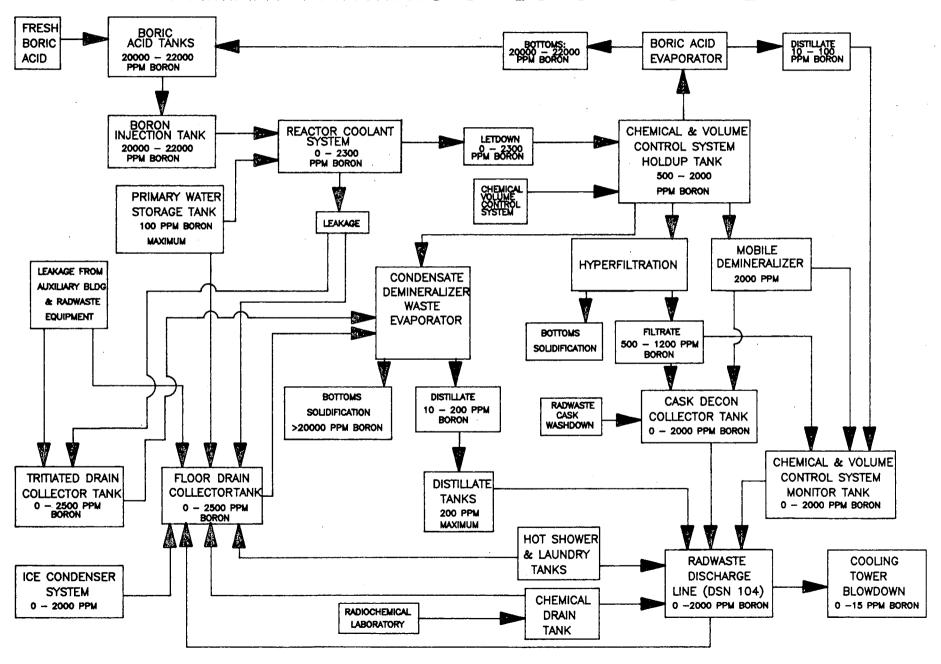
The CVCS monitor tank and cask decon collector tank are released to the radwaste discharge line which in turn is routed to the cooling tower blowdown. The CVCS monitor tank can also be routed back to the primary water storage tank.

System leakage and flushing operations which may consist of water containing boron are directed to either the tritiated drain collector tank or the floor drain collector tank. These two drain collector tanks are routed to the condensate demineralizer waste evaporator. These tanks may also be routed to either (1) the cask decon collector tank or (2) CVCS monitor tank.

Operation and maintenance of the ice condenser system (which has already been place into operation) generates a wastewater that can contain up to 2000 ppm boron. This wastewater is routed to the floor drain collector tank. Two and one-half million pounds of ice are maintained to provide pressure suppression in the case of an emergency inside the primary reactor containment. This ice is periodically sampled and upgraded, replaced, or melted as necessary.

The maximum concentration of boron that can be present in the liquid radwaste system release to the cooling tower blowdown (represented by radwaste discharge line in attached figure) is estimated to be 2000 ppm. The maximum release rate from the liquid radwaste system (LRS) is 150 gallons per minute (gpm). The LRS releases through a valve which is controlled by a radiation monitor and flow meter. This valve is designed as an interlocking device which will not open unless the radioactivity concentration is within limits specified by the Nuclear Regulatory Commission and the flow rate of the receiving waste stream (cooling tower blowdown) is at least 20,000 gpm. This will result in a boron concentration of 15 ppm or less in the cooling tower blowdown. Based on a minimum river flow rate of 3,500 cfs when the cooling tower blowdown is allowed to discharge to the Tennessee River via the diffuser discharge (OSN 101), the boron concentration will be less than 0.2 ppm. For the NPDES permit, TVA requests that no effluent limitation or monitoring requirements be placed on boron discharge from WBN.

PRIMARY PATHWAYS OF BORON FROM WBN



WATTS BAR NUCLEAR CHEMICAL ADDITIONS BY DISCHARGE

Discharge

Chemicals Added

OSN 101, Diffuser

Chlorine, hydrazine, boron, lithium, sodium hydroxide, ammonium hydroxide, bromine, oil and grease, paint compounds(see attached), laboratory chemical wastes, and phosphate cleaning agents

OSN 102, Yard Holding Pond

Chlorine, hydrazine, boron, lithium, oil and grease, bromine, paint compounds(see attached)

OSN 103, Low Volume Waste Treatment

Chlorine, hydrazine, boron, lithium, oil and grease, bromine

OSN 104, Liquid Radwaste

Boron, lithium, oil and grease, phosphate, and laboratory chemical wastes

OSN 105, Condensate Demineralizer

Boron, lithium, sulfuric acid, sodium hydroxide, hydrazine, and ammonium hydroxide

OSN 106, Steam Generator Blowdown

Hydrazine, ammonium hydroxide.

OSN 107, Metal Cleaning Waste

All metals, mainly Fe, Cu; caustic and acid; sodium, phosphate, hydrazine, and oil and grease
(See form 2C, page 2, part II.C for additional chemicals that may be added.)

OSN 108, Cooling Tower Desilting Basin Solids, chlorine, and bromine

OSN 109, Neutral Waste Tank

Sulfuric acid, sodium hydroxide

OSN 111, Sewage Treatment Plant

Chlorine, organic matter, and asbestos from plant showers used by insulators.

OSN 112, Runoff Holding Pond

Paint compounds(see attached), X-ray film processing rinse water (see MSDS attached)

Additional Chemical Usage

Ethylene glycol is used as a heat transfer medium in the ice condenser system and in the diesel generators. Small quantities may leak to DSNs 101-104.

Hydrazine, ammonia, sodium molybdate, sodium tolyltriazole, potassium hydroxide, and lithium hydroxide are added to the Primary and Secondary Systems to control pH and corrosion. Hydrogen peroxide is also added during refueling for Primary System cleanup to reduce radiation exposure to maintenance personnel. In addition, a program is planned which will evaluate the use of sodium bromide in conjunction with hypochlorite to control microbiologically induced corrosion in the raw water systems. These chemicals could end up via leakage or blowdown in OSNs 101, 102, 103, 104, 105, 106, and 107.

Filipp Dolla REPOR.

07:53:

Sample type/matrix : WATER.
Sample collected by : FOE
Sample collection date : 880413
Sample login date : 880413

11885X-27A50H-D452 : radmun thuoppe alqmaG.

	Alt. IDC.	Analysis Penformed	result		units	
· [**						
	00556	Oil and Grease in Water	5		mg/L	
4,4,	34694 ~	Phenol	< 5.0	-	ug/L	
	34586 ≦	2-Chlorophenol	< 5.0	•	ug/L	
	्ड4283	Bis(2-Clisopropyl)ether	< 5.0		ug/L	
•	34591	2-Nitrophenol	< 5.0		ug/L	alo al filia de la fili La regiona de la filia
•	34606	2,4-Dimethylphenol	< 5.0		ug/L	
	34601	·2,4-Dichlorophenol	< 5.0		ug/L	
	34452-	4-Chloro-3-methylphenol	< 30.	,	iig/L	
-	34621	2,4,6-Trichlorophenol	< 20,	* ,	ug/L	
• •	34616	2,4-Dinitrophenol	< 20.		ug/L	
	34646	4-Nitrophenol	K 30		ug/L	· ·
	34657	4,6-Dinitro-o-cresol	< 30.		ug/L	
	34433	N-Nitrogodiphenylamine	< 5.0	2	ug/L	
	39032	Pentachlorophenol	< 30.	:	ug/L	
	34566	1,3-Dichlorobenzene	₹ 5.0	•	uq/L	•
	34571	1,4-Dichlorobenzene	< 5,û		ug/L	
	34536	1,2-Dichlorobenzene	< 5.0	. •	ug/L	
	34273	Bis(2-chloroethyl)ether	K 5.0		ug/L	نو اره م
	34396	Hexachloroethans	< 5.0		ug/L	
	34447	Nitrobenzena	< 5.0		ug/L	
	34428	N-Nitrosodipropylamine	< 5.0		ug/L	
	34408	Isophonone	< 5.0	, T	ug/L	
	34278	Bis(2-Clethoxy)methane	< 5.0		ug/L	
	34551	1,2,4-Trichlorobenzene	< 5.0	: - ·	ugzt	
	34696	Naphthalene	< 5.0		ug/L	
	39702	Hexachlorobutadiene	< 5.0		ugal	
	34386	HexaClcyclopentadiene	< 5.0		ug/L	
	34581	2-Chloronaphthalene	< 5.0		ug/L	
	34200	Acenaphthylens	< 5.0		ug/L	
	34341	Dimethyl phthalata	< 5.0	ţ	ug/L	
•	34626	2,6-Dinitrotoluene	₹ 5.0		ug/L	
	34205	Acenaphthens	< 5.0		ug/L	**
	34611	2,4-Dinitrotoluens	< 5.0	12 1	ug/L	
	34381	Fluorene	₹ 5.0		ug/L	
	34641	4-Chlorodiphenyl ether	< 5.0		uarL	
	34336	Distryl phthalate ()	< 5.0		ug/L	
	34636	A-Bromodiphenyl ether	< 5.0		.ug/L	
	39700	Hexachlorobenzene	< 5.0	-, ,	ug/L	
	34461	Phenanthrens	₹ 5.0		- uo/L	ing skie it

				Charles Campan
	`34920	Anchracens.	. 5.0	Hg2L
	39310	Dibutyl phthalate	5.0	ug/L
	34376	Fluoranthems	, < 5, û	ug/L
	34469	Pyrians	'< 5.0	1987 <u>-</u> 1987 <u>-</u>
٠,	39120	Senzidine	'< 50.	uazE
	34292	Bengylbutylphthalate	and the second s	ougzt.
	34526	Benzo(a)anthracene	₹ 5.0	ngzt.
	34320	_	< 10.	ug/L
	34631	3,3 -Dichlerobenzidine	K. 25.	-0 9 71
	39100	Bis(2ethylhexyl)phthlate	₹ 5.0	ugzt
	34230		:< i0.	nd\r
.*	34596	Dioctyl phthalate	Χ. 10.	ugzi.
	34242	Benzo(k)fluoranthens	₹ 10.	ug/L
٠.	34247	Benzo(a)pyrene	< 10.	ug/L
٠.	34493	Indeno(1,2,3-cd)pyrene	< 10.	ug/L
	34556	Dibenzo(a,h)anthracens	< 10.	ug/L
	34521 7	Benzo(ghi)perylene	× 10.	ug/L
	34438	N-Nitrosodimethylamine	< 5.0	nds, r
	00335	Dhemical Oxygen Demand	110	ogra. agzi
.*	38260	Methylene Blue Act. Sub.	< 0.1	乗りた。 第g7上
	00081	Apparent Color in Water	110	PC Units _
	(00530	Non-Filterable Residue	93	TO OHIOS -
	0.0610	Ammonia Hitrogen	0.02	mg c L
	00630	Nitrate-Nitrite Nitrogen	0.53	ag/L
	00625	Total Kjeldahl Nitrogen	ŭ.84	mg/L
	00605	Organic Nitrogen	0.82	mg/L
	01059	Thallium, Total in Water	< 50.	ug/L
	01907	Barium, Total in Water	410.	ng/L
	01012	Beryllium, Tot in Water	× 1.	ug/L
	01977	Silver, Total in Water	< 10. 3. 3.	ug/L .
	01102	Tin, Total in Water	< 50.	ug/L
	01062	Molybdenum, Tot in Water	< 20.	ug/L
	01092	Zinc, Total in Water	6000.	ug/L
·	01045	Iron, Total in Water		og/L
	01922	Boron, Total in Water	< 50.	ug/L
	01055	Manganese, Tot in Water	120.	ug/L
	00927	Magnesium, Tot in Water	9.8	mg/L
	00916	Calcium, Total in Water	31.	agr = agrL
	01042	Copper, Total in Water	20.	ug/L
	01105	Aluminum, Total in Water	300:	ug/L
	01152	Titanium, Total in Water	46.	ug/L
	79741	Arsenic, RORA Extract	× 100.	ug/L
	79737	Selenium, RCRA Extract	< 100.	100/F
	79734	Cadmium, RCRA Extract	X 1.	ug/L
	79736	Lead, RCRA Extract	< 50.	uo/L
	(79733)	Barium, RCRA Extract	40,	ug/L
	79735	Chromium, RCRA Extract	X 50.	ug/L
	HRDCLC W	Ca and Mg Hardness Calc.	118.	mg/L CaCO3
	79738	Silver, ROPA Extract		indist cacha
	71900	Mercury, Total in Water		indistr indistr
	79729	Mercury, RORA Extract	√. 0,2	ug/L
	00630	Total Organic Carpon		からくし
	00745	Total Sulfide in Water	0.14	mazi i

00950

ug/L

ug/L

ug/L

ug/L

**********	#4####################################		Page 6 *
ធ៊ុប៉ូទឹងប៉	Onlocide in Water	***	をはがし
00945	Suifate in Water	• •	76.3771
00951	Fluoride in Wate.		3.英沙兰
71870	Broside in Water	<0.1	mari
			··· · · · · · · · · · · · · ·

Dis: Fluoride in Water a date 66465 Total Phosphorus 0.35 arg/L 00310 Biochem Oxy Demand 5 Day 5,8 面の習出 Cadmium, Total in Water 01527 ςį ugZL Chromium, Total in Water 01034 64 Antimony, Total in Water <

(0.1

 $\psi \in \langle \mathbb{L} |$ 01097 ロログし 01602 Arsenic, Total in Water i ugzt 01051 Lead, Total in Water 240 ug/L

01067 Nickel, Total in Water < 1 ug/L 01147 Selenium, Total in Water .K. i. ugZL 01037 Cobalt, Total in Water 13 ugzil 34030 Benzene < iû.

ug/L 32101 Bromodichloromethane < 10. uq2L 32104 Bromoform : iū. りゅどし 34413 Bromomethane ΙŪ. りゅんし 32102 Carbon tetrachloride < 10. ug/L 34301 Chlorobenzene < 10. ugZL 34311-Chlbroethane iů.

ug/L 2-Chloroethylvinyl ether 34576 < 10. ug/L 32106 Chloroform < 10. ugZL 34418 Chloromethane < iŭ. りほど性

32105 Dibromochloromethane iŪ. ugaL 1,1-Dichloroethans 34496 ΙÚ. ugAL 34531 1,2-Dichloroethane < 10. リログに 34501 1,1-Dichloroethylene 10. ugZL

34546 trans1,2Dichloroethylene ₹ jū. ug/L 1,2-Dichloropropane 34541 ίũ. ugZL cis-1,3-Dichloropropene 34704 1ŭ. いログし ug/L

trans-1,3Dichloropropens 34699 10. 34371 Ethylbenzene < 10. 34423 Methylene chloride 10.

34516 1,1,2,2-TetraClethane < 10. 34475 Tetrachlorosthylene < 10. 34010 Toluene ŦŬ.

ug/L 2450A .1,1,1-Trichlorosthame < 10. ug/L 34511 1,1,2-Trichlorosthane < 10. ug/L 34488 Trichlorofluoromethane iū. ひのだし 39175 Vinyl chloride ₹ 10. ug/L

39180 Trichlorosthylane iū. ug/L 34210 Acrolein 100. ugZL 34215 Acrylonitrile < 100. $\log 2 \mathbb{L}^2$ 60720

Total Cyanide in Water < 0.025.ログし 32730 Total Phenol in Water

LAB NAME: TVA Laboratory Branch: GCZMS OPERATIONS

DATE: 4/20/88 ANALYST: CV5

RESULTS OF LIBRARY SEARCH FOR NON-PRIORITY POLLUTANT COMPOUNDS

t	LAB#	FIELD ID	DATE RECEIVED	COMPOUNDS	APPROXIMATE CONCENTRATION
	38/ 5878			2-Butanone (MEK)	15 ug/L
		· -		(MEK) Benzene, 1,3-dimethyl- (m-xylene)	13 mg/L
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PERMIT CHANGE SUMMARY AND JUSTIFICATION WATTS BAR NUCLEAR PLANT

CHANGE SUMMARY AND JUSTIFICATION

The following is an itemized list of requested changes being proposed for the NPDES permit renewal:

1. Part I of the NPDES Permit # TN0020168

44 JUNE 18 ST

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS 1. PAGE I-1, [Table]:

DELETE the following information in the table: [TRC - Diffuser(mg/L) 0.10 Continuous Recorder] [TRC - Internal(mg/L) 1.0 Continuous Recorder] JUSTIFICATION:

Based on the results of testing two continuous chlorine analyzers (CCA) we request the removal of the requirement to monitor continuously (See attached letter to Mr. Phil L. Stewart from M. Paul Schmierbach, dated October 28, 1988.) We will continue to use multiple grab samples but propose to reduce to once per weekday (5/week) similar to Sequoyah Nuclear Plant.

2. PAGE I-2, Footnote 2, 4th sentence:

DELETE [prior to approval of the continuous monitoring system as an alternate NPDES monitoring technique and/or during periods of monitor outage of more than 24 hours]
JUSTIFICATION:

Based on the results of testing two continuous chlorine analyzers (CCA) we request the removal of the requirement to monitor continuously (See attached letter to Mr. Phil L. Stewart from M. Paul Schmierbach, dated October 28, 1988.) We will continue to use multiple grab samples but propose to reduce to once per weekday (5/week) similar to Sequoyah Nuclear Plant.

3. PAGE I-2. Footnote 3, 2nd sentence:

DELETE [Not later than the...dechlorination facilities.]
JUSTIFICATION:

Based on the results of testing two continuous chlorine analyzers (CCA) we request the removal of the requirement to monitor continuously (See attached letter to Mr. Phil L. Stewart from M. Paul Schmierbach, dated October 28, 1988.). The chlorination equipment will not be necessary (See attached letter to Mr. Bruce R. Barrett from Martin E. Rivers, dated September 30, 1985).)

4. PAGE I-3, 3rd paragraph, 2nd sentence:

DELETE [During any period of discharge...rainfall event.]
JUSTIFICATION:

Depending on the shutdown mode, a Unit shutdown may or may not immediately reduce the temperatures of the water discharging over the weir.

5. PAGE I-4, 3rd paragraph, (all):

DELETE [Until completion of the Low Volume ... shall be under OSN 103 (not OSN 107).]

JUSTIFICATION:

The Low Volume Waste Treatment Pond is completed. Removed for clarity.

6. PAGE I-4, 6th paragraph, 1st sentence:

DELETE ...Low Volume Waste Treatment Pond [or five-million gallon pond] discharge...

JUSTIFICATION:

The Low Volume Waste Treatment Pond is completed. Removed for clarify

7. PAGE I-4 (ATTACHMENT C, PAGE TWO 4.b., Letter from Paul E. Davis to Paul J. Traina dated September 14, 1983)

DELETE [That aluminum is added as a parameter on Discharge 103...is discharged to a point other than the low volume waste treatment ponds]
JUSTIFICATION:

The only discharge from the alum sludge pond is when it is pumped over to the Low Volume Waste Treatment Pond which according to this paragraph does <u>not</u> require monitoring.

8. PAGE I-4, bottom Note:

Delete [Note: See Attachment C...requirements.]
JUSTIFICATION:

Attachment C requirements have been incorporated.

9. PAGE I-6, 2nd paragraph, Note:

ADD ...or the Low Volume Waste Treatment Pond (OSN 103) <u>via the turbine building sump.</u>

JUSTIFICATION:

Added for clarity

10. PAGE I-6, 3rd paragraph:

REPLACE "NA" ...pH shall not be less than $\underline{6.0}$ standard units nor greater than $\underline{9.0}$ standard units and shall be monitored at a frequency of once per batch by a grab sample.

JUSTIFICATION:

See attached letter, Mr. Philip L. Stewart from M. Paul Schmierbach, WBN Reconsideration of pH Study dated November 2, 1988.

11. PAGE I-7, 1st paragraph:

CHANGE ... Steam Generator Blowdown to condenser circulating water system...

TO ... Steam Generator Blowdown to Cooling Tower Blowdown. JUSTIFICATION:

This is the correct physical pipe routing

12. PAGE I-7, 3rd paragraph:

DELETE ...system (for recycle)[or to the Liquid Radwaste System].
JUSTIFICATION:

This system is not directly piped to the Liquid Radwaste System.

13. PAGE I-10, 2nd paragraph, Monitoring Requirements, Sample Type:

CHANGE Pump Logs
TO Calculation

JUSTIFICATION:

A calibration rod and curve chart is used to measure the flow, and not pump logs.

14. PAGE I-11, 1st paragraph:

ADD ...serial number(s) 109 - <u>Make-up Water Treatment Plant</u> Neutral Waste Tank discharge to the condenser cooling water system <u>flume</u>.

JUSTIFICATION:

This is added for clarity.

15. PAGE I-11, 3rd paragraph:

REPLACE "NA" ...pH shall not be less than $\underline{6.0}$ standard units nor greater than $\underline{9.0}$ standard units and shall be monitored at a frequency of <u>once per batch</u>.

JUSTIFICATION:

See attached letter, Mr. Philip L. Stewart from M. Paul Schmierbach, WBN Reconsideration of pH Study dated November 2, 1988.

16. PAGE I-12:

Eliminate permit for OSN 110 - Sewage Treatment Plant effluent JUSTIFICATION:

This point source has been eliminated (See attached letter to Mr. John Marlar from Martin E. Rivers dated April 3, 1985)

17. PAGE I-13, 1st paragraph:

DELETE ...serial number(s) 111 - [Combined] Sewage Treatment...
JUSTIFICATION:
This is deleted for clarity.

18. PAGE I-13, 2nd paragraph, [Table]:

ADD

Effluent characteristic Discharge Limitation Monitoring Requirement

Dissolved Oxygen at least 1.0 mg/L 5/week grab

Fecal Coliform (#/100ml) NA 1000(MAX) 1/week grab JUSTIFICATION:

See attached letter from Paul E. Davis, Manager, Permits Section Division of Water Management, to Paul Traina, EPA, dated September 14, 1983. 19. PAGE I-13, 2nd paragraph, [Table <u>Discharge Limitations</u>]:

Daily Avg. CHANGE

TO Monthly Avg.

JUSTIFICATION:

See attached letter from Paul E. Davis, Manager, Permits Section Division of Water Management, to Paul Traina, EPA, dated September 14, 1983.

20. PAGE I-13, 3rd paragraph:

REPLACE "NA" ...pH shall not be less than 6.0 standard units or greater than 9.0 standard units and shall be monitored at a frequency of 5 per week by grab.

JUSTIFICATION:

See attached letter from Paul E. Davis, Manager, Permits Section Division of Water Management, to Paul Traina, EPA, dated September 14, 1983.

21. PAGE I-13, 5th paragraph:

DELETE ...[Combined] Sewage Treatment Plant... JUSTIFICATION: This is deleted for clarity.

22. PAGE I-13, Footnote 1, 1st sentence:

Individual units have design capacities of 45 ... and 114 CHANGE (0.030).

Each of the four (4) units have a design capacity of 114 cubic meters per day (0.030 MGD) JUSTIFICATION:

This is for clarity.

PAGE I-13, bottom Note:

[Note: See Attachment C...requirements.] DELETE JUSTIFICATION: Attachment C requirements have been incorporated.

PAGE I-13 (ATTACHMENT C, PAGE THREE, TABLE)

REMOVE Weekly Avg BOD and TSS

JUSTIFICATION:

Samples only taken 1/week, the monthly average is more stringent, and the monthly DMR does not report weekly data.

25. PAGE I-13 (ATTACHMENT C, PAGE THREE, TABLE)

ELIMINATE Mass Limitations for BOD and TSS

JUSTIFICATION:

Modification to the sewage treatment plant has changed existing mass limits. Current data (see EPA Form 2E) indicates no problem.

26. PAGE I-14, 1st paragraph:

DELETE ...Runoff Holding Pond (includes OSN 111 [, 113, and 114]) to unnamed tributary...

JUSTIFICATION:

These point sources has been eliminated (See attached letter to Mr. John Marlar from Martin E. Rivers dated April 3, 1985)

27. PAGE I-14, 2nd paragraph, [Table]:

DELETE Flow m3/Day (MGD) NA NA 1/Week Instantaneous CHANGE Discharge Limitations for Total Suspended Solids from Daily Avg 30 and Daily Max 100

TO "NA" for both limits

CHANGE Monitoring Requirements for Measurement Frequency for both Total Suspended Solids and Settleable Solids of 1/Week

TO 2/month 1/

JUSTIFICATION:

See attached letter to Mr. John Marlar, Chief Facilities Performance Branch from Martin E. Rivers Director, dated September 17,1985.

28. PAGE I-14, footnote 1:

DELETE [After stabilization of the 30-acre borrow area and completion of waste treatment ponds for OSN 113 and 114, discharge limitations on total suspended solids shall no longer be applicable, flow monitoring may be discontinued, and]...

CHANGE ...total suspended solids and settleable...

TO [T]otal suspended solids and settleable...

JUSTIFICATION:

See attached letter to Mr. John Marlar, Chief Facilities Performance Branch from Martin E. Rivers Director, dated September 17,1985.

29. PAGE I-14, bottom Note:

Delete [Note: See Attachment C...requirements.]

JUSTIFICATION:

Attachment C requirements have been incorporated.

30. PAGE I-15:

Eliminate permit for OSN 113 - Concrete Wash Plant Settling Pond JUSTIFICATION:

This point source has been eliminated (See attached letter to Mr. John Marlar from Martin E. Rivers dated April 3, 1985)

31. PAGE I-16:

Eliminate permit for OSN 114 - Vehicle Wash Settling Pond Effluent JUSTIFICATION:

This point source has been eliminated (See attached letter to Mr. John Marlar from Martin E. Rivers dated April 3, 1985)

1. PAGE I-17, 1.c. Preoperational Aquatic Monitoring Program (III.F.)

CHANGE item (1) Final Report Due - December 31, 1984, for 1973-1984 TO (1) Complete JUSTIFICATION:

Preoperational Aquatic Monitoring Program (III.F.) is complete. See attached letter Martin E. Rivers to Kenneth W. Bunting, "Watts Bar NP - NPDES Permit No. TN 0020168" dated December 1, 1986.

2. PAGE I-17, e. Erosion and Sediment Control Report (III.I.)

DELETE

(1) Submit plan for approval

DELETE.

(2) First Report

DELETE

(3) Second Report

CHANGE

(4) Subsequent reports

(1) Subsequent reports (if required)

JUSTIFICATION:

All reports submitted as required. Subsequent reporting is not necessary. (See attached letter to Mr. John Marlar from Martin E. Rivers dated June 11, 1985.)

PAGE I-17, f. Discharge Chlorination Study (III.K.)

DELETE

(1) Submit report - December 31, 1984

DELETE

(2) Operation of dechlorination system

ADD

(1) Chlorination Study Completed

JUSTIFICATION:

Chlorination Report submitted (See attached letter to Mr. Bruce R. Barrett from Martin E. Rivers, dated September 30, 1985.)

PAGE I-17, g. Concrete Wash Settling Pond (OSN 113)

CHANGE TO [removed]

(1) Operational Date - October 31, 1984 JUSTIFICATION:

This point source has been eliminated (See attached letter to Mr. John Marlar from Martin E. Rivers dated April 3, 1985)

PAGE I-17, h. Vehicle Wash Settling Pond (OSN 114)

CHANGED TO [removed]

DELETE (1) Operational Date - October 31, 1984

JUSTIFICATION:

This point source has been eliminated (See attached letter to Mr. John Marlar from Martin E. Rivers dated April 3, 1985)

6. PAGE I-17, i. Flow Calibration Report (III.L)

CHANGE (1) Report Due - December 31, 1984

TO (1) Annual Recertification Report (Due December 31)

DELETE (2) Certification - December 31, 1985 JUSTIFICATION:

This is changed for clarity.

2. PART III OTHER REQUIREMENTS

A. REPORTING OF MONITORING RESULTS

1. PAGE III-1, 3rd sentence:

DELETE ...item required by Part III Section D, [I, K,] L, and N;...
JUSTIFICATION:

These are no longer necessary.

PAGE III-2, F., all three paragraphs

DELETE [Not later than December ... in compliance with Tennessee Water Quality Standards.]

ADD Nonradiological preoperational aquatic monitoring was discontinued.

JUSTIFICATION:

Reference attached letter from Martin E. Rivers to Kenneth W. Bunting, "Watts Bar Nuclear Plant - NPDES Permit No. TN0020168, Preoperational Nonradiological Monitoring Report dated December 1, 1986).

3. PAGE III-3, I.

DELETE [The permittee shall maintain and ... demonstrating the adequacy of the controls.]

ADD Subsequent reporting of the Erosion and Sediment Control Plan is not necessary unless determined...

JUSTIFICATION:

All reports submitted as required. Subsequent reporting is not required.

4. PAGE III-3,J.

ADD ... In order to maintain thermal compliance, [t]here shall be no discharge through...
JUSTIFICATION:

This is added for clarity.

5. PAGE III-3, K.

DELETE [Not later than December 31, 1984 ... Installation shall be completed and in operation no later than May 31, 1985, if needed.]
JUSTIFICATION:

Chlorination Report submitted (See attached letter to Mr. Bruce R. Barrett from Martin E. Rivers, dated September 30, 1985).)

6. PAGE III-4, L., 2nd sentence:

DELETE A report shall be submitted by December 31, 1984. JUSTIFICATION:

Report was submitted.

7. PAGE III-4, M.

ADD ...the turbine building sump discharge directly to the yard holding pond [(OSN 102) and the metal cleaning waste ponds (OSN 107);]...

DELETE ...[(OSN 103),]

ADD ...(OSN 105)[the Condensate Demineralizer regeneration waste to cooling tower blowdown;]

ADD ...and (OSN 109)[the Make-up] Water Treatment Plant Neutral Waste Tank to the CCW flume] shall be used only under...

JUSTIFICATION:

This is for clarity.



TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

Bureau of Environment T.E.R.R.A. BUILDING 150 NINTH AVENUE, NORTH NASHVILLE, TENNESSEE 37203

September 14, 1983

Mr. Paul J. Traina, Director Water Management Division, Region IV Environmental Protection Agency 345 Courtland Street Atlanta, Georgia 30365

Re: NPDES Permit No. TN0020168
State Certification
TVA-Watts Bar Nuclear Plant

Receiving Waters: Yellow Creek and the Tennessee River

Rhea County

Dear Mr. Traina:

Pursuant to Section 401 of the Federal Water Pollution Control Act (as amended by the Clean Water Act of 1977), 33 U.S.C. 1251, 1341, the State of Tennessee hereby issues certification to the subject applicant for a National Pollutant Discharge Elimination System (NPDES) Permit for a wastewater discharge.

The State of Tennessee is not aware of any condition or limitation under Section 301, Section 302, or Section 303 of the Federal Act that would be violated by issuance of the proposed NPDES Permit; additionally, the State of Tennessee is not aware of any standard of performance under Section 306 or Section 307 that would be violated by issuance of the proposed Permit.

This certification is contingent upon the following conditions:

- 1. Permittee is in no way relieved from any liability for damages which might result from the discharge of wastewater.
- 2. Permittee must additionally comply with all requirements, conditions, or limitations which may be imposed by any provision of the Tennessee Water Quality Control Act (T.C.A. Sections 70-324 through 70-342) or any regulations promulgated pursuant thereto.
- 3. The State of Tennessee reserves the right to modify or revoke this certification or to seek revocation or modification of the NPDES Permit issued subject to this certification should the State determine that the wastewater discharge violates the Tennessee Water Quality Control Act, or any applicable Water Quality Criteria, or any rules or regulations which may be promulgated pursuant to the Clean Water Act of 1977, Public Law 95-217.



- 4. The State of Tennessee, Division of Water Management, certifies this permit upon the following additional conditions:
 - a. That the effluent quality of all the discharges in terms of radioactive constituents meet the requirements specified in the Operational Technical Specifications issued by the U.S. Nuclear Regulatory Commission for this facility under 10 CFR 20.
 - b. That aluminum is added as a parameter on Discharge 103 with a sampling frequency of once per week and with an effluent limitation of 10.0 mg/L maximum. This is considered by Tennessee to be the technology based effluent requirement which is imposed on all similar dischargers accross the state. The point of monitoring shall be the effluent from the alum sludge ponds and the requirement shall be in effect anytime the effluent from the alum sludge ponds is discharged to a point other than the low volume waste treatment pond.
 - c. That the following additional language be included for all discharges to govern the possible disposal of wastewater by means of land application or spray irrigation:
 - "The permittee must obtain approval from the Tennessee Department of Health and Environment prior to any land disposal or spray irrigation of wastewater. Such approval shall be based upon site inspections and review of appropriate engineering submittals."
 - d. That a Tennessee Grade I operator be employed for the operation of the wastewater treatment plants producing Discharges 110 and 111. Rule 1200-5-3-.08 of the Tennessee Department of Health and Environment, Division of Water Management, requires that a certified operator be employed for the operation of a sanitary wastewater treatment plant.
 - e. That Monthly Operation Reports are submitted to the Division of Water Management Office in Chattanooga for the wastewater treatment plants producing Discharges 110 and 111. Rule 1200-4-5-.02(5) of the Tennessee Department of Health and Environment, Division of Water Management, states that regular monitoring and reporting necessary to assure compliance will be required. These reports satisfy this requirement.
 - f. That mass limitations of 3.0 lb/d and 4.5 lb/d be added to both the BOD, and TSS for the daily average and daily maximum limits, respectively, on Discharge 110. These are the previous permit limits.
 - g. That the following parameters and/or limitations are added on Discharge III:

Mr. Paul J. Traina, Director September 14, 1984 Page Three

	Monthly Avg.		Weekly	Weekly Avg.		Daily Max.	
Parameter	Conc. mg/L	Amt. <u>lb/d</u>	Conc. mg/L	Amt. lb/d	Conc. mg/L	Amt. <u>lb/d</u>	
BOD,	30	16.5	40	22.0	45	24.8	
Total Suspended	•						
Solids	30	16.5	40	22.0	45	24.3	
Fecal Coliform*		_		`			
Dissolved Oxygen	1.0 mg	/L minimu	m		• *		
Total Residual		· 1		·	0.5		
Settleable Solids		· ·			1.0 ml/	L	
pН	6.0-9.0	Standard	Units	, r			

The wastewater discharge must be disinfected to the extent that viable coliform organisms are effectively eliminated. The concentration of the fecal coliform group after disinfection shall not exceed 200 per 100 ml. as the geometric mean based on a minimum of 10 samples, collected from a given sampling site over a period of not more than 30 consecutive days with individual samples being collected at intervals not less than 12 hours. For the purpose of determining the geometric mean, individual samples being collected at intervals not less than 12 hours. for the purpose of determining the geometric mean, individual samples having fecal coliform group concentration of less than one (1) per 100 ml. shall be considered as having a concentration of one (1) per 100 ml. In addition, the concentration of the fecal coliform group in any individual sample shall not exceed 1,000 per 100 ml.

The geometric mean of fecal coliform samples shall not be determined unless 10 or more samples are taken in any month. Since the fecal coliform monitoring requirement for this permit is less than 10 samples per month, permittee shall report minimum, arithmetic average, and maximum values. Non-compliance with established fecal coliform limits shall be reported by the permittee only when the concentration of the fecal coliform group in any individual sample exceeds 1000 per 100 ml. Notwithstanding the above, the Division may monitor or may require that the permittee monitor the discharge in order to determine compliance with the geometric mean limitation.

These limitations are necessary to prevent dissolved oxygen depletion in the receiving stream, chlorine toxicity to the aquatic life, excessive solids in the effluent, pH impacts and to insure adequate disinfection.

h. That the following measurement frequencies and sample types be established for these parameters on Discharge 111:

Mr. Paul J. Traina, Director September 14, 1984 Page Four

Parameter	Measurement Frequency	Sample Type
Fecal Coliform	1/week	Grab
Dissolved Oxygen	5/week	Grab
pH	5/week	Grab

Such measurement frequencies are the minimum requirement for similar facilities in Tennessee.

i. That the following parameters and limitations with measurement frequencies are added on Discharge 112:

Parameter	Monthly Avg. Conc. mg/L	Measurement Frequency	Sample Type	
BOD 5 Ammonia Dissolved Oxygen pH	20 5 5.0 mg/L min.	l/week l/week l/week l/week	Grab Grab Grab Grab	

These parameters and limitations are necessary to protect the receiving stream's classified uses. The Division will also require that the time the dissolved oxygen samples are taken be recorded with at least one sample per week taken in the morning to measure overnight depletation.

- j. That plans and specifications for the wastewater treatment facilities for Discharge 113 and 114 be submitted to the Tennessee Division of Water Management and approved before construction begins. Rule 1200-4-2 of the Tennessee Department of Health and Environment, Division of Water Management requires that this be done. This also applies to any future construction of new wastewater treatment facilities or alterations to existing wastewater treatment facilities.
- 5. With regard to the various studies and reports required of the applicant pursuant to Part I B. of NPDES Permit, the State reserves the right to modify or revoke the certification or to seek revocation or modification of the NPDES Permit issued subject to the certification as may be required to protect water quality based upon the results of these studies and reports.

Mr. Paul J. Traina, Director September 14, 1984 Page Five

If you have any questions about this correspondence please contact Phil Simmons at 615-741-7883.

Very truly yours,

Parcie Dans 1000

Paul E. Davis Manager, Permits Section Division of Water Management

PED/PMS/slk P/WAT-70

cc: Environmental Protection Agency CBO

Mr. Bruce R. Barrett, Director Water Management Division U.S. Environmental Protection Agency Region IV 345 Courtland Street, NE. Atlanta, Georgia 30365

Dear Mr. Barrett:

WATTS BAR NUCLEAR PLANT (WBN) - NPDES PERMIT NO. TN0020168 (M00028)

In accordance with my July 29 letter to you, enclosed is a report regarding the evaluation of chlorination practices at WBN as required by Part III.K of the subject permit.

The report describes 10 scenarios involving discharge routes and plant conditions that could affect the total residual chlorine (TRC) concentration in discharges to the Tennessee River. The following scenario is expected to result in the highest TRC concentration discharge to the river and assumes (1) the two nuclear reactors are in shutdown mode, (2) the two cooling towers are not in operation (water is not being circulated through the condensers), (3) both the raw cooling water (RCW) and essential raw cooling water (ERCW) flows are routed to the cold water channel of the cooling tower, and (4) the diffuser is in operation. Field investigations showed that for this scenario a discharge limitation of 0.1 mg/L for TRC could not be met when the TRC averaged 1.0 mg/L at the intake pumping station (IPS) but could be met when the TRC concentration averaged 0.6 mg/L at the IPS. Field investigations also showed that the maximum concentration limitation of 0.8 mg/L for TRC at the IPS could not be met, primarily because the sodium hypochlorite feed system is difficult to control accurately. Instantaneous TRC concentrations as high as 1.8 mg/L at the IPS did not result in a TRC concentration greater than 0.1 mg/L at the diffuser while the TRC concentration averaged 0.6 mg/L at the Therefore, operating procedures and limitations governing the sodium hypochlorite feed rate should be based on maintaining an average TRC concentration at the IPS in place of an instantaneous maximum value. these findings, TVA does not believe that dechlorination equipment will be necessary to comply with an effluent limitation of 0.1 mg/L TRC.

If you are in agreement with the findings of this report, TVA requests the following modifications to Part I.A, Page I-1, discharge serial No. 101 of the NPDES permit for WBN.

- 1. Change the allowable total chlorine addition from 30.9 lbs/hr to 27.3 lbs/hr. The revised value is based on a maximum flow rate of 78,010 gpm (six RCW pumps and four ERCW pumps in operation) and maintaining an average TRC concentration of 0.7 mg/L. The 0.7 mg/L value was obtained by interpolating the study results for an intake concentration that would result in a TRC concentration of 0.1 mg/L at the diffuser.
- 2. Change the wording "Additionally, continuous chlorination of the ERCW and RCW systems at a maximum concentration of 0.8 mg/L of total residual chlorine . . . at an intake temperature above 15.6°C (60°F)" to "Additionally, continuous chlorination of the ERCW and RCW systems at an average concentration of 0.7 mg/L of total residual chlorine . . . at an intake temperature above 15.6°C (60°F)."

If you have questions regarding the report or the request for permit modification, please call Stephen R. Wells at (205) 386-2971 or Madonna E. Martin at (615) 632-6695.

Sincerely,

Collect I Signed by

Martin E. Rivers, Director Environmental Quality

RJK:TBA:SRW:BC Enclosure cc (Enclosure):

Mr. Paul E. Davis, Deputy Director
Division of Water Pollution Control
Tennessee Department of Health
and Environment
TERRA Building
150 Ninth Avenue, North
Nashville, Tennessee 37203

Mr. Douglas K. Lankford, Chief South Carolina/Tennessee Unit Facilities Performance Branch Water Management Division U.S. Environmental Protection Agency Region IV 345 Courtland Street, NE. Atlanta, Georgia 30365 Mr. Charles H. Kaplan, P.E.
Coordinator, Thermal Analysis
Permits Section
Water Management Division
U.S. Environmental Protection Agency
345 Courtland Street, NE.
Atlanta, Georgia 30365

Mr. Philip L. Stewart, Manager Chattanooga Field Office Division of Water Pollution Control 2501 Milne Street Chattanooga, Tennessee 37406

- B. W. Brown, 140 EB-K
- E. R. Ennis, WBN
- J. W. Hufham, 1630 CST2-C
- C. L. Massey, 100 IBM-C
- H. G. Parris, MR6N11 B-C
- W. M. Pearse, W7A68 C-K
- R. M. Pierce, 9-169 C-K

0307K

Mr. John Marlar, Chief
Facilities Performance Branch
Water Management Division
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Marlar:

WATTS BAR NUCLEAR PLANT (WBN) - NPDES NO. TN0020168 - EROSION AND SEDIMENT CONTROL REPORT (M10,985)

Enclosed is an erosion and sediment control report as required by Part I.B.l.e of the WBN NPDES permit. This first report covers the period August 1984 through February 1985. The NPDES permit required submittal of this first report by December 31, 1984 (six months after submittal of the Erosion and Sediment Control Plan). However, due to scheduling difficulties (primarily availability of hydroseeding equipment and necessary delivery times for silt fencing), reclamation and erosion and sediment control efforts were delayed somewhat this past fall. The extended reporting period allows a more accurate representation of the extent of the controls in place and their effectiveness at reducing sediment transport for the site. We will follow up with the second report by June 30 as required by the NPDES permit.

A rainfall-triggered monitoring program was initiated in November 1984 at EPA's request to evaluate the effectiveness of erosion and sediment controls for Trench A and Borrow Area 1A. Attachment I to the enclosure includes photographs illustrating the status of reclamation for these areas as well as some of the controls in place. Attachment II to the enclosure is the monitoring results for the report period. Attachment III of the enclosure is a copy of the biweekly erosion control inspection notes for the report period.

Monitoring results indicate that sediment transport from Trench A is minor with an average total suspended solids (TSS) concentration from nine sampling events of 10 mg/L (maximum 31). Results for the runoff holding pond (DSN 112) receiving runoff from Borrow Area 1A (plus an additional 250 acres of forest, yard, and graveled areas) indicate an average TSS of 22 mg/L (maximum 140) for the same sampling events. These sampling events were triggered by rainfall amounts ranging from 0.22 to 1.61 inches within the 24 hours preceding sampling.

The high maximum value for the runoff holding pond discharge cannot be totally attributed to Borrow Area 1A runoff. TVA believes sediment transport from area 1A is minor because the sediment controls are in place and 95 percent revegetation has now been achieved. The higher concentration can primarily be attributed to (1) flushing of sediments from the pond accumulated prior to reclamation of borrow area 1 by relatively large runoff volumes in comparison to the pond's holding capacity and (2) silt from the 72 acres of graveled yard area onsite. To further reduce the sediment load to this pond, sediment control measures such as hay bales, rock collars, and regrading will be applied to the storm catch basins within the graveled yard area on or about June 1.

Based on the extent of revegetation of Trench A and Borrow Area 1A, the monitoring results presented, and our commitment to maintain sediment controls through December 1 (six months following 95 percent revegetation), TVA believes that the rainfall-triggered monitoring program can be discontinued. Monitoring at DSN 112 for TSS will continue as part of the routine monitoring program required by the WBN NPDES permit. With your concurrence, we propose to continue rainfall-triggered monitoring through the second report period and then discontinue the program on June 30.

If you have questions concerning the enclosed report and information, please call Michael Hines or Stephen R. Wells at (205) 386-2971 or FTS 872-8971 in Muscle Shoals, Alabama.

Sincerely,

Original signed by Alvan Bruth

Martin E. Rivers, Director Environmental Quality

JGM:SRW:BC Enclosure

cc: Mr. Charles H. Kaplan (Enclosure)
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Mr. Douglas Lankford (Enclosure)
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE.
Atlanta, Georgia 30365

Mr. D. Elmo Lunn, Director (Enclosure)
Division of Water Management
Tennessee Department of Health
and Environment
TERRA Building
150 Ninth Avenue, North
Nashville, Tennessee 37203

Mr. Philip L. Stewart, Manager (Enclosure) Chattanooga Basin Office Division of Water Management 2501 Milne Street Chattanooga, Tennessee 37406

T. B. Allen, 1620 CST2-C

- D. B. Bowen, W12A6 C-K
- W. T. Cottle, WBN
- C. L. Massey, 100 IBM-C
- R. A. Pedde, E7B21 C-K
- R. M. Pierce, 9-169 SB-K
- H. S. Sanger, EllB33 C-K

0039K

L62 850613076

Division of Nuclear Services

DEC 7 5 788 %

Mr. Kenneth W. Bunting, Director Division of Water Pollution Control Tennessee Department of Health and Environment 150 Ninth Avenue, North TERRA Building Nashville, Tennessee 37219-5404

Dear Mr. Bunting:

L01 8612034|D

WATTS BAR NUCLEAR PLANT (WBN) - NPDES PERMIT NO. TN0020168 - PREOPERATIONAL NONRADIOLOGICAL AQUATIC MONITORING REPORT

Note Action 12:
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Enclosed are two copies of the report, "Preoperational Assessment of Water Quality and Biological Resources of Chickamauga Reservoir, Watts Bar Nuclear Plant, 1973-1985." This report is submitted in accordance with part I., section B.l.c., and part III., section F., of the NPDES permit for WBN and my September 18 letter to Bruce R. Barrett. The enclosed report summarizes preoperational data collected between March 1982 and March 1986, and from 1972 through 1979. Nonradiological preoperational aquatic monitoring was conducted from 1973 to 1977 (water quality/non-fish), and 1976 to 1979 (fish), and results reported to the Environmental Protection Agency on April 15 and April 30, 1980, respectively. Due to delays in the completion of WBN, TVA decided to resume these monitoring programs in March 1982 in order to update the preoperational data base. TVA believes the updated preoperational data base is sufficient as a baseline from which the effects of WBN operation on Chickamauga Reservoir can be determined. Therefore, preoperational monitoring has been terminated.

A fuel loading date for unit 1 of the plant has not been established. Once a schedule is established, TVA will establish a schedule for conducting the operational monitoring required by part III., section G., of the permit, and advise you accordingly.

The data from the additional monitoring of the intake and diffuser gate discharge were inadvertently not included in the enclosed report as required by part III., section F., of the permit. These data are now being compiled and assessed. This assessment, along with a summary of the data, will be submitted to you by February 15, 1987.

If you have any questions regarding the enclosed report or the monitoring program, please call Madonna E. Martin of my staff at (615) 632-6695.

Sincerely,...

Original Signed by Martin E. Rivers

Martin E. Rivers, Director Environmental Quality

FAM: CME Enclosure

cc: See page 2

cc (Enclosure):

Mr. Bruce R. Barrett, Director Water Management Division U.S. Environmental Protection Agency, Region IV 345 Courtland Street, NE. Atlanta, Georgia 30365

Mr. Harold R. Denton, Director Office of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission 7920 Norfolk Avenue Washington, D.C. 20555

Dr. J. Nelson Grace Regional Administrator U.S. Nuclear Regulatory Commission Region 2 101 Marietta Street, Suite 2900 Atlanta, Georgia 30303

Mr. C. Wayne Pollock, Chief Fisheries Management Tennessee Wildlife Resources Agency Ellington Agricultural Center P.O. Box 40747, Room 153 Nashville, Tennessee 37204

Mr. Philip L. Stewart, Manager Chattanooga Field Office Division of Water Follution Control 2501 Milne Avenue Chattanooga, Tennessee 37406-3399

Mr. Walter D. Stieglitz
Acting Regional Director
Department of Interior
U.S. Fish and Wildlife Service
Richard B. Russell Federal Building
75 Spring Street, SW.
Atlanta, Georgia 30303

Mr. W. Reid Tatum, Regional Manager Tennessee Wildlife Resources Agency 216 East Penfield Street Crossville, Tennessee 38555

Mr. Lee B. Tebo, Chief Ecological Support Branch U.S. Environmental Protection Agency College Station Road Athens, Georgia 30601

cc (Enclosure):

Files, EQS, 242 SPB-K

B. W. Brown, 140 EB-K

M. G. Msarsa, 290 HB-C

H. P. Pomrehn, ONP, Watts Bar/R/MS C. G. Robertson, LP 5S 83E-C L. E. Wallace, Ell B36 C-K

Prepared by F. A. (Drew) Miller (DNS) with concurrence by Madonna E. Martin

SEP 17 1985

Mr. John Marlar, Chief
Facilities Performance Branch
Water Management Division
U.S. Environmental Protection Agency,
Region IV
345 Courtland Street, NE.
Atlanta, Georgia 30365

Dear Mr. Marlar:

WATTS BAR NUCLEAR PLANT (WBN) - NPDES PERMIT NO. TN0020168 - EROSION AND SEDIMENT CONTROL REPORT

Enclosed is the second erosion and sediment control report required by Part I.B.1.e of the WBN NPDES permit. This report covers the period from March through August 1985, when the major earthwork for units 1 and 2 was completed. Although the June compliance date for submission has passed, the extended reporting period allows a better representation of conditions onsite through the summer growing season. A mid-September 1985 submission date was verbally coordinated with Douglas Lankford of your office on August 26. 1985.

Rainfall triggered monitoring for borrow area 1A and trench B was continued through August 1985. Enclosure I is the monitoring results for the report period. The results indicate that runoff from trench A is light (we assume this is due to presence of extensive vegetation) except during heavier rainfall events (approaching 2 inches in a 24-hour period). We believe the total suspended solids (TSS) concentration resulting from the 2-inch rainfall event of May 2 is primarily due to erosion of the exposed ditch bottom conveying runoff from this area. Overall, vegetation is well established on trench A, which along with extensive sediment controls prevents significant soil loss from this area. The last remaining activity in the area will be to stabilize the conveyances.

Results from the runoff holding pond (OSN 112) receiving runoff from borrow area 1A (plus an additional 250 acres of forest, yard, and graveled areas) indicate that the average TSS concentration from ten rainfall triggered sampling events during the report period was 65 mg/l (maximum 290 mg/l). We believe minor solids contributions are coming from borrow area 1A due to the extensive revegetation of this area along with continued maintenance of area sediment controls. The only significant remaining source of solids to this pond is from the construction graveled yard area upstream. In an effort to reduce the amount of solids contributed by this yard area, straw bales were places around the construction

Line

yard storm water catch basins in June: As stated in our first report, we believe that the major source of solids in the effluent from OSN 112 is from the flushing of sediment from the pond's bottom. This sediment accumulated here prior to establishing sediment controls and completion of vegetation on borrow area 1A. For this reason, we believe TSS monitoring at OSN 112 is not indicative of the conditions on borrow area 1A.

As indicated by our first erosion and sediment control report, TVA will discontinue rainfall triggered monitoring for trench A and OSN 112 with the submission of this second report. Future compliance with limitations and monitoring requirements at OSN 112 will be in accordance with that specified by footnote 1 on page I-14 of the NPDES permit applicable after stabilization of borrow area 1A.

As provided in the July 1984 Erosion and Sediment Control Plan (ESCP) for WBN, sediment controls will be maintained for a minimum period of 6 months (March 1, 1986) on borrow areas 1A, 2, 8, trench A, and trench B, based upon completion of revegetation. After March, maintenance of sediment controls for these areas will be discontinued. Controls will continue to be maintained for borrow areas 3, 4, 5, 6, 7 and for spoil areas 1, 2, and 3 until final stabilization is achieved. Maintenance inspections will also continue until final stabilization is achieved. Enclosure II consists of copies of the pages from the biweekly inspection logs for this reporting period.

In general, we believe reduction of soil loss from the WBN site has been successful through implementation of the erosion and sediment control plan. The plan concept will continue in effect and will be revised as necessary to reflect major new earthwork associated with completion of WBN unit 2. However, soil disturbance associated with construction of units 1 and 2 has essentially been completed. Protection of storm water catch basins in the construction yard area will be provided as long as construction activity continues in this area. As indicated in NPDES permit No. TN0020168 and the July 1984 ESCP, TVA will not submit additional erosion and sediment control reports unless specifically requested by you or the State Director.

Any questions pertaining to this submittal should be directed to Madonna E. Martin at (615) 632-6695 or FTS 856-6695 in Knoxville.

Sincerely,
Original signed by
Alvan Bruch

Martin E. Rivers, Director Environmental Quality

JGM: CMH Enclosure

cc: See page 3

cc (Enclosure):

Mr. Charles H. Kaplan
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, NE.
Atlanta, Georgia 30365

Mr. Douglas Lankford U.S. Environmental Protection Agency Region IV 345 Courtland Street, NE. Atlanta, Georgia 30365

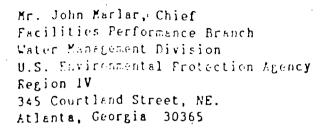
Mr. D. Elmo Lunn, Director Division of Water Management Tennessee Department of Health and Environment TERRA Building 150 Ninth Avenue, North Nashville, Tennessee 37203

Mr. Philip L. Stewart, Manager Chattanooga Basin Office Division of Water Management 2501 Milne Street Chattanooga, Tennessee 37406

cc (No enclosure):

- T. B. Allen, 1620 CST2-C
- D. B. Bowen, W12A6 C-K
- W. T. Cottle, Watts Bar NUC PR
- C. L. Massey, 100 IBM-C
- R. A. Pedde, E7B21 C-K
- R. M. Pierce, 9-169 SB-K
- H. S. Sanger, Jr., EllB33 C-K

Prepared by Jimmy G. Mantooth with concurrence by Madonna E. Martin



Dear Mr. Marlar:

WATTS BAR NUCLEAR PLANT (WBN) - NPDES PERMIT NO. TN0020168

In accordance with Part II of the subject permit, we are notifying you of a change in discharge for discharge serial numbers (DSNs) 110, 113, and 114 at WBN. Each of these point source discharges has been eliminated. The details concerning the elimination of these discharges are discussed below.

DSN 110 - Operational Sand Filter

This discharge was eliminated on December 3, 1984, by routing the operational sanitary sewage to the construction sewage treatment plant (CSTP), DSN 111. This change was made because (1) the septic tank/sand filter system treating the operational sewage flows was at hydraulic design capacity; (2) an increase in operational personnel is anticipated as units 1 and 2 come online; (3) the sand filter is clogging, requiring expensive chemical reconditioning; and (4) the CSTR is presently experiencing an average flow that represents only 68 percent of its design hydraulic capacity. The addition of the operational sewage will increase the average CSTR flow to approximately 90 percent of its design hydraulic capacity. TVA is currently evaluating the CSTP to enhance operational flexibility and accommodate any future increase in personnel levels. Pending our decision, the appropriate regulatory submittals (drawings, modified permit pages, etc.) for construction approval will be submitted.

DSN 113 - Concrete Batch Plant Pond

This discharge point was eliminated on December 4, 1984, by sealing the existing holding pond overflow. The concrete wash water subsequently collected will be used for dust suppression on approximately 25 miles of unimproved roads within the WBN Reservation. Based on the frequency of wash plant operation, we anticipate the application of approximately 10,000 gallons of wash water per month. We are in the process of preparing a contract for offsite concrete supply. We anticipate award within four months. After this date, operation of the concrete wash plant will be discontinued.

Mr. John Marlar

Based on the light application rate and the fact that the solids contained within the wash water should compact to form a hard, relatively stable road surface, TVA believes this interim disposal method is both economical and environmentally acceptable.

DSN 114 - Vehicle Wash Pond

The construction vehicle wash facility was decommissioned on October 29, 1984, and has been dismantled. The existing pond that received the wash water will remain in place. However, it will receive only general yard runoff. This pend will continue to drain to the construction yard holding pond, DSN 112.

As a result of the above changes in discharge, we do not plan to construct the waste treatment ponds for DSNs 113 and 114 discussed during the WBN NPDES permit negotiations conducted last summer. Therefore, the plans and specifications for State construction approval of these ponds as required by the State's certification of the NPDES permit will not be submitted.

Also, because these discharges have been eliminated, we will mark future discharge monitoring report pages for these three outfalls "Not Applicable, Discharge Eliminated" and discontinue the submission of monthly operation reports for DSN 110 to the State of Tennessee.

If you have questions, please call Michael Hines or Stephen R. Wells at (205) 386-2971 in Muscle Shoals, Alabama.

Martin E. Rivers, Director Environmental Quality

T. B. Allen, 1620 CST2-C

B. J. Bond, 1E61 OCH-K

B. W. Brown, 140 EB-K R. W. Cantrell, W12A12 C-K

C. L. Massey, 100 IBM-C

W. M. Pearse, W7A68 C-K R. M. Pierce, 104 ESTA-K

H. S. Sanzer, EllB33 C-K

J. V. Shipp, Jr., 6411 EBR-C: 317

JGM:SRW:BC

· cc: Mr. Paul E. Davis

TERRA Building

Mr. Jack R. McCormick, Manager Chattanooga Basin Office Division of Water Management 2501 Kilne Street Chattanooga, Tennessee 0184K

Manager, Permits Section

Health and Environment

Division of Water Management

Nashville, Tennessee 37203

.Tennessee Department of

150 Ninth Avenue, North

Sincerely, Cಬರ್ಬಬ∞23 Original signed by Martin E. Rivers 1111

10 UN

Mr. Philip L. Stewart, Manager Chattanooga Field Office Division of Water Pollution Control 2501 Milne Avenue Chattanooga, Tennessee 37406-3399

L01 881109018

Dear Mr. Stewart:

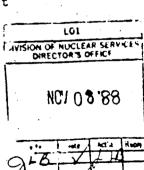
WATTS BAR NUCLEAR PLANT (WBN) - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NO. TN0020168 - RECONSIDERATION OF PH STUDY

In reference to your December 16, 1987 letter on this subject, WBN staff would prefer that you include monitoring requirements in the NPDES permit for discharge serial numbers (DSN) 105 and 109 rather than conduct the requested pH study. As stated in previous correspondence, our internal procedures already require that the pH of these tanks be adjusted to the 6.0-9.0 range before release. Therefore, incorporating monitoring requirements into the NPDES permit will require no monitoring or treatment beyond what we currently conduct.

The reason for retaining separate permit discharges for DSNs 105 and 109 is that under certain operating conditions, e.g., steam generator tube leaks or high levels in the turbine building sump, the waste stream is allowed to bypass the turbine building. In this event, the waste stream must be monitored for potential radiation and discharged to either the diffuser discharge if it is within the acceptable radiation limits, or to the radwaste system for treatment. This capability to discharge directly through the DSN 105 and 109 pathways is provided in the WBN Technical Specifications. Operational changes to the WBN Technical Specifications require NRC review and approval.

If you have any questions concerning these matters, please contact Abraham H. Loudermilk, Jr., at (615) 632-6656 in Knoxville.

Sincerely, RECEIVED Original signed by CHEMISTRY BRANCH M. Paul Schmierbach M. Paul Schmierbach, Manager Environmental Quality ir. K. P. Barr, Acting Assistant Director for Inspection Programs TVA Projects Division D.S. Nuclear Regulatory Commission Region II ₩R 101 Marietta Street, NW., Suite 2900 tlanta, Georgia 30323 Continued on page 2



Mr. Bruce R. Barrett, Director
Water Management Division
U.S. Environmental Protection Agency, Region IV
345 Courtland Street, NE.
Atlanta, Georgia 30365

Ms. S. C. Black, Assistant Director for Projects TVA Projects Division U.S. Nuclear Regulatory Commission One White Flint, North 11555 Rockville Pike Rockville, Maryland 20852

Mr. F. R. McCoy, Assistant director for Inspection Programs
TVA Projects Division
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW., Suite 2900
Atlanta, Georgia 30323

U.S. Nuclear Regulatory Commission Attention: Document Control Desk Washington, D.C. 20555

Files, EQS, 242 SPB-K

- R. H. Brooks, 140 EB-K
- E. S. Christenbury, Ell B33 C-K
- R. L. Gridley, LP 5N 157B-CXRIMS
- J. L. McAnally, LP 5S 83E-C
- M. G. Msarsa, 290 HB-C
- R. A. Pedde, Watts Bar Nuclear Plant

Prepared by Robert W. Bond (DNS) with concurrence by Abraham H. Loudermilk, Jr.

0918J

142 ENVIRONMENTAL PROTECTION SECTION DIV of NUC SVCS NOV 0 4 '88

AMS CYes Z'Ne Initials:

OCT 28 1988

Mr. Philip L. Stewart, Manager Chattanooga Field Office Division of Water Pollution Control 2501 Milne Avenue Chattanooga, Tennessee 37406-3399

Dear Mr. Stewart:

L01 88110/005

WATTS BAR NUCLEAR PLANT - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NUMBER TN0021068 - RESULTS OF TESTING OF CONTINUOUS CHLORINE ANALYZER (CCA)

1

As committed in my April letter to you, enclosed are the report and figures on the testing of an Orion Model 1770 CCA. In summary, this instrument which is reputed to be the best on the market is not consistently accurate, but rather is subject to fairly regular spikes which are greatly different from the results of conventional grab sample analysis. Based on the results of this test combined with the testing conducted on the Xertex CCA last spring, we plan to request in our NPDES permit renewal application that the CCA requirements to be removed from our new permit since we have not been able to acquire an accurate CCA. In the interim, we will, of course, continue to use multiple grab samples to demonstrate compliance with the permit.

If you have any questions concerning the enclosed report or would like to discuss this matter further, please contact Abraham H. Loudermilk, Jr., of my staff, at (615) 632-6656 in Knoxville.

> Sincerely, Original signed by M. Paul Schmierbach

M. Paul Schmierbach, Manager Environmental Quality

roi ISION OF MUCLEAR SERVICE DIRECTOR'S OFFICE

CEM: MFB Enclosures cc (Enclosures):

Mr. Bruce R. Barrett, Director Water Management Division U.S. Environmental Protection Agency, Region IV 345 Courtland Street, NE. Atlanta, Georgia 30365

Continued on page 2

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EASTMAR KODAK CUMPANY 3A3 State Street Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call 716-722-3151 For other purposes, call the Marketing and Distribution Center in your area

Kodak Accession Number: 365660. Revised Date of Freparation: 11/7/85 SECTION I. LOENTIFICATION

Product Name: KODAK INDUSTREX Fixer and Replemisher, Part A

Formula: Aqueous Mixture

Kodak Photographic Chemicals Catalog Number(s): CAT 139 7231 - To Make 75 Litres; CAT 192 5007 - To Make 200 Gallons; CAT 190 0273 - To Make 38 Litres

Solution Number: 4343

Rodak's Internal Hazard Rating Codes: R: 1 $S:=\{1,\ldots,n\}$

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

۵.	COMPUNENT(S):	Weight Percent	AUWIH (LV(R)	Kodak Accession No.	CAS Reg. No.
	Ammonium thiosulfate	45-50	-	999586	7783-18 -8
• •	Water	35-40	com rem arm	035290	7732-18-5
	Sodium acetate	1-5	for one	900227	127-09-3
. •	Acetic acid.	1-5	10 ppm##	900763	64-19-7
	Sodium sultito	1-5	·	901148	7757-83-7

**See Section VI-A for additional information on exposure limits.

PRECAUTIONARY LABEL STATEMENT(S):

LOW HAZARD FOR RECOMMENDED HANDLING

SECTION III. PHYSICAL DATA

- Appearance and Odor: Clear pale greenish-vettow solution; slight acetic acid odor
- Boiling Point: GT 100 C (GT 212 F) @ 760 mmHg

Vapor Pressure: ca. 18 mmHg @ 20 C

Evaporation Rate (n-butyl acetate = 1): Not Available

Vapor Density (Air = 1). ca. 0.6

- Volatile Fraction by Weight: ca. 40 %
- Specific Gravity (H20 = 1): 1.331
- pH: ca. 5.7

Solubility in Water (by Weight): Complete

SECTION IV. FIRE AND EXPLOSION MALARD DATA

Flash Foint: Nome

Noncombustible

Extinguishing Media: Use agent appropriate for surrounding fire.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and

Unusual Fire and Explosion Hazards: Fire of excessive heat may cause

production of hazardous decomposition products.

SECTION V. REACTIVITY DATA

Stability: Stable

Incompatibility: Strong acids, strong alkali

Hazardous Decomposition Products: Ammonia

Hazardous Polymerization: Will not occur.

SECTION VI. TOXICITY AND HEALTH HAZARD DATA

EXPOSURE LIMITS: Á.

> See Section 11 OSHA Permissible Exposure Limit (PEL): 10 ppm (acetic acid)

EXPOSURE EFFECIA: . B.

Inhalation: Low hazard for usual industrial handling.

No specific hazard known to Eastman Kodak Company. However,

any material that contacts the eye may be irritating.

Skin: Low hazard for usual industrial handling.

C. FIRST AID: In case of eye contact, flush with plenty of water.

VENTILATION AND PERSONAL PROTECTION SECTION VII.

VENTILATION: Good general ventilation should be sufficient.

SKIN AND EYE PROTECTION:

Safety glasses should be worn in any type of industrial chemical

SPECIAL STORAGE AND HANDLING PRECAUTIONS SECTION VIII.

. Keep container tightly closed and away from alkali or acids.

D-0010,900G 85-0087

SECTION 1X. SPILL, LEAK, AND DISPOSAL PROCEDURES

Flush to an acid—free sewer.

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

SECTION X, ENVIRONMENTAL EFFECTS DATA

Some Laboratory test data and published data are available for the major components of this chemical formulation, and these data have been used to provide the following estimate of environmental impact: (1-10)

This chemical formulation is a moderately acidic aqueous solution, and this property may cause adverse environmental effects. It has a high biological oxygen demand, and it may cause oxygen deptetion in aquatic systems. It is expected to have a moderate to high potential to affect the permination and growth of some plants. It is expected to have a low potential to affect aquatic organisms and secondary waste treatment microprochisms. The components of this chemical formulation are readily hipdegradable are not likely to bioconcentrate. When diluted with a large amount of water, this chemical formulation released directly or indirectly into the environment is not expected to have a significant impact.

SECTION XI. TRANSPORTATION

For transportation intormation regarding this product, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 254-1300; Oak Brook, IL (312) 654-5300; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittler, CA (213) 945-1255; Honotule, HI (808) 933-1661.

SECTION XII, REFERENCES

- 1. Unpublished data, Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY.
- Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Second Edition, Van Nostrand Reinhold Company, New York, N.Y., 1993.
- 3. Battelle's Columbus Laboratories, Water Quality Criteria Data Book Vol. 3 Effects of Chemicals on Aquatic Life Selected Data from the Literature Through 1968, for the U.S. Environmental Protection Agency, Project No. 18050 GWV, Contract No. 68-01-0007, May 1971.
- 4. National Association of Photographic Manufactures, Inc. and Hydroscience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, New York, 1974, 2 Vols.
- 5. Rodak Publication J-41, BOD5 and COD of Photographic Chemicals, Eastman Kodak Co., 1981;

- 6. McKee, J.E. and Wolf, H.W., Eds., Water Quality Criteria. Siete of California, Publication No. 3-A, 1963.
- 7. Bringmann, G. and Kuehn, R., Results of the Damaging Effect of Water Poliutants on Daphnia magna, Z. Wasser Abwasser Forsch., 10(5), 181-6 (1977) (in German).
- 8. Bringmann, G. and Kuehn, R., Results of Toxic Action of Water Pollutants on Daphnia magna (Straus) Tested by an Improved Standardized Procedure, Z. Wasser Abwasser Forsch., 15(1), 1-6 (1982)
- 9. Juhnke, I. and Luedemann, D., Results of the Study of 200 Chemical Compounds on Acute Fish loxicity Using the Golden Orfe Test, Z. Wasser Abwasser Forsch., 11(5), 161-4 (1978) (in German).
- 10. Fomona College, Medicinal Chemistry Project, Chemical Parameler Data Base, Leo, A.J. and Hansch, C., Eds., Seaver Chemistry Laboratory, Claremont, California, June 21, 1985.

The information contained herein is furnished without warranty of any bind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

D-0010.9006

HATERIAL SAFETY DATA SHEET

EASTMAN KODAK COMPANY 343 State Street Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call /16-722-5151 For other purposes, call the Marketing and Distribution Center in your area

. Kodak Accession Number: Revised Date of Preparation: 10/05/85 SECTION IN IDENTIFICATION CON

Product Name: KODAK INDUSTREX Fixer and Replenisher, Part B

Formula: Aqueous Mixture

Kodak Photographic Chemicals Catalog Number(s): CAT 139 7231 - To Make 75 Liters; CAT 194 0519 - To Make 100 Gallons; CAT 190 0273 - To Make 38 Liters

4465 Solution Number:

Kodak's Internal Hazard Rating Codes: R: 1 8: 2

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

COMPUNENT(S):	Veight Fercent	AUGIH TLV(R)	kodak Accession No.	ÇAS Reg. No.
 Water	7 0 -75	atter seek was	035290	7732-18-5
Aluminum sulfate	10-15	ne des terr	907954	10043-01-3
 *Sulfuric acid**	14	i mg/m3%%	w 907485	7664-95-9

*Principal Hazardous Component(s) xwithenical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

***See Section VI-A for additional information on exposure limits.

SECTION III. PHYSICAL DATA

Appearance and Odor: Clear, cotortess liquid; odortess

Boiling Point: GT 100 C (GT 212 F) @ 760 mmHg

Vapor Pressure: ca. 18 mmHg @ 20 C

Evaporation Rate (n-butyl acetate = 1): Not Available

Vapor Density (Air = 1): ca. 0.6

Volatile Fraction by Weight: ca. 75 %

Specific Gravity (H20 = 1): 1.247

pH: LT 1.0

Solubility in Water (by Weight): Complete

> D-0012,000 85-0088

FIRE AND EXPLUSION HAZARD DATA SECTION IV.

Flash Point: None

Extinguishing Media: Use agent appropriate for surrounding fire. Special Fire Fighting Procedures: Wear self-contained breathing

apparatus and protective clothing to prevent contact with skin and

eyes

Unusual Fire and Explosion Hazards: None

SECTION V. REACTIVITY DATA:

Stability: Stable

Incompatibility: Strong atkali

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur.

TOXICITY AND HEALTH HAZARD DATA SECTION VI.

EXPOSURE LIMITS: À.

See Section II USHA Permissible Exposure Limit (PEL): 1 mg/m3 (sulfuric acid)

EXPOSURE EFFECTS:

Inhalation: Low hazard for usual industrial handling.

Eyes: Causes irritation.

Skin: Causes irritation.

C. FIRST AID:

Immediately flush eyes with plenty of water for at least 15

minutes and get medical attention.

Immediately flush skin with plenty of scap and water and get

medical attention it symptoms are present after washing.

VENTILATION AND PERSONAL PROTECTION SECTION VII.

VENTILATION: Good general ventilation should be sufficient.

B. SKIN AND EYE PROTECTION: Safety glasses with side shields or googles are recommended. Impervious gloves should be worn.

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Avoid contact with strong alkali.

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SECTION IX. SPILL, LEAK, AND DISTUSAL PROCEDURES

Neutralize with baking soda (sodium bicarbonate).

Flush material to sewer with large amounts of water.

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

SECTION X. ENVIRONMENTAL EFFECTS DATA

This chemical formulation has not been tested for environmental effects. Some Laboratory test data and published data are available for the major components of this chemical formulation, and these data have been used to provide the following estimate of environmental impact: (1-3)

This chemical formulation is a strongly acidic aqueous solution, and this property may cause adverse environmental effects. It has no biological oxygen demand and is not expected to cause oxygen depletion in aquatic systems. It is expected to have a moderate to high potential to affect aquatic organisms and secondary waste treatment microorganisms. The components of this chemical formulation are not likely to bioconcentrate. The direct instantaneous discharge to a receiving body of water of an amount of this chemical formulation which will rapidly produce, by dilution, a final concentration of 10 mg/L or less is not expected to cause an adverse environmental effect. After dilution with a large amount of water, followed by secondary waste treatment, the chemicals in this formulation are not expected to have any adverse environmental impact.

SECTION XI. TRANSPURIATION

For transportation information regarding this product, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 588-9232; Oak Brook, IL (312) 954-6000; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, CA (213) 693-5222; Honolulu, HI (808) 833-1861.

SECTION XII. REFERENCES

- 1. Unpublished data, Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY.
- 2. Battelle's Columbus Laboratories, Water Quality Criteria Data Book Vol. 3 - Effects of Chemicals on Aquatic Life - Selected Data from the Literature Through 1968, for the U.S. Environmental Protection Agency, Project No. 18050 GWV, Contract No. 68-01-0007, May 1971.
- 3. McKee, J.E. and Wolf, H.W., Eds., Water Quality Criteria, State of California, Fublication No. 3-6, 1983.

D-0012,000G 85-0088 The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to . assers proper use and disposal of these materials and the safety and health of employees and customers.

D-8912,090G 6800-28

MATERIAL SAFETY DATA SHEET

EASTMAN KODAK CUMPANY 343 State Street Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call 716-722-5151 For other purposes, call the Marketing and Distribution Center in your area

Kodak Accession Number: 427915 Revised Date of Freparation: 01/06/85

SECTION I. IDENTIFICATION

Product Name: KODAK INDUSTREX Developer Replenisher, Part A

Formula: Aqueous Mixture

Kodak Photographic Chemicals Catalog Number(s): CAT 818 5100 - To Make 38 Litres: CAT 139 7215 - To Make 75 Litres: CAT 165 1990 - To Make 200 Gallons.

Solution Number: 4661

Rodak's Internal Hazard Rating Codes: R: 1 S. 2 Ft. 0 Ct. O TO THE POT OF THE POT HAS NOT

PRUDUCT AND COMPONENT HAZARD DATA Kodak ACGIH Weight PRINCIPAL -CAS Reg. No. TLVCK) Accession No. Percent COMPONENT (SDE · 7732-18-5 60-70 035290 Water 10117-38-1 20 - 25 907034 - Potassium sulfite 123-31-9 900356 2 面对了面的光光光。 Ċ. WHydroguinone** 1310-59-3 991383 1-5 2 mg/m3 wPotassium hydroxide Ceiling

*Principal Hazardous Component(s) **Chemical subject to the reporting requirements of Section 313 of Title III of the Superrund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

***See Section VI-A for additional information on exposure limits.

SECTION III. PHYSICAL DATA

- Appearance and Odor: Off-white solution; odortess Boiling Point: GT 100 C (GT 212 F) @ 760 mmHg
- Vapor Pressure: ca. 18 mmHg @ 20 C
- Evaporation Rate (n-butyl acetate = 1): Not Available
- Vapor Density (Air = 1): 0.6
- Volatile Fraction by Weight: ca. 65 %
- Specific Gravity (H20 = 1): 1.31
- pH: ca. 11.95
- Solubility in Water (by Weight): Complete

C-0076.500H 84-0265

SECTION IV. FIRE AND EXPLUSION HAZARD DATA

Flash Point: None

Asktinguishing Media: Not Applicable

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. v

Unusual Fire and Explosion Hazards: Fire or excessive heat may cause

production of hazardous decomposition products.

SECTION V. REACTIVITY DATA

Stability: Stable

Incompatibility: Strong acids

Hazardous Decomposition Froducts: Combustion will produce carbon dioxide and probably carbon monoxide. Oxides of sulfur may also be

Hazardous Polymerization: Will hot accur.

SECTION VI. TOXICITY AND HEALTH HAZARD DATA

EXPOSURE LIMITS: A.

See Section II USHA Permissible Exposure Limit (PEL): 2 mg/m3 (hydroquinone)

EXPOSURE EFFECTS: B.

Causes buins. Eves:

Skin: Protonged or repeated skin contact may cause skin irritation

and may cause an allergic skin reaction.

\mathbf{C}_{\perp} FIRST AID:

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.

Flush skin with plenty of water and wash with a non-alkaline Skim: (acid) type of skin cleanser.

If skin irritation or an altergic skin reaction develops, get

medical attention.

Note to Physicians: Caustic solution. Treat accordingly.

> C-0076,500F 84~0265

SECTION VII. VENTILATION ARD PERSONAL PROTECTION

- A. VENTILATION: Good general ventilation should be sufficient.
- B. Skin AND EYE PROTECTION:
 Safety glasses with side shields or goggles are recommended.
 For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.
 The routine use of a non-alkaline (acid) type of skin cleanser and regular cleaning of working surfaces, gloves, etc. will help minimize the possibility of allergic skin reaction.

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Keep container tightly closed and away from acids.

SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Neutralize with sodium bisulfate.
Flush material to an acid-free sewer with large amounts of water.
Discharge, treatment, or disposal may be subject to federal, state, or local laws.

SECTION X. ENVIRONMENTAL EFFECTS DATA

This chemical formulation has not been tested for environmental effects. Some Laboratory test data and published data are available for the major components of this chemical formulation, and these data have been used to provide the following estimate of environmental impact: 4-12

This formulation is a strongly alkaline aqueous solution, and this property may cause adverse environmental effects. It is expected to have a low biological oxygen demand and is expected to cause little oxygen depletion in aquatic systems. It is expected to have a high potential to affect aquatic organisms and a moderate potential to affect secondary waste treatment microorganisms and the germination and growth of some plants. The organic components of this chemical formulation are readily biodegradable and are not likely to bioconcentrate. The direct instantaneous discharge to a receiving body of water of an amount of this chemical formulation which will rapidly produce, by dilution, a final concentration of 0.05 mg/L or less is not expected to cause an adverse environmental effect. After dilution with a large amount of water, followed by secondary waste treatment, the chemicals in this formulation are not expected to have any adverse environmental impact.

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SECTION XI. TRANSPORTATION

For transportation information regarding this product, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 588-9232; Oak Brook, IL (312) 954-6000; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, UA (213) 693-5222; Homolutu, HI (308) 833-1661.

SECTION XII. REFERENCES

- 1. Unpublished data, Health and Environment Laboratories, Eastman Kodaki Company, Rochester, NY.
- 2. Verschueren, K., Handbook of Environmental Data on Organic Chemicals. Second Edition, Van Nostrand Reinhold Company, New York, R.Y., 1983.
- 3. Battelle's Columbus Laboratories, Water Quality Criteria Data Book Vol. 3 Effects of Chemicals on Aquatic Life Selected Data from the Literature Through 1988, for the U.S. Environmental Protection Agency, Project No. 18050 GWV, Contract No. 68-01-0007, May 1971:
- 4. National Association of Photographic Manufacturers, Inc. and Hydroscience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, New York, 1974, 2 Vols.
- 5. Kodak Publication J-41, BOD5 and COD of Photographic Chemicals, Eastman Kodak Co., 1981.
- Fitter, F., Determination of Biological Degradability of Organic Substances, Water Res., 10(3), 231-5 (1976).
- 7. McKee, J.E. and Wolf, H.W., Eds., Water Quality Criteria, State of California, Publication No. 3-A, 1963.
- 8. Bringmann, G. and Kuehn, R., Results of the Damaging Effect of Water Follutants on Daphnia magna, Z. Wasser Abwasser Forsch., 10(5), 161-6 (1977) (in German).
- 9. Bringmann, G. and Kuehn, E., "Results of Toxic Action of Water Follutants on Daphnia magna (Straus) Tested by an Improved Standardized Procedure, " Z. Wasser Abwasser Forsch., 15(1), 1-6 (1982) (in German).
- 10. National Association of Photographic Manufacturers, Inc. and Hydroscience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, New York, 1974, 2 Vols.
- 11. Wellens, H., "Comparison of the Sensitivity of Brachydanio rerio and Leuciscus idus in the Study of the loxicity of Fish of Chemical Compounds and Waste Waters," Z. Wasser Abwasser Forsch., 15(2) 49-52 (1982) (in German).

U-0076,500H 84-0265

12. Pomona College, Modicinal Chemistry Project, "Uhomical Parameter Data Base," Leo, A.J. and Hansch, C., Eds., Seaver Chemistry Laboratory, Ularemont, California, June 22, 1783.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employeds and customers.

0-0076.500H 84-0265

MATERIAL SAFETY DATA SHEET

EASTMAN KODAK CUMPANY 343 State Street Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call 716 722-5151 For other purposes, call the Marketing and Distribution Center in your area.

Revised Date of Preparation: 10/31/86 KODAK Accession No.: 385930

SECTION I. IDENTIFICATION : 1

- Product Name: KUDAK INDUSTREX Developer Replenisher, Part B

- Formula: Organic Mixture

- Salution Number: 3606

- Kodák Hazard Rating Codes: R: 2 S: 3 F: 2 C: 0 - 2 C

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

A. COMPONENT(S):	Weight Percent	TEV(R)	Kodak Accession No.	CAS Reg. No.
*:************************************	85-90	10 рражи	900753	64-19-7
1-Phenyl-3-pyr	azolidinor 5-10	A (2)	902672	92-43-3

*Frincipal Hazardous Component(s)
** See Section VI-A for additional information on exposure limits.

B. FRECAUTIONARY LABEL STATEMENT(S):

CONTAINS: adetic acid
DANGER!
CAUSES SEVERE SKIN AND EYE BURNS
VAPOR EXTREMELY IRRITATING
COMBUSTIBLE
Do not set in eyes, on skin, on clothing.
Avoid breathing vapor.
Use with adequate ventilation.
Keep away from heat and flame.
First Aid: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing. If inhaled, remove to fresh air.
Call a physician immediately.

C-0079,000H 81-0092

CTION III. PHYSICAL DATA

Appearance and Udor: Amber to reddish-brown liquid; strong vinegar

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- Boiling Point: GT 100 C (GT 212 Fr 8 760 mmHg .
- Vapor Pressure: ca. 15 mmHg @ 20 C
- Evaporation Rate (n-buty) acetate (1): Not Available
- Vapor Density (Air = 1): ca. 1.83
- Votatile Fraction by Weight: ca. 90 % Specific Gravity (H2O = 1): 1.07-1.08 pH: ca. 2.0
- Solubility in Water (Coy Weight): Complete

SECTION IV. FIRE AND EXPLUSION HAZARD DATA

- Flash Point: 39 C (103 F) Tag closed cup Flash Point: 43 C (109 F) Tag open cup
- Flammable Limits in Air (mg/L): Lower: 143 at 60 C (140 F) Upper: 378 at 73 E (199 F)
- Extinguishing Media: Water spray; CO2; Dry chemical
- Special Fire Fighting Procedures:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards:

Fire or excessive heat may cause production of hazardous decomposition products.

SECTION V. REACTIVITY DATA

- Stability: Stable
- Incompatibility: Strong oxidizers, strong atkali
- Hazardous Decomposition Products:

As with any other organic material, combustion will produce carbon dioxide and probably carbon monoxide. Oxides of nitrogen may also be present.

Hazardous Polymerization: Will not occur.

TOXICITY AND HEALTH HAZARD DATA SECTION VI.

THRESHOLD LIMIT VALUE: Α.

See Section 11 QSHA Permissible Exposure Limit (PEL): 10 ppm (acetic acid)

EXPOSURE EFFECTS: В.

Inhalation: Vapor extremely irritating.

Contact with the diquid causes severe eye burns. Eyes

Vapor can cause eye irritation.

Causes severe burns. Skin

C. FIRST ALD:

EInhalation: Remove from exposure, treat symptomatically, and get medical attention if symptoms persist.

Immediately flush eyes with plenty of water for at least 15 minutes and get prompt medical attention.

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and Skin: shoes. Get medical attention.

Launder contaminated clothing before reuse.

SECTION VII. PERSONAL PROTECTION AND CONTROLS

A. RESPIRATORY PROTECTION:

An appropriate NIOSH-approved respirator for organic acid Vapor should be worn it needed.

VENTILATION: Ρ.

Local Exhaust: Recommended Mechanical (General): Recommend at least ten air changes per hour for good general room ventilation.

SKIN AND EYE PROTECTION:

Wear goggles or face shield, rubber gloves, and protective c.tothius.

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Avoid strong alkali. Material is classified as a combustible liquid. Keep away from heat Keep from contact with oxidizing materials.

SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Eliminate all ignition sources. Neutralize with baking soda (sodium bicarbonate). Small amount - flush material to sewer with large amounts of water. Large amount - absorb material in vermiculité or other suitable absorbent and place in impervious container. Dispose in incinerator equipped with afterburner and scrubber or contract with licensed chemical waste disposal service. Discharge, treatment, or disposal may be subject to federal, state,

C-0079.000H 81-0092

ENVIRONMENTAL EFFECTS DATA X MOITS

This chemical formulation has not been tosted for environmental effects. Some laboratory test data and published data are available for the major components of this chemical formulation, and these data have been used to provide the following estimate of environmental impact: 1,2,3,4,5

This chemical formulation forms a strongly acidic aqueous solution. This chemical formulation has a high biological oxygen demand, and it is expected to cause significant oxygen depletron in aquatic systems. It is expected to have a high potential to affect aquatic organisms and secondary waste treatment microorganisms. It is expected to have a moderate potential to affect the germination and growth of some plants. The components of this chemical formulation are expected to be readily biodegradable and are not likely to broconcentrate. The direct instantaneous discharge to a receiving body of water of an amount of this chemical formulation which will Tapidly produce, by dilution, a final concentration of 1.0 mg/L or less is not expected to cause an adverse environmental effect. However, after dilution with a large amount of water, followed by secondary waste treatment, the chemicals in this formulation are not expected to have any adverse environmental impact. there is an extensive a final process of the second of the

MOLTATATORSMART SECTION X12

For transportation information regarding this product, please phone the Eastman kodak Distribution Center nearest you: Rochester, NY (716) 254-1300; Oak Brook, IL (312) 654-5300; Uhambies, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittler, CA (213) 945-1255; Homolulu, HI

SECTION XII. REFERENCES

- Unpublished Data. Health, Safety, and Human Factors Laboratory. Eastman Kodak Company, Rochester, New York.
- Verschueren, K.; Handbook of Environmental Data on Organic Chemicals, Van Nostrand Reinhold Company, New York, N.Y., 1977. 2.
- Baltelle's Columbus Laboratories, Water Quality Critical Data Book Vol. 3 - Effects of Chemicals on Aquatic Life - Selected Data from the Literature Through 1968, for the U.S. Environmental Protection Agency, Project No. 18050 GWY, Contract No. 68-01-007; May 1971.
- National Association of Photographic Manufacturers, Inc. and Hydroscience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, New York, 1974, 2 vots.
- Kodak Publication J-41, BODS and COD of Photographic Chemicals, Elementario de la compansión de la compa

MATERIAL SAFETY DATA SHEET

EASTMAN KODAK COMPANY 343 State Street Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call 716 722-5151 For other purposes, call 800-225-5352 (in New York State call 716-458-4014)

Revised Date of Preparation: 10/30/86 Kodak Accession Number: 354818

SECTION I. IDENTIFICATION

- Product Name: KODAK INDUSTREX Developer Replenisher, Part C
- Formula: Aqueous Mixture Kodak Photographic Chemicals Catalog Number(s): CAT 139 7215 To Make 75 Litres; CAT 184 5650 To Make 100 Gallons; CAT 190 0190 To Make 38 Litres
 - Solution Number: 3200
- Kodak Hazard Rating Codes: R: 2 S: 3 F: 1 C: 0

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

Α.	COMPONENT(S):	Weight Percent	TLV(R)	Kodak Accession No.	CAS Reg. No.
	Water	70-75		035290	7732-18-5
	Glutaraldehyde	bisulfite 20-25		909855	7420-89-5
	*Glutaraldehyde	10-15	0.2 ppm Ceiling	908648	111-30-8

*Principal Hazardous Component(s)

B. PRECAUTIONARY LABEL STATEMENT(S):

CAUSES SKIN AND EYE BURNS

HARMFUL IF INHALED

CAN CAUSE ALLERGIC SKIN REACTION

Do not get in eyes, on skin, on clothing.

Avoid breathing vapor.

Use with adequate ventilation.

Wash thoroughly after handling.

First Aid: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing. If inhaled, remove to fresh air. Call a physician immediately.

Skin:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

If skin burns or an allergic skin reaction develops,

get medical attention.

Launder contaminated clothing before reuse.

TOXICITY DATA

Test

Species

Result(1)

Skin Irritation

Guinea Pig

Strong

U.S. D.O.T. Skin Corrosion

Rabbit

Positive

SECTION VII. PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION:

An appropriate NIOSH-approved respirator for organic vapors should be worn if needed.

VENTILATION:

Local Exhaust:

If needed to control vapors.

Mechanical (General): Recommend at least ten air changes per

hour for good general room ventilation.

C: SKIN AND EYE PROTECTION:

Protective gloves should be worn. Safety glasses with side shields or goggles are recommended. The routine use of a non-alkaline (acid) type of hand cleaner will help minimize the possibility of allergic skin reaction.

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Avoid contact with mineral acids. Keep from contact with oxidizing materials.

SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Neutralize with sodium metabisulfite. Flush material to an acid free sewer with large amounts of water.

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

> C-0080.000H 81-0093

ND FIX 1 litres REPLENISHER

HOW TO MIX Kotak Industrex **FIXER AND**

TO MAKE 75 LITRES (19.8 U.S. GALLONS)

This package consists of two parts:

PART A (Concentrate) is contained in a flexible polyethylene liner with a capped pouring spout.

PART B (Concentrate) is contained in two plastic bottles.

NOTICE: Observe precautionary information on containers. Use rubber gloves and visor goggles when mixing.

READ THIS NOTICE: This product will be replaced if defective in manufacture, labeling, or packaging. Except for such replacement, this product is sold without warranty or liability even though defect, damage, or loss is caused by negligence or other fault.

LIQUID VOLUMES ARE GIVEN IN THE METRIC AND U.S. SYSTEM EQUIVALENTS.

NOTE: The recommended rates of replenishment are given in the appropriate KODAK X-OMAT Processor Service Bulletin, available from your Kodak Technical Sales Representative, from your x-ray dealer who markets KODAK X-OMAT Processors, or from Customer and Technical Services, Health Sciences Division, Eastman Kodak Company, Rochester, New York 14650.

Thank you for using KODAK Chemicals.

Always measure and record the quantity of fixer and replenisher solution in the replenisher tank before mixing.











75 LITRES (19.8 GALLONS)

IMPORTANT: Be sure that the tank has room enough to accept an additional 75 litres (19.8 gallons).

Add 52.5 litres (13.9) gallons) of water at 24 ± 3 °C (75 ± 5°F). Add the contents of one full container of Part A. Stir continuously.

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With continuous stirring, slowly add the contents of two full bottles of Part B.

Stir until the solution is completely mixed.

HOW TO MAX ROTAL PEVELOPER BEREVISHER

TO MAKE 75 LITRES (19.8 U.S. GALLONS)

PART A (concentrate) is contained in a flexible polyethylene liner with a capped pouring spout.

PART B (concentrate) is contained in a plastic bottle.

PART C (concentrate) is contained in three plastic bottles.

NOTICE: Observe precautionary information on containers. Use rubber gloves and visor goggles when mixing:

READ THIS NOTICE: This product will be replaced if defective in manufacture, labeling, or packaging. Except for such replacement, this product is sold without warranty or liability even though defect, damage, or loss is caused by negligence or other fault.

Thank you for using KODAK Chemicals.

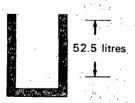


LIQUID VOLUMES ARE GIVEN IN THE METRIC AND U.S. SYSTEMS

Always measure and record the quantity of developer replenisher solution in the replenisher tank before mixing.



IMPORTANT: Be sure that the tank has room enough to accept an additional 75 litres (19.8 gallons)



Add 52.5 litres (13.9 gallons) of water at 24 ± 3°C (75 ± 5°F).



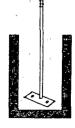
Add the contents of one full container of PART A. Stir continu-



While stirring continuously, slowly add the contents of one full bottle of PART B.



While stirring continuously, slowly add the contents of three full bottles of PART C.



Continue stirring for two minutes. Replace the floating lid and dust MODIFIED PERMIT

PART I, II, AND III

WATTS BAR NUCLEAR PLANT

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 101 - Diffuser discharge to the Tennessee River.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations	Monitoring Re	equirements
Ellinent Characteristics		Measurement	Sample
·	Instantaneous Maximum	Frequency	<u>Type</u>
Intake Flow-m ³ /Day (MGD) Discharge Flow-m ³ /Day (MGD) Discharge Temperature °C (°F) <u>1</u> . TRC-diffuser (mg/L)	NA NA 35.0 (95.0) 0.10	Continuous Continuous Continuous 5/week <u>2</u> /	Pump logs Recorder Recorder Multiple grab <u>2</u> /
TRC-internal (mg/L)	1.0 <u>3</u> /	5/week <u>2</u> /, 3/	Multiple grab $2/$, $3/$

Chlorine may be discharged continuously; however, total residual chlorine (TRC) shall not exceed a maximum instantaneous concentration of 0.10 mg/L at the diffuser pipe. Additionally, continuous chlorination of the ERCW and RCW systems at a maximum concentration of 1.0 mg/L 3/ of TRC at the internal monitoring point for the purpose of asiatic clam control is permitted when the system is operating at an intake temperature above 15.6°C (60°F). Intake temperature shall be monitored and data shall be retained but not reported on DMRs.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored at a frequency of 1/week.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): diffuser pipe prior to entry into the Tennessee River except that intake temperature and flow shall be monitored at the plant intake(s) and TRC shall also be monitored at the internal monitoring point.

CONTINUED

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 101 - Diffuser discharge to the Tennessee River. Continued.

- I/ Thermal monitoring at the diffuser pipe is not applicable until critically of Unit 1. The receiving water shall not exceed (1) a maximum water temperature change of 3°C (5.4°F) relative to an upstream control point, (2) a maximum temperature of 30.5°C (86.9°F), except when the upstream control temperature approaches or exceeds this value, and (3) a maximum rate of change of 2°C (3.6°F) per hour outside of a mixing zone which shall not exceed the following dimensions: (1) a maximum length of 240 feet downstream of the diffuser, and (2) a maximum width of 240 feet. Compliance will be demonstrated by means of field surveys. These surveys will be performed during the critical seasons of spring, summer, and fall of the first year of commercial operation of both Unit 1 and Unit 2 not less than two surveys per season will be conducted. Measured temperature rise, downstream temperature, rate of temperature change, and the extent of the mixing zone will only be reported as the result of the field surveys.
- Monitoring for TRC shall be applicable only during periods of chlorine addition. Multiple grab samples is defined as not less than four equally spaced grab samples during a one-hour period. Monitoring for TRC shall be repeated following operational changes which could cause an increase in concentration of TRC discharged. If condenser chlorination is instituted, dechlorination facilities, if needed, shall be operational prior to start of condenser chlorination.
- 3/ Applicable only to RCW and ERCW system chlorination. Monitoring of TRC at the internal monitoring point is primarily for operational control of the chlorination system. Exceedence of the 1.0 mg/L limitation shall not be deemed noncompliance so long as permittee can demonstrate compliance with the 0.10 mg/L limitation for TRC at the diffuser pipe subsequent to such exceedence.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 102 - Yard Holding Pond effluent to the cooling tower blowdown line.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations			Monitoring Requirements	
	Daily Avg.	Daily Max.	Instantaneous Max.	Measurement Frequency	Sample Type
Flow-m ³ /Day (MGD)	. NA	NA 20	NA :	2/Week <u>1</u> / 1/Week	Instantaneous Grab
Oil and Grease (mg/L) Total Suspended Solids (mg/L)	15 30	20 100	NA NA	2/Week <u>1</u> /	Grab
Total Residual Chlorine (mg/L) Polychlorinated Biphenyl	NA NA	NA NA	0.10 <u>2</u> / See Part III.C	1/Day <u>2</u> / 1/6 Months	Grab <u>2</u> / Grab

Direct overflow from the yard Holding Pond to the Tennessee River is allowed under emergency conditions to protect dike stability, but only to the minimum extent necessitated by the emergency. Discharge temperature shall not exceed 30.5°C (86.9°). Verbal notification of such overflow shall be provided to the Director, Water Management Division, and to the State Director within five days after any occurrence with immediate followup by letter. On each occurrence, a grab sample(s) shall be collected daily for a total suspended solids, oil and grease, temperature and total residual chlorine analysis and results of such analysis shall be reported either with the notification of overflow or within 30 days of the occurrence.

The pH shall not be less than 6.0 standard units no greater than 9.0 standard units and shall be monitored at a frequency of 1/day. 2/

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter other than trace amounts.

Samples taken in compliance with monitoring requirements specified above shall be taken at the following location(s): Yard Holding Pond effluent prior to mixing with any other waste stream.

- 1/ Monitoring shall also be conducted during (or after) each rainfall exceeding two inches per day and shall be sampled during the period of maximum expected flow.
- <u>2</u>/ Limitations and monitoring requirements are applicable only during periods of direct discharge to the Tennessee River.

During the period beginning on the completion of the Low Volume Waste Treatment Pond and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 103 - Low Volume Waste Treatment Pond effluent to the Yard Holding Pond (OSN 102).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations		Monitoring Requirements	
<u>priludit characteristic</u>	Daily Avg.	Daily <u>Max.</u>	Measurement <u>Frequency</u>	Sample <u>Type</u>
Flow-m ³ /Day (MGD)	NA	NA	1/Day	Pump logs
Oil and Grease (mg/L)	15	20	1/Week <u>1</u> /	Grab
Total Suspended Solids (mg/L)	30	100	2/Week <u>1</u> /	Grab
Polychlorinated Biphenyl	See Par	t III.C.	1/6 Months	Grab

The pH shall not be less than NA standard units nor greater than NA standard units and shall be monitored at a frequency of NA.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Low Volume Waste Treatment Pond discharge prior to mixing with any other waste stream except that flow shall be monitored at the turbine building sump. Alternate discharge pathway for the turbine building sump shall also be monitored $\underline{1}$.

In the event that turbine building sump is discharge directly to the Yard Holding Pond, total suspended solids and oil and grease in the sump effluent shall be subject to the above effluent limitations and shall be monitored 5/week and also reported under OSN 103.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 104 - Liquid Radwaste System effluent to the cooling tower blowdown line.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations		Monitoring Requirements	
bilitent (maracteristics	Daily Avg.	Daily <u>Max.</u>	Measurement <u>Frequency</u>	Sample <u>Type</u>
Flow-m ³ /Day (MGD) Oil and Grease (mg/L)	NA 15	NA 20	1/Batch 2/Week 2/Week	Calculation Grab Composite 1/
Total Suspended Solids (mg/L)	30	100	2/Week	Compos

Note: The radioactive component of this discharge is regulated by the U.S. Nuclear Regulatory Commission under the requirements of the Atomic Energy Act and not by the Environmental Protection Agency under the Clean Water Act.

In the event metal cleaning waste are processed and discharged through the Liquid Radwaste System, the discharge shall comply with the limitations specified for Metal Cleaning Waste (OSN 107).

The pH shall not be less than NA standard units nor greater than NA standard units and shall be monitored at a frequency of NA.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, or other floating matter other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Radwaste Treatment system prior to mixing with any other waste stream.

1/ One grab sample/batch composited for analysis over a 24-hour day.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 105 - Condensate Demineralizer Regeneration waste to the cooling tower blowdown line.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Li	mitations	Monitoring Requir	ements
	Daily Avg.	Daily <u>Max.</u>	Measurement <u>Frequency</u>	Sample Type
Flow-m ³ /Day (MGD)	NA	NA	1/Batch	Calculation
Oil and Grease (mg/L)	15	20	1/Day	Grab
Total Suspended Solids (mg/L)	30	100	1/Batch	Composite $1/$

Note: Limitations and monitoring requirements on this page are not applicable when discharge is directed to the Radwaste System (OSN 104) or the Low Volume Waste Treatment Pond (OSN 103) via the turbine building sump.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored at a frequency of once per batch by a grab sample.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Condensate Demineralizer Regeneration waste treatment facilities prior to mixing with any other waste stream.

1/ One grab sample/batch composited for analysis over a 24-hour day.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 106 - Steam Generator Blowdown to cooling tower blowdown.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations Daily Daily Max.		Monitoring Requirements Measurement Sample Frequency Type	
Flow-m ³ /Day (MGD) Oil and Grease (mg/L) Total Suspended Solids (mg/L)	NA	NA	1/Month	Instantaneous
	15	20	1/Quarter	Grab
	30	100	1/Month	Grab

Limitations and monitoring requirements on this page are not applicable if blowdown is discharged to the condensate demineralizer system (for recycle).

The pH shall not be less than NA standard units nor greater than NA standard units and shall be monitored at a frequency of NA.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from the Steam Generator Blowdown prior to mixing with any other waste stream.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 107 - Metal Cleaning Waste Pond effluent(s) to the Yard Holding Pond (OSN 102).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	<u>Discharge Limitations</u> Daily Max. (mg/L)	Monitoring Requirements Measurement Sample Frequency Type
Flow-m ³ /Day (MGD) Oil and Grease Total Suspended Solids Copper, Total Iron, Total Phosphorous as P 2/ Chem. Oxygen Demand 3/	NA 15 30 1.0 1.0 1.0	1/Batch Calculation 1/ Grab 1/ 8-Hour Composite 1/ 8-Hour Composite 1/ 8-Hour Composite 1/ 8-Hour Composite 1/ 8-Hour Composite 1/ 8-Hour Composite

Metal cleaning waste shall mean any cleaning compounds, rinse waters or any other waterborne residues derived from chemical cleaning any metal process equipment. NOTE: Standing water in pipes (which may or may not be chlorinated) is not metal cleaning waste if not associated with chemical cleaning and subsequent rinses of cleaning compounds.

Metal cleaning waste shall not be discharged into a pond(s) before all nonmetal cleaning liquids have been removed.

No wastes other than metal cleaning wastes shall be discharged into the Metal Cleaning Waste Ponds prior to complete discharge of metal cleaning wastes and complete removal of all solids deposited from metal cleaning waste treatment.

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by a grab sample. $\underline{1}$ /

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter in other than trace amounts.

CONTINUED

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 107 - Metal Cleaning Waste Pond effluent to the Yard Holding Pond (OSN 102). Continued.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from the individual pond(s) prior to mixing with any other waste stream except that waste flow generated per batch shall also be determined.

- 1/ On start of discharge and for each complete 8-hour period thereafter up to one day (24 hours) with one grab sample taken immediately prior to termination of discharge. For discharge periods longer than one day a composite shall be required on start of discharge and once/week thereafter for a minimum of three 8-hour periods until termination of discharge with one grab sample taken immediately prior to termination of discharge.
- 2/ Limitation and monitoring requirements shall apply only if phosphorous bearing cleaning solutions are used.
- 3/ Limitation and monitoring requirements shall apply only if organic acid cleaning solutions are used.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 108 - Cooling Tower Desilting Basin effluent to the Yard Holding Pond (OSN 102).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations		Monitoring Requirements	
HITTUCK CHALACTERISTS	Daily Avg.	Daily <u>Max.</u>	Measurement <u>Frequency</u>	Sample <u>Type</u>
Flow-m ³ /Day (MGD) Total Suspended Solids (mg/L)	NA 30	NA 100	1/Batch 2/Batch	Calculation Grab $\underline{1}/$

The pH shall not be less than NA standard units nor greater than NA standard units and shall be monitored at a frequency of NA.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): discharge from the Desilting Basin effluent prior to mixing with any other waste stream.

^{1/} Samples shall be collected on start of discharge and immediately prior to termination of discharge.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 109 - Makeup Water Treatment Plant Neutral Waste Tank discharge to the condenser cooling water system (flume).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations		Monitoring Requirements	
	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow-m ³ /Day (MGD) Oil and Grease (mg/L)	NA 15	NA 20	1/Batch 2/Month	Calculation Grab
Total Suspended Solids (mg/L)	30	100	1/Batch	Grab

Note: Limitations and monitoring requirements on this page are not applicable when discharge is directed to the Low Volume Waste Treatment Pond (OSN 103) via the turbine building sump. Limitations and monitoring are applicable if the turbine building sump discharges to the Yard Holding Pond (OSN 102).

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored at a frequency of once per batch.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Neutral Waste Tank discharge prior to mixing with any other waste stream.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 111 - Sewage Treatment Plant (four package plants in parallel) effluent to the Runoff Holding Pond (OSN 112).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations		Monitoring Requirements	
,	Monthly Avg.	Daily Max.	Measurement <u>Frequency</u>	Sample <u>Type</u>
Flow-m ³ /Day (MGD)	1/	NA	Continuous	Recorder
Dissolved oxygen	At leas	t 1.0 mg/L	5/week	Grab
BOD ₅ (mg/L) <u>2</u> /	30	45	1/Week	Grab
Total Suspended Solids (mg/L)	30	45	1/Week	Grab
Settleable Solids (ml/L)	NA	1.0	5/Week	Grab
Total Residual Chlorine (mg/L)	NA	0.5	5/Week	Grab
Fecal Coliform (#/100 ml)		1000	1/Week	Grab

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored at a frequency 5 per week by Grab.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Sewage Treatment Plant effluent prior to mixing with any other waste stream.

- 1/ Individual units have design capacities of 114, (0.030), 114 (0.030), 114 (0.030), and 114 (0.030). No unit shall be hydraulically overloaded.
- 2/ The <u>geometric</u> mean of fecal coliform samples shall not be determined unless 10 or more are taken in any month. Since the fecal coliform monitoring requirements for this permit is less than 10 samples per month, permittee shall report minimum <u>arithemetic average</u>, and maximum values.

During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall(s) serial number(s) 112 - Runoff Holding Pond to unnamed tributary of Yellow Creek.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations	Monitoring	
<u>Requirements</u>	Avg. Monthly Concentration	Measurement Frequency	Sample <u>Type</u>
BODs (mg/L)	20	1/Week	Grab
Total Suspended Solids (mg/L)		2/Month <u>1</u> /	Grab
Settleable Solids (mg/L)		2/Month 1/	Grab
Ammonia (mg/L)	5	1/Week	Grab
Dissolved oxygen (mg/L)	5.0 (minimum)	1/Week	Grab

The pH shall not be less than 6 standard units nor greater than 9 standard units and shall be monitored at a frequency 1 per week by Grab.

There shall be no distinct discharge of floating scum, solids, oil sheen, visible foam, and other floating matter other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): point(s) of discharge from the Runoff Holding Pond.

1/ Total suspended solids and settleable solids monitoring frequency 2/month during the month of March through October of each year. Sampling shall be conducted during the first significant rainfall of the week or on Friday if no significant rainfall occurred.

B. SCHEDULE OF COMPLIANCE

- 1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule.
 - a. Compliance with effluent limitations effective date for start of discharge as applicable.
 - Plume report (III.E.) 18 months after commercial operation date of Unit 2.
 - c. Preoperational Aquatic Monitoring Program (III.F.) [complete]
 - d. Operational aquatic monitoring program (III.G.)
 - e. Erosion and Sediment Control Report (III.I.) [complete]
 - f. Discharge Chlorination Study (III.K.) [complete]
 - q. Flow Calibration Report (III.N.)
 - 1. Recertification Annually after certification (December 31)
 - h. Priority Pollutant Data (III.N.)
 - First Report 12 months after commercial operation date of Unit 1.
 - Second Report 12 months after commercial operation date of Unit 2.
- Permittee shall at all times provide the operation and maintenance necessary to operate the existing facilities at optimum efficiency.
- 3. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance, and remedial actions taken, and the probability of meeting the next scheduled requirement.

PART III

OTHER REQUIREMENTS

Reporting of Monitoring Results

Monitoring results obtained during the previous three months shall be summarized for each month (each quarter if monitoring frequency is quarterly) and must be reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. Duplicate signed copies of these, and all other reports required by Section D of Part II, Reporting Requirement; and one copy of each item required by Part III Sections D, L, and N; shall be submitted to the EPA and the State at the following addresses:

Environmental Protection Agency Region IV Facilities Performance Branch Water Management Division 345 Courtland, Street, NE. Atlanta, Georgia 30365 Tennessee Department of Health and Environment Division of Water Management 150 Ninth Avenue, North TERRA Building Nashville, Tennessee 37203

Tennessee Department of Health and Environment Division of Water Management 2501 Milne Street Chattanooga, Tennessee 37406

B. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C), and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

- 1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- 2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act when applicable.

C. There shall be no discharge of polychlorinated biphenyls (PCB) compounds such as those commonly used for transformer fluid. In the event that PCB-containing equipment is used onsite, administrative procedures shall be instituted to (1) maintain a detailed inventory of PCB use, (2) assure engineering design and construction to preclude release of PCBs to the environment, and (3) effectively detect the loss of PCBs from equipment.

^{1/} Continuation of previous reporting requirements.

The permittee shall notify the Director, Water Management Division, and State Director in writing not later than ninety (90) days prior to instituting use in cooling system(s) of any biocide or chemical which may be toxic to aquatic life, other than chlorine addition to the ERCW, RCW, or CCW systems. Such notification shall include:

- 1. Name and general composition of biocide or chemical,
- Ninety-six hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge shall occur,
- 3. Quantities to be used,
- 4. Frequencies of use,
- 5. Proposed discharge concentrations, and
- 6. EPA registration number, if applicable.
- E. Effluent diffuser shall be designed to assure a minimum dilution factor of 10 at all river flow conditions. Subsequent to commercial operation of Unit 2, field measurements (supplemented as necessary with modeling results) shall be conducted to determine three dimensional configuration of the thermal plumes, substantiate the dispersion modeling, and assure conformance with the assigned thermal mixing zone. The report on thermal plum and dispersion characteristics shall be submitted not later than 18 months after commercial operation of Unit 2 is achieved.
- F. Nonradiological preoperational aquatic monitoring was discontinued (reference letter Martin E. Rivers to Kenneth W. Bunting, WATTS BAR NUCLEAR PLANT NPDES PERMIT NO. TN0020168 PREOPERATIONAL NONRADIOLOGICAL AQUATIC MONITORING REPORT dated December 1, 1986).
- Not later than start of the biological year in which 100 percent power is predicted for Unit 1, permittee shall implement the nonradiological operational aquatic monitoring plan as submitted to EPA on August 31, 1977, with modifications to the fisheries program on March 24, 1980, and February 26, 1981, and to the nonfish/water quality program on October 12, Reports shall be submitted annually beginning 18 months after 100 percent power achieved on unit 1, the first report including data from commencement of operational monitoring until 12 months after 100 percent power achievement. The operational monitoring program shall continue for a period not less than two years beyond the date that 100 percent power is achieved on Unit 2. In the event that fuel load for Unit 2 is delayed beyond two years after 100 percent power is achieved on Unit 1, permittee may request of the permitting authority that the program be suspended until the start of the year in which 100 percent power is scheduled for Unit 2. Additionally, permittee may request that changes to the program and schedules be made during the term of the study as supported by study results. Upon approval by the permitting authority, suspension or modifications to the program may be instituted.

Additional monitoring of the intake and diffuser gate discharge shall be once/month and shall include total, suspended, settleable, and dissolved solids; ammonia nitrogen; and total copper, iron, manganese, and zinc. This data shall be included in the annual reports and an assessment made as to whether the discharge is in compliance with the Tennessee Water Quality Standards.

Copies of all plans and reports submitted in accordance with Parts III.E., F., and G. shall be forwarded by the permittee as follows:

	Director, Water Management Division, EPA (Atlanta)
	Chief, Ecological Support Branch, EPA
b.	(Athens)
	Director, Division of Licensing USNRC (Bethesda)
	Regional Administrator, Region II, USNRC
	(Atlanta)
	Regional Director, Fish and Wildlife
	Service (Atlanta)
	Director, Tennessee Division of Water
	Management (Nashville)
	Regional Engineer, Tennessee Division of Water Management (Chattanooga)

- I. Subsequent reporting of the Erosion and Sediment Control Plant is not necessary unless determined necessary by the Director, Water Management Division, or the State Director.
- J. In order to maintain thermal compliance there shall be no discharge through the plant diffuser system when Tennessee River flows are less than 3,500 cubic feet per second. Positive interlocks with the Watts Bar Hydroelectric Plant shall be provided to assure compliance with this requirement.
- K. Chlorination Study [complete]
- L. Permittee shall demonstrate that wiers and other devices used to measure flow at all outfall serial numbers (other than approved use of pump logs) are capable of measuring flows within a maximum deviation of less than plus or minus 10 percent from the true discharge rates throughout the range of expected discharge flows. Flow meters shall be calibrated not less than annually and documentation shall be maintained with NPDES records for the facility. Permittee shall certify the calibration of flow measurement devices not less than annually, beginning on December 31, 1986.
- M. The following alternate flow paths shall only be used under direct authority of the plant superintendent.
 - 1. Turbine building sumps discharging directly to the yard holding pond (OSN 102).
 - 2. Turbine building sumps discharging to the metal cleaning waste ponds.
 - 3. Condensate Demineralizer Regeneration Waste to the Cooling Tower Blowndown (OSN 105).
 - 4. The makeup water treatment plant Neutral Waste Tank (OSN 109) to the CCW flume.

Part III
Page III-4
Permit No. TN0020168

N. Not more than 12 months after the commercial operation dates of Units 1 and 2, respectively, permittee shall submit representative data as provided in 40 CFR 122.21(g)(7)(ii), (iii), and (iv) for outfalls 101, 102, 103, and 112. In the event that any pollutant is present at an unacceptable level, this permit shall be modified, or alternatively revoked, and reissued to comply with any applicable provisions of the Clean Water Act.

FILM PROCESSING EQUIPMENT
WATTS BAR NUCLEAR PLANT

The X-ray Film Processing Equipment is used for developing X-ray photographs of welds. Approximately 300 gallons of effluent are discharged daily. The discharge from the Film Processing Equipment is presently discharged to the storm drain which is routed to the Construction Runoff Pond. Analytical results of a sample collected of the discharge are provided. Based on these results, this discharge will be redirected to the Sewage Treatment Plant (OSN 111). The Material Safety Data Sheets for the processing chemicals are also attached. We request that no sampling requirements be imposed on this discharge due to its small flow and since the discharge does not exhibit EP toxicity.

DATA REPORT

Sample Received by Lab: 881223

ALT. IDC	ANALYSIS PERFORMED	RESULT	UNITS
00530	Non-Filterable Residue	< 1	mg/L
00310	Biochem Oxy Demand 5 Day	49	mg/L
00937	Potassium, Tot in Water	410	mg/L
00929	Sodium, Total in Water	88	mg/L
00610	Ammonia Nitrogen	240	mg/L
00335	Chemical Oxygen Demand	1100	mg/L
00680	Total Organic Carbon	480	mg/L
01092	Zinc, Total in Water	260.	ug/L
01045	Iron, Total in Water	270.	ug/L
01055	Manganese, Tot in Water	< 5.	ug/L
00927	Magnesium, Tot in Water	8.4	mg/L
00916	Calcium, Total in Water	31.	mg/L
46570	Ca and Mg Hardness Calc.	112.	mg/L CaCO
01042	Copper, Total in Water	30.	ug/L
01105	Aluminum, Total in Water	5400.	ug/L
79729	Mercury, RCRA Extract	< 0.2	ug/L
Field	рН	7.5	pH Units
SPGRRCRA	Specific Gravity, RCRA	1.0	Units
RES'RCRA	Residue, RCRA Waste	<100	mg/L
79741	Arsenic, RCRA Extract	<100.	ug/L
79737	Selenium, RCRA Extract	<100	ug/L
79734	Cadmium, RCRA Extract	74.	ug/L
79736	Lead, RCRA Extract	190.	ug/L
79733	Barium, RCRA Extract	10.	ug/L
79735	Chromium, RCRA Extract	< 50.	ug/L
79738	Silver, RCRA Extract	< 10.	ug/L
00945	Sulfate in Water	400	mg/L

DESCRIPTION OF RAW WATER SYSTEMS

AND

CHLORINE INJECTION AND DISCHARGE POINTS

WATTS BAR NUCLEAR PLANT

Intake Pumping Station (IPS)

The IPS pumps water for the raw cooling water (RCW) system, the essential raw cooling water (ERCW) system, and the high pressure fire protection (HPFP) system. Water enters the IPS into two physically separate sumps, (pits A and B). Intake water flowing into the IPS receives chlorination and passes through four traveling screen, two for each sump.

Water for the RCW system is supplied by seven electric motor driven pumps; four pumps are located in pit A and the remaining three in pit B. Six of the pumps are capable of meeting the maximum normal system flow requirements and the seventh serves as an installed spare.

Four ERCW pumping units, all on the same plant train, take suction from each sump for a total of eight pumps. One set of pumps and associated equipment is designated Train A, and the other Train B. These trains are redundant and are normally maintained separate and independent of each other. Each set of four pumps discharges into a common manifold, from which two separate headers (1A and 2A for Train A, 1B and 2B for Train B), each with its own automatic backwashing strainer, supply water to the various system users.

The HPFP system is supplied by four pumps, with two pumps in each IPS sump. This system is pressurized at all times. System pressure is boosted during emergencies and testing by starting a fire pump in the IPS. This can result in a recirculated flow to a point located approximately 15 feet below the surface of the water, into the intake channel suction to pit B. Presently, if all four HPFP pumps are in operation simultaneously, and relieving through the pressure control valve, the flow into the IPS for suction to the pump is 4.5 times greater than the flow relieving from the HPFP pumps. For one unit operation, the flow into the IPS would be approximately 11.7 times greater than the recirculated flow from the HPFP pumps. The recirculated flow can have a chlorine residual equal to that of the residual in the IPS pit; however this water is recirculated into the IPS by the suction to the ERCW, RCW, and HPFP pumps.

Essential Raw Cooling Water (ERCW) System

The ERCW system provides cooling to various safety-related components and systems required for safe shutdown of the plant in the case of an accident. The ERCW system provides cooling to the Component Cooling Water System, and emergency diesel generator heat exchangers, etc. The ERCW system is a once-through system which discharges to the condenser cooling water system or yard holding pond.

Raw Cooling Water (RCW) System

The RCW system is designed to remove waste heat from the turbogenerator auxiliary equipment and miscellaneous equipment in the turbine building. The RCW does <u>not</u> serve a nuclear safety function. The RCW cools the turbine lube oil coolers, hotwell pump motor bearing oil coolers, and nitrogen compressor coolers, etc. The RCW is a once-through system.

Condenser Circulating Water (CCW) System

The condenser circulating water system is designed to remove heat from the main condensers. The condenser circulating water (CCW) flows from the cooling towers through the CCW pumping station to the main condensers and back through the cooling towers. In this closed mode of operation, water is discharged as cooling tower blowdown through the diffuser. Makeup water is supplied to the CCW system from the ERCW and RCW discharge which compensates for the water losses associated with evaporation, and blowdown from the cooling towers. The CCW is not a safety-related system. The CCW system is not chlorinated.

Raw Service Water (RSW) System

The RSW system provides raw river water for the makeup water treatment plants, and miscellaneous nonpotable uses within the plant, such as hose connections for floor washdown, etc. It is not a safety-related cooling system. RSW is routed through floor drains to building sumps where it is then discharged to either the low volume waste treatment pond or the yard holding pond.

High Pressure Fire Protection (HPFP) System

This system provides fire protection for the site. The system is pressurized at all times. Flow from the HPFP hose station, drains, and hydrants goes to the yard drainage or plant sumps.

0412X

MICROBIOLOGICALLY INDUCED CORROSION

WATTS BAR NUCLEAR PLANT

WATTS BAR NUCLEAR PLANT

MICROBIOLOGICALLY INDUCED CORROSION

Microbiologically Induced Corrosion (MIC) is suspected in the raw water system piping at the Watts Bar Nuclear Plant.

A program is being developed at WBN to control MIC in the ERCW, RCW, HPFP and other cooling water systems; and to further monitor the potential structural degradation of system piping. This program will provide: detection of MIC bacteria, nondestructive examination (NDE), leak detection, repair, and the use of biocide and corrosion inhibitors. At the present time, WBN is utilizing sodium hypochlorite for the control of Asiatic clam or Corbicula. This treatment is not sufficient for growth inhibition of the microbial populations in these systems. TVA is considering as part of its future plans the use of a bromine/chlorine biocide. (See attached letter to Mr. Garland P. Wiggins from M. Paul Schmierbach dated February 10, 1989.)

Organics and pH of the water suppress the effectiveness of sodium hypochlorite alone. Biocide efficacy studies performed on the biologial spectrum in the raw water systems indicate that a biocide, which contains bromine, should have the capacity to prevent growth of the microbial population and prevent the spread of sessile corrosive bacteria to other sensitized areas. The biocide would probably be fed on a continuous basis, year round.

Industry experience has shown that a chlorine/bromine mixture is a more effective biocide than chlorine alone. Like chlorine, the bromine combines with organics to form amines, which are effective biocides and are less persistent than the chlorinated organics (chloramines) in the environment. The addition of bromine also reduces the amount of chlorine that is needed to provide the desired results. Therefore, the use of bromine reduces the total residual chlorine (TRC). A biodispersant will not be added to increase penetration of the biofilm.

As previously stated, corrosion inhibitors and biocides are being considered for future use in MIC affected systems. TVA will keep TDWPC informed on the progress of this effort and will obtain approval from the State prior to instituting the use of any additional biocide.

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ENVIRONMENTAL PROTECTIO: SECTION

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Mr. Garland P. Wiggins, Manager Industrial Facilities Section Division of Water Pollution Control Tennessee Department of Health and Environment Bureau of Environment TERRA Building 150 Ninth Avenue, North Nashville, Tennessee 37219-5404

Dear Mr. Wiggins:

WATTS BAR NUCLEAR PLANT (WBN) - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NUMBER TN0020168 - NOTIFICATION OF USE OF CHLORINE/

In accordance with Part III.D of the NPDES permit, this letter is to notify you that the Tennessee Valley Authority (TVA) proposes to begin adding sodium bromide to the raw water systems at WBN. Sodium hypochlorite is currently added to these systems for clam control at river intake temperatures above 60°F. As discussed in our March 30, 1988 letter for Sequoyah Nuclear Plant (SON), TVA believes it is necessary to also add bromine to raw water systems to control biofouling and mitigate microbiologically induced corrosion.

TVA proposes to use a chlorine-bromine mixture applied continuously at the WBN intake pumping station on a year-round basis. Since WBN is designed to continuously operate in a closed mode as opposed to the open mode at SQN, the cooling towers will receive the treated raw water as makeup water to the cooling system. Some industries which operate their cooling tower in the closed mode, like WBN, have experienced problems with their cooling tower fill when using a biodispersant in their raw water system. Therefore, unlike SQN, WBN does not plan to use a biodispersant at this time. Specific information requested in Part III.D of

Name and general composition--TVA will use a generic form of aqueous CHEMISTRY BRANC. ٦. sodium bromide which will be injected simultaneously with sodium

96-hour medium tolerance limit -- Available literature on bromine toxicity was provided with our March 30, 1988 letter for SQN. Several studies showed toxicity of bromine to be similar to that of chlorine. The use of bromine as a biocide is environmentally desirable due to its short life compared to chlorine compounds, and also since it enhances decomposition of chloramines. researchers have concluded that the environmental consequences of bromine are less than those of chlorine.

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- 3. Quantities to be used—Actual dosage rates of sodium bromide and sodium hypochlorite are not yet known. The specific dosages will chemistry, and the severity of biofouling.
- 4. <u>Frequencies of use</u>——Sodium bromide and sodium hypochlorite would be used continuously on a year—round basis.
- Proposed discharge concentrations—The addition of chlorine and bromine will be controlled such that the sum concentrations of total residual chlorine (TRC) and total residual bromine will not exceed the existing TRC limitations of 0.04 mg/L at the yard holding pond weir and 0.10 mg/L at the diffuser discharge. To help ensure effective treatment is being provided and excess chemicals are not added, the total halogen concentration and microbiological activity will be monitored at various points within the system.
- 6. <u>Environmental Protection Agency (EPA) registration number</u>—-Not applicable for a generic compound.

We request permission to initiate the addition of sodium bromide as early as spring, once the water temperature exceeds the 60° F temperature. We will also request that the NPDES permit, which expires September 30, be modified during reissuance to allow for year-round addition of sodium bromide in combination with sodium hypochlorite.

If your staff needs additional information or has any questions regarding this request, please contact Abraham H. Loudermilk, Jr., at (615)

Sincerely,

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M. Paul Schmierbach, Manager Environmental Quality

RWB:MFB

cc: Mr. Phillip Simmons
Manager, Permits Section
Division of Water Pollution Control
Tennessee Department of Health
and Environment
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150 Ninth Avenue, North
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Files, EQS, SPB 2S 242P-K E. S. Christenbury, ET 11B 33H-K N. C. Kazanas, LP 5S 83E-C

Prepared by Robert W. Bond (NUC PR) with concurrence of Abraham H. Lougermilk, Jr.