



Interoffice Communication

To W. J. Weisenborn, Westlake, Louisiana

From K. L. Kennedy, Ponca City, Oklahoma

Date August 27, 1982

Subject NPDES Consolidated Permit Application

Attached is the NPDES Consolidated Permit Application prepared for the Lake Charles Refinery Sour Crude/Resid Conversion and Premium Coker Phase II expansion projects. Normally, consolidated permit applications are prepared for existing facilities using actual analytical data from effluent samples. Since the expansion is not yet completed, we have calculated effluent values for the operation of the waste water treatment facilities with the pollutant loadings and flow rates predicted for the expansion. Also attached (for your information) are several tables which are described below.

Initially, the effect of dissolved air flotation/induced air flotation pretreatment was not taken into account in the treatment simulation since these units may not be completed prior to the expansion startup. When only the existing treatment facilities were simulated, however, the calculated BOD in the effluent was double the expected permit value. Table I shows the present Best Practicable Technology effluent limitation guidelines for the Lake Charles Refinery after the expansion. Of course, we have no assurance that more stringent BAT (Best Available Technology) effluent guidelines will not be in effect by late 1983. Table II shows the predicted BOD and suspended solids effluent values for the refinery both with and without pretreatment. Even though the permit limitations could be exceeded during a bad month between the startup of the expansion and the DAF/IAF pretreatment units, the effluent data presented in the application are based on flotation pretreatment of the Activated Sludge Unit feed. The amount of time between the expansion startup and startup of the flotation units should be held to the absolute minimum.

The activated sludge unit performance will decline due to the increase in flow rate. Since the unit will have a relatively short residence time after the expansion (approximately 15 hours), it is possible that the effluent BOD levels will be even higher than we have calculated due to hydraulic overloading of the ASU. The expected maximum 30 day permit value for BOD is only 2 percent higher than the predicted maximum 30 day effluent value, even with flotation pretreatment. If the ASU does not perform as well as expected, the permit will be violated.

The total suspended solids (TSS) effluent values were calculated assuming that the final DAF effluent TSS concentration will be as low as it was last year. There is more than 10 percent difference between the expected maximum 30 day permit value for TSS and the predicted effluent value. If the final DAF does not operate better than last year, the permit will be violated.

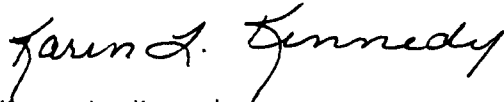
W. J. Weisenborn

Page 2

One method to aid in permit compliance would be to change to non-chromate treatment of the cooling water and discharge the cooling tower blowdown directly. Organic removal over the ASU would increase dramatically due to the lower flow rates. TSS removal over the DAF would also benefit from removal of the cooling water. Table III shows the predicted BOD and TSS effluent values expected if the cooling water bypasses the waste water treatment facilities and pretreatment flotation is installed. Bypassing the cooling tower blowdown around the waste water treatment system would also help keep pollutant levels down for the short period when the expansion may be operating without ASU pretreatment.

A proposed revision to the Consolidated Permit Regulations, now in the comment period, would allow corporate officers of less than vice presidential level to sign the permit application. We will keep you informed of any action on this proposal.

If you have any questions, please call.



Karen L. Kennedy
Process Engineer
Engineering Services Division
Process Engineering Department

ke
Enc

CC:
RGG:JSD:LES
J. W. Leigh - Westlake
I. F. Wagner - Westlake
D. Edwards - Westlake
A. J. Nash - Westlake

Approved



File: EV-1192.16

MCD 000002457

TABLE I

BEST PRACTICABLE TECHNOLOGY

EFFLUENT LIMITATION GUIDELINES

SOUR CRUDE EXPANSION

LAKE CHARLES REFINERY

<u>Parameter</u>	<u>Daily Average, Lb/Day</u>	<u>Daily Maximum, Lb/Day</u>
BOD ₅	1,284	2,311
TSS	1,026	1,611
COD	8,988	17,322
Oil and Grease	374	701
Phenolic Compounds	8.3	17.1
Ammonia (as N)	694	1,526
Sulfide	6.7	15.0
Total Chromium	20	35
Hexavalent Chromium	1.3	2.8

Basis: The following projected production rates:

	<u>BPSD</u>
Atmospheric Distillation	164,000
Vacuum Distillation	49,500
Desalting	164,000
Fluid Catalytic Cracking	30,600
Thermal Cracking	11,800
Delayed Coking	49,900

TABLE II
EFFLUENT BOD AND TSS LEVELS
SOUR CRUDE EXPANSION
LAKE CHARLES REFINERY

	<u>WITHOUT</u> <u>PRETREATMENT</u>		<u>WITH DAF/IAF</u> <u>PRETREATMENT</u>	
	<u>50%(1)</u> <u>Effluent</u> <u>Number</u>	<u>95%(2)</u> <u>Effluent</u> <u>Number</u>	<u>50%</u> <u>Effluent</u> <u>Number</u>	<u>95%</u> <u>Effluent</u> <u>Number</u>
BOD, Lb/Day	774	2,720	626	1,255
TSS, Lb/Day	757	1,150	757	1,150

Notes:

1. The 50 percent effluent number (median value) corresponds to the long term average value on the permit application.
2. The 95 percent effluent number corresponds to the maximum 30 day value on the permit application.

TABLE III
EFFLUENT BOD AND TSS LEVELS(1)

SOUR CRUDE EXPANSION

LAKE CHARLES REFINERY

	<u>50%</u> <u>Effluent</u> <u>Number</u>	<u>95%</u> <u>Effluent</u> <u>Number</u>
BOD, Lb/Day	484	602
TSS, Lb/Day	551	944

MCD 000002460

Notes:

1. With cooling water bypass and flotation pretreatment.

KLK:ke

FORM
26
NPDES



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

I. OUTFALL LOCATION

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

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	30	14	18	93	16	40	Bayou Verdine
002	30	14	25	93	16	40	Bayou Verdine
003	30	14	23	93	15	26	Unnamed ditch to Calcasieu River

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. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
	A. OPERATION (list)	B. AVERAGE FLOW (include units)	C. DESCRIPTION	D. LIST CODES FROM TABLE 2C-1
001	Desalters	138,000 lbs/hr		
	Closed Coker Blowdown	22,500 lbs/hr	See Attachment C	
	Ballast and Crude Tank Draws	15,000 lbs/hr		
	Miscellaneous Users	63,000 lbs/hr	See Attachment B	
001	Cooling Tower Filter Backwash	18,500 lbs/hr		
	Boiler Blowdown	102,100 lbs/hr	See Attachment C	
	125°F Pit Overflow	169,800 lbs/hr		
	Cooling Tower Blowdown	296,600 lbs/hr		
	Sanitary			
002	Storm Water Runoff from Process Area	58,400 lbs/hr	Sedimentation	I-V
003	Storm Water Runoff from Tank Farm Area	58,000 lbs/hr	None	

MCD 000002461

OFFICIAL USE ONLY (effluent guidelines sub-categories)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES (complete the following table) ☒ NO (go to Section III)

1. OUTFALL NUMBER (list)	2. OPERATION(s) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW						C. DUR- ATION (in days)
		A. DAYS PER WEEK (specify average)	D. MONTHS PER YEAR (specify average)	B. FLOW RATE (in mgd)		E. TOTAL VOLUME (specify with units)				
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY			

III. MAXIMUM PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ YES (complete Item III-B)

☐ NO (go to Section IV)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

☒ YES (complete Item III-C)

☐ NO (go to Section IV)

C. If you answered "Yes" to Item III-B, list the quantity which represents an actual measurement of your maximum level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS (list outfall numbers)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (specify)	
164.0	1,000 bbl	Atmospheric Distillation	001, 002
164.0	1,000 bbl	Crude Oil Desalting	001, 002
49.5	1,000 bbl	Vacuum Distillation	001, 002
30.6	1,000 bbl	Fluid Catalytic Cracker	001, 002
11.8	1,000 bbl	Thermal Cracking	001, 002
49.9	1,000 bbl	Delayed Coking	001, 002

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of waste-water treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (complete the following table)

☒ NO (go to Item IV-B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COM- PLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		5. RE- QUIRED	6. PRO- JECTED

MCD 000002462

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

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

CONTINUED FROM PAGE 2

LAD990683716

Form Approved OMB No. 158-R0173

V. INTAKE AND EFFLUENT CHARACTERISTICS

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.

D. Use the space below to list any of the pollutants listed in Table 20-3 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	3. POLLUTANT	4. SOURCE
Cyclohexane Xylene Naphenic Acid	All three of these substances are present in the products from the reformer unit. It is, therefore, possible that at times these may be found in the process waste waters as a result of upsets.		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. Is any pollutant listed in Item V-C a substance or a component of a substance which you do or expect that you will over the next 5 years use or manufacture as an intermediate or final product or byproduct?

☐ YES (list all such pollutants below)

☒ NO (go to Item VI-B)

B. Are your operations such that your raw materials, processes, or products can reasonably be expected to vary so that your discharges of pollutants may during the next 5 years exceed two times the maximum values reported in Item V?

☐ YES (complete Item VI-C below)

☒ NO (go to Section VII)

C. If you answered "Yes" to Item VI-B, explain below and describe in detail the sources and expected levels of such pollutants which you anticipate will be discharged from each outfall over the next 5 years, to the best of your ability at this time. Continue on additional sheets if you need more space.

MCD 000002463

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on receiving water in relation to your discharge within the last 3 years?

☒ YES (Identify the test(s) and describe their purposes below.)

☐ NO (Go to Section VIII)

Prepared by: Environmental Science and Engineering, Inc.
Aquatic Bioassay Services
Gainesville, Florida
ESE No. 79-311-021
June 30, 1980

Flow through and static bioassays were conducted at the Continental Oil Company Refinery (Conoco), Lake Charles, Louisiana. The bioassays were conducted from January 11 through January 18, 1980, to determine the lethality to sheepshead minnows (Cyprinodon variegatus) and mysid shrimp (Mysidopsis bahia) of the waste water from the plant's No. 001 outfall.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☐ YES (List the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below.)

☒ NO (Go to Section IX)

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
			MCD 000002464

IX. CERTIFICATION

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

A. NAME & OFFICIAL TITLE (type or print)	B. PHONE NO. (area code & no.)
C. SIGNATURE	D. DATE SIGNED

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

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

LAD990683716

Form Approved OMB No. 158-R0173

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

OUTFALL NO.

001

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.

POLLUTANT	2. EFFLUENT						3. UNITS (specify if blank)	4. INTAKE (optional)				
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVERAGE VALUE (if available)			5. LONG TERM AVERAGE VALUE		6. NO. OF ANALYSES		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		(1) CONCENTRATION	(2) MASS			
Biochemical Oxygen Demand (BOD)	126	2308	68	1248	38	599	167(1)	mg/l	lbs/d			
Chemical Oxygen Demand (COD)	428	7847	231	4243	129	2037	172(1)	mg/l	lbs/d			
Total Organic Carbon (TOC)	107	1962	58	1061	32	509	167(1)	mg/l	lbs/d			
Total Suspended Solids (TSS)	79	1720	56	1021	40	628	172(1)	mg/l	lbs/d			
Ammonia (as N)	32.7	640	15	274	9.6	153	172(1)	mg/l	lbs/d			
Flow	VALUE 23,843,000		VALUE 18,239,000		VALUE 15,887,000		NA(1)(2)	-	lbs/d	VALUE		
Temperature (air)	VALUE 29 (85)		VALUE 26 (79)		VALUE 22 (72)		NA(2)	°C (°F)		VALUE		
Temperature (water)	VALUE 34 (93)		VALUE 32 (89)		VALUE 29 (85)		NA(2)	°C (°F)		VALUE		
pH	MINIMUM 6.0	MAXIMUM 9.0	MINIMUM 6.7	MAXIMUM 7.6	VALUE 22 (72)		NA(2)	STANDARD UNITS		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.

POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. RECEIVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	e. CONCENTRATION	f. MASS	5. LONG TERM AVERAGE VALUE		6. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
Bromide 4959-67-9)	X		8						1	ppm				
Chlorine, total Residual		X												
Color	X		40						1	color units				
Fecal coliform	X													
Fluoride 4984-48-8)	X		6						1	ppm				
Nitrate- Nitrite (as N)	X		ND(4)						1	ppm				

[illegible]

MCD 000002466

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
LAD990683716	001

INTENDED FROM PAGE 3 OF FORM 2-C

Form Approved OMB No. 158-R0173

ART 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.

POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT								4. UNITS		5. INTAKE (optional)		
	A. TEST RE-REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	e. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES	
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS		
ETALS, CYANIDE, AND TOTAL PHENOLS																
W. Antimony, total (7440-36-0)	X			ND(4)						1						
M. Arsenic, Total (7440-38-2)	X			.004						1						
M. Beryllium, total, (7440-41-7)	X			ND(4)						1						
M. Cadmium, total (7440-43-9)	X			ND(4)						1						
M. Chromium, total (7440-47-3)	X			.61	10.84	.21	3.31	.14	2.22	172(1)	mg/l	lbs/d				
M. Copper, Total (7550-50-8)	X			.061						1	ppm					
M. Lead, Total (7439-97-6)	X			ND(4)						1						
M. Mercury, Total (7439-97-6)	X			ND(4)						1						
M. Nickel, Total (7440-02-0)	X			.1						1	ppm					
OM. Selenium, total (7782-49-2)	X			.003						1	ppm					
1M. Silver, Total (7440-22-4)	X			ND(4)						1						
2M. Thallium, total (7440-28-0)	X			ND(4)						1						
3M. Zinc, Total (7440-66-6)	X			.36						1	ppm					
4M. Cyanide, total (57-12-5)	X			.06		.025		.023		5	ppm					
6M. Phenols, total	X			.14	2.06	.036	.66	.022	.34	172(1)	mg/l	lbs/d				

DIOXIN

2,3,7,8-Tetrachlorodibenzo-P-dioxin (1764-01-6)		X	DESCRIBE RESULTS
---	--	---	------------------

FROM THE FRONT

POLLUTANT	2. MARK 'X'		3. EFFLUENT			4. UNITS			5. INTAKE (optional)	
	1. A. NO. OF ANALYSES	1. B. NO. OF ANALYSES	2. MAXIMUM DAILY VALUE (1) CONC. (2) MASS	3. MAXIMUM 30 DAY VALUE (1) CONC. (2) MASS	4. LONG TERM AVEG. VALUE (1) CONC. (2) MASS	5. CONCENTRATION	6. MASS	7. LONG TERM AVERAGE VALUE (1) CONC. (2) MASS	8. NO. OF ANALYSES	
VOLATILE COMPOUNDS - VOLATILE COMPOUNDS										
1. Acetone (27-02-3)	X		ND (4)						1	
2. Acrylonitrile (07-13-1)	X		ND (4)						1	
3. Benzene (1-43-2)	X		ND (4)						1	
4. Bis (Chloroethyl) Ether (42-88-1)	X		ND (4)						1	
5. Bromoform (5-25-2)	X		ND (4)						1	
6. Carbon tetrachloride (56-23-5)	X		ND (4)						1	
7. Chlorobenzene (108-90-7)	X		ND (4)						1	
8. Chlorodinitromethane (124-48-1)	X		ND (4)						1	
9. Chloroethane (75-00-3)	X		ND (4)						1	
10. 2-Chloroethylvinyl Ether (110-75-8)	X		ND (4)						1	
11. Chloroform (37-66-3)	X		ND (4)						1	
12. Dichloromonomethane (75-27-4)	X		ND (4)						1	
13. Dichlorodifluoromethane (75-71-8)	X		ND (4)						1	
14. 1,1-Dichloroethane (75-34-3)	X		ND (4)						1	
15. 1,2-Dichloroethane (107-06-2)	X		ND (4)						1	
16. 1,1-Dichloroethylene (75-35-4)	X		ND (4)						1	
17. 1,2-Dichloropropane (78-87-5)	X		ND (4)						1	
18. 1,2-Dichloropropylene (542-75-6)	X		ND (4)						1	
19. Ethylbenzene (100-41-4)	X		ND (4)						1	
20. Methyl Bromide (74-83-9)	X		ND (4)						1	
21. Methyl Chloride (74-87-3)	X		ND (4)						1	

FROM PAGE V-4

1. ANALYST AND DATE NO. OF ANALYSES (If more than 1)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. PRESENT IN QUANT- ITY	B. AS- TREATED SENT	C. RE- TREATED SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANAL- YSES	e. CONCENTRATION	f. MASS	g. LONG TERM AVERAGE VALUE		h. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
MS FRACTION - VOLATILE COMPOUNDS (continued)															
V. Methylene chloride (75-14-2)	X			ND (4)						1					
V. 1,1,2,2-Tetrachloroethane (134-6)	X			ND (4)						1					
V. Tetrachloroethylene (127-18-4)	X			ND (4)						1					
V. Toluene (98-88-3)	X			ND (4)						1					
V. 1,2-Dichloroethylene (58-60-5)	X			ND (4)						1					
V. 1,1,1-Trichloroethane (1-55-6)	X			ND (4)						1					
IV. 1,1,2-Trichloroethane (9-00-5)	X			ND (4)						1					
IV. Trichloroethylene (79-01-6)	X			ND (4)						1					
IV. Trichloromethane (5-69-4)	X			ND (4)						1					
IV. Vinyl chloride (75-01-4)	X			ND (4)						1					
MS FRACTION - ACID COMPOUNDS															
A. 2-Chlorophenol (5-57-8)	X			ND (4)						1					
A. 2,4-Dichlorophenol (120-83-2)	X			ND (4)						1					
A. 2,4-Dimethylphenol (105-67-9)	X			ND (4)						1					
A. 4,6-Dinitro-O-resol (534-52-1)	X			ND (4)						1					
A. 2,4-Dinitrophenol (51-28-5)	X			ND (4)						1					
A. 2-Nitrophenol (38-75-5)	X			ND (4)						1					
A. 4-Nitrophenol (100-02-7)	X			ND (4)						1					
A. P-Chloro M-resol (59-50-7)	X			ND (4)						1					
A. Pentachlorophenol (87-86-5)	X			ND (4)						1					
0A. Phenol (108-95-2)	X			ND (4)						1					
1A. 2,4,6-Trichlorophenol (88-06-2)	X			ND (4)						1					

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED (if available)	B. SE- LAVED PRE- SENT	C. SE- LAVED AB- SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVG. VALUE (if available)		D. NO. OF ANAL- YSES	a. CONCENTRATION	b. MASS	E. LONG TERM AVERAGE VALUE		D. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X			ND (4)						1					
2B. Acenaphthylene (208-96-8)	X			ND (4)						1					
3B. Anthracene (120-12-7)	X			ND (4)						1					
4B. Benzidine (92-87-5)	X			ND (4)						1					
5B. Benzo (a) Anthracene (56-55-3)	X			ND (4)						1					
6B. Benzo (a) Pyrene (50-32-8)	X			ND (4)						1					
7B. 3,4-Benzo-Fluoranthene (205-99-2)	X	X		ND (4)						1					
8B. Benzo (ghi) Perylene (191-24-2)	X			ND (4)						1					
9B. Benzo (k) Fluoranthene (207-08-9)	X			ND (4)						1					
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	X			ND (4)						1					
11B. Bis (2-Chloroethyl) Ether (111-44-4)	X			ND (4)						1					
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	X			ND (4)						1					
13B. Bis (3-Ethylhexyl) Phthalate (117-81-7)	X			ND (4)						1					
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	X			ND (4)						1					
15B. Butyl Benzyl Phthalate (85-68-7)	X			ND (4)						1					
16B. 2-Chloronaphthalene (91-58-7)	X			ND (4)						1					
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	X	X		ND (4)						1					
18B. Chrysene (218-01-9)	X			ND (4)						1					
19B. Dibenzo (a,h) Anthracene (53-70-3)	X			ND (4)						1					
20B. 1,2-Dichlorobenzene (95-50-1)	X			ND (4)						1					
21B. 1,3-Dichlorobenzene (541-73-1)	X			ND (4)						1					

EPA ID NUMBER (copy from Item 1 of Form J) OUTFALL NUMBER
LAD990683716 001

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'	3. EFFLUENT		4. UNITS	5. INTAKE (optional)		6. NO. OF ANAL. VSES
		7. MAXIMUM DAILY VALUE (1) CONCENTRATION (2) MASS	8. MAXIMUM 30 DAY VALUE (1) CONCENTRATION (2) MASS		9. LONG TERM AVERAGE VALUE (1) CONCENTRATION (2) MASS		
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)							
228. 1,4-Dichlorobenzene (106-46-7)	X		ND (4)				1
238. 3,3'-Dichlorobenzidine (91-94-1)	X		ND (4)				1
248. Diethyl phthalate (84-66-2)	X		ND (4)				1
258. Dimethyl phthalate (131-11-3)	X		ND (4)				1
268. Di-N-Butyl phthalate (84-74-2)	X		ND (4)				1
278. 2,4-Dinitrotoluene (121-14-2)	X		ND (4)				1
288. 2,6-Dinitrotoluene (508-20-2)	X		ND (4)				1
298. Di-N-Octyl phthalate (117-84-0)	X		ND (4)				1
308. 1,2-Diphenylhydrazine (as Azobenzene) (122-68-7)	X		ND (4)				1
318. Fluoranthene (206-44-0)	X		ND (4)				1
328. Fluorene (86-73-7)	X		ND (4)				1
338. Hexachlorobenzene (118-71-1)	X		ND (4)				1
348. Hexachlorobutadiene (87-68-3)	X		ND (4)				1
358. Hexachlorocyclopentadiene (177-47-4)	X		ND (4)				1
368. Hexachloroethane (67-72-1)	X		ND (4)				1
378. Indeno (1,2,3-cd) Pyrene (193-39-5)	X		ND (4)				1
388. Isophorone (78-59-1)	X		ND (4)				1
398. Naphthalene (91-20-3)	X		ND (4)				1
408. Nitrobenzene (98-95-3)	X		ND (4)				1
418. N-Nitrosodimethylaniline (62-75-9)	X		ND (4)				1
428. N-Nitrosodi-N-Propylamine (621-64-7)	X		ND (4)				1

CONTINUED FROM THE FRONT

CONTINUED FROM THE FRONT															
1. POLLUTANT AND CAS NUMBER (if applicable)		2. MARK 'X'		3. EFFLUENT				4. UNITS		5. INTAKE (optional)		6. NO OF ANAL YSES			
		TEST CODE	RE-TEST	8. MAXIMUM DAILY VALUE (continued)		9. MAXIMUM 30 DAY VALUE (if available)		10. LONG TERM AVERAGE VALUE (if available)		CONCENTRATION	MASS		CONCENTRATION	MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
438. N,N-Dimethyl-2-phenethylamine (86-30-6)		X												1	
448. Phenanthrene (85-01-8)		X												1	
468. Pyrene (129-00-0)		X												1	
488. 1,2,4-Trichlorobenzene (120-82-1)		X												1	
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)		X												1	
2P. α -BHC (319-84-6)		X												1	
3P. β -BHC (319-85-7)		X												1	
4P. γ -BHC (58-89-9)		X												1	
5P. δ -BHC (319-86-8)		X												1	
6P. Chlordane (57-74-9)		X												1	
7P. 4,4'-DDT (50-29-3)		X												1	
8P. 4,4'-DDE (72-55-9)		X												1	
9P. 4,4'-DDD (72-54-8)		X												1	
10P. Dieldrin (60-57-1)		X												1	
11P. α -Endosulfan (115-29-7)		X												1	
12P. β -Endosulfan (115-29-7)		X												1	
13P. Endosulfan Sulfate (1031-07-8)		X												1	
14P. Endrin (72-20-8)		X												1	
15P. Endrin Aldehyde (7421-93-4)		X												1	
16P. Heptachlor (76-44-8)		X												1	

EPA Form 3510-2C (6-80)

PAGE V-8

CONTINUE ON PAGE V-9

MCD 000002472

- NOTES:

PAGE V-9

Form Approved OMB No. 158-R0173

EPA I.D. NUMBER (copy from Item 1 of Form I)	LAD990683716
OUTFALL NUMBER	001

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)

LAD990683716

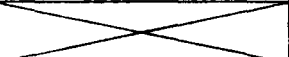
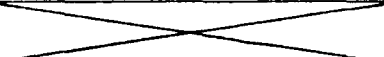
Form Approved OMB No. 158-R0173

OUTFALL NO.

002

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

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.

1. POLLUTANT	2. EFFLUENT						d. NO. OF ANALYSES	3. UNITS (specify if blank)		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)			a. CONCENTRATION	b. MASS	b. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	72	264	57	89	36	51	43	mg/l (4)	lbs/d			
b. Chemical Oxygen Demand (COD)	96	921	230	361	154	202	45	mg/l (4)	lbs/d			
c. Total Organic Carbon (TOC)	47	217	46	86	32	42	43	mg/l (4)	lbs/d			
d. Total Suspended Solids (TSS)	272	935	292	458	93	129	45	mg/l (4)	lbs/d			
e. Ammonia (as N)	18.9	87	12.1	24	4.3	6.4	45	mg/l (4)	lbs/d			
f. Flow	VALUE 9,591,000		VALUE 2,015,000		VALUE 1,402,000		NA(1)	-	lbs/d	VALUE		
g. Temperature (winter)	VALUE 30 (87)		VALUE 24 (76)		VALUE 19 (67)		NA(1)	°C (°F)		VALUE		
h. Temperature (summer)	VALUE 46 (115)		VALUE 38 (100)		VALUE 30 (87)		NA(1)	°C (°F)		VALUE		
i. pH	MINIMUM 5.2	MAXIMUM 9.0	MINIMUM 6.1	MAXIMUM 7.6			NA(1)	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 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. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	e. LONG TERM AVERAGE VALUE		f. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X													
d. Fecal Coliform	X													
e. Fluoride (14698-4-8)		X												
f. Nitrate- Nitrite (as N)	X													

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
LAD990683716	002

CONTINUED FROM PAGE 3 OF FORM 2-C

Form Approved OMB No. 158-R0173

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 AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)		X		.003(3)						8	ppm				
3M. Beryllium, Total, (7440-41-7)			X												
4M. Cadmium, Total (7440-43-9)	X			ND(2,3)						8	ppm				
5M. Chromium, Total (7440-47-3)	X			.44	.588	.36	.54	.22	.29	45	mg/l (4)	lbs/d			
6M. Copper, Total (7550-50-8)	X			.024(3)						8	ppm				
7M. Lead, Total (7439-97-6)	X			.095(3)						8	ppm				
8M. Mercury, Total (7439-97-6)		X													
9M. Nickel, Total (7440-02-0)	X			.05(3)						8	ppm				
10M. Selenium, Total (7782-49-2)		X													
11M. Silver, Total (7440-22-4)		X													
12M. Thallium, Total (7440-28-0)		X													
13M. Zinc, Total (7440-66-6)	X			.24(3)						8	ppm				
14M. Cyanide, Total (57-12-5)	X			.03(3)						8	ppm				
15M. Phenols, Total	X			2.821	10.353	1.275	1.426	.24	.27	45	mg/l (4)	lbs/d			
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

MCD 000002476

1. POLLUTANT	2. MARK 'X'	3. EFFLUENT				4. GCM/STATION - VOLATILE COMPOUNDS			
		IN	OUT	CONCENTRATION	CONCENTRATION	IN	OUT	CONCENTRATION	CONCENTRATION
NUMBER		CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION
1. POLLUTANT	2. MARK 'X'	3. EFFLUENT	4. GCM/STATION - VOLATILE COMPOUNDS	5. IN	6. OUT	7. IN	8. OUT	9. IN	10. OUT

19. Acetone (107.02-3)	X								
20. Acrylonitrile (107.13-1)	X								
30. Benzene (71.43-2)	X								
40. Bis (Chloro- methyl) Ether (542-88-1)	X								
50. Bromoform (15-25-2)	X								
60. Carbon Tetrachloride (185-23-5)	X								
70. Chlorobenzene (108-90-7)	X								
80. Chloroform (124-48-1)	X								
90. Chloroethane (124-48-1)	X								
100. 2-Chloro- ethyl Ethyl Ether (110-75-8)	X								
110. Chloroform (67-66-3)	X								
120. Dichloro- dimethylmethane (75-27-4)	X								
130. Dichloro- difluoromethane (75-71-8)	X								
140. 1,1-Dichloro- ethane (75-34-3)	X								
150. 1,2-Dichloro- ethane (107-06-2)	X								
160. 1,1-Dichloro- ethylene (75-35-4)	X								
170. 1,2-Dichloro- propane (78-87-5)	X								
180. 1,2-Dichloro- propylene (542-75-6)	X								
190. Ethylbenzene (100-41-4)	X								
200. Methyl Bromide (74-83-9)	X								
210. Methyl Chloride (74-87-3)	X								

MCD 000002477

CONTINUED FROM PAGE V-4

LAD990683716

002

Form Approved OMB No. 158-R0173

1. POLLUTANT AND CAS NUMBER	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTED	B. RECEIVED	C. RECEIVED	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVG. VALUE		d. NO. OF ANALYSES	e. CONCENTRATION	f. MASS	g. LONG TERM AVERAGE VALUE		h. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-Cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (120-73-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. 2,6-Dinitrophenol (89-00-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10. 2,4,6-Trinitrophenol (X)															
11. 2,4,6-Trinitrophenol (X)															

MCD 000002478

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
LAD990683716	002

Form Approved OMB No. 158-R0173

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TESTING RE-QUIR-ED	b. BE-LIEVED PRE-SENT	c. BE-LIEVED AD-SENT	b. MAXIMUM DAILY VALUE		d. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCENTRATION	b. MASS	3. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichloro-benzene (106-46-7)			X												
23B. 3,3'-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine (as Azo-benzene) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexa-chlorobenzene (118-71-1)			X												
34B. Hexa-chlorobutadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B. Hexachloro-ethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitro-sodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-n-Propylamine (621-64-7)			X												

MCD 000002480

CONTINUED FROM PAGE V-8

Form Approved OMB No. 158-R0173

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST REQ. RE-QUIR-ED	b. SE-RI-AL NO. PRE-SENT	c. SE-RI-AL NO. AS-SENT	b. MAXIMUM DAILY VALUE		d. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANAL-YSES	a. CON-CEN-TRATION	b. MASS	e. LONG TERM AVERAGE VALUE		b. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CON-CEN-TRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-8)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

EPA Form 3510-2C (6-80)

PAGE V-9

Notes:

1. This parameter is measured continuously when there is flow.
2. None detected in concentration greater than the minimum detectable limit of the method.
3. Data for parameter was taken prior to 1977.
4. Values of this pollutant were based on effluent data from the period May, 1981, through April, 1982.

MCD 000002482

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)

LAD990683716

Form Approved OMB No. 158-R0173

OUTFALL NO.
003

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

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.

1. POLLUTANT	2. EFFLUENT						d. NO. OF ANALYSES	3. UNITS (specify if blank)		4. INTAKE (optional)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	(1)											
b. Chemical Oxygen Demand (COD)	(1)											
c. Total Organic Carbon (TOC)	60	380	30	70	24	28	55	ppm	lbs/d			
d. Total Suspended Solids (TSS)	(1)											
e. Ammonia (as N)	(1)											
f. Flow	VALUE 13,594,000		VALUE 2,342,000		VALUE 1,393,000		NA(2)	-	lbs/d	VALUE		
g. Temperature (winter)	VALUE (1)		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE (1)		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM 7.3	MAXIMUM 7.8	MINIMUM 7.3	MAXIMUM 7.8			3	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 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. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT						d. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	a. RECEIVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)	X		1.5						1	ppm				
b. Chlorine, Total Residual		X												
c. Color	X		40						1	color units				
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)	X		.2						1	ppm				
f. Nitrate-Nitrite (as N)	X		ND(3)						1					

MCD 000002483

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

LAD990683716

003

CONTINUED FROM PAGE 3 OF FORM 2-C

Form Approved OMB No. 158-R0173

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 AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVG. VALUE (If available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	e. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X	ND(3)						1					
2M. Arsenic, Total (7440-38-2)			X	ND(3)						1					
3M. Barium, Total (7440-41-7)			X	ND(3)						1					
4M. Cadmium, Total (7440-43-9)			X	ND(3)						1					
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7550-50-8)			X	ND(3)						1					
7M. Lead, Total (7439-97-6)			X	ND(3)						1					
8M. Mercury, Total (7439-97-6)			X	ND(3)						1					
9M. Nickel, Total (7440-02-0)			X	ND(3)						1					
10M. Selenium, Total (7782-49-2)			X	ND(3)						1					
11M. Silver, Total (7440-22-4)			X	ND(3)						1					
12M. Thallium, Total (7440-28-0)			X	ND(3)						1					
13M. Zinc, Total (7440-66-9)		X		.032						1	ppm				
14M. Cyanide, Total (57-12-6)			X												
15M. Phenol, Total (108-95-2)		X													
DIOXINS															
2,3,7,8-Tetra-chlorodibenzo-p-dioxin (1784-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM PAGE V-4

EPA I.D. NUMBER (copy from Item 1 of Form 1) **LAD990683716**

OUTFALL NUMBER

003

Form Approved OMB No. 158-R0173

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TEST ING RE- QUIR- ED	B. RE- LIEVED PRE- SENT	C. RE- LIEVED AB- SENT	6. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (if available)		E. LONG TERM AVG. VALUE (if available)		F. NO. OF ANAL- YSES	G. CONCENTRATION	H. MASS	I. LONG TERM AVERAGE VALUE		J. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X	ND(3)						1					
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X	ND(3)						1					
24V. Tetrachloroethylene (127-18-4)			X	ND(3)						1					
25V. Toluene (108-88-3)			X	ND(3)						1					
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X	ND(3)						1					
27V. 1,1,1-Trichloroethane (71-55-6)			X	ND(3)						1					
28V. 1,1,2-Trichloroethane (79-00-5)			X	ND(3)						1					
29V. Trichloroethylene (79-01-8)			X	ND(3)						1					
30V. Trichlorofluoromethane (75-89-4)			X	ND(3)						1					
31V. Vinyl Chloride (75-01-4)			X	ND(3)						1					
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X	ND(3)						1					
2A. 2,4-Dichlorophenol (120-83-2)			X	ND(3)						1					
3A. 2,4-Dimethylphenol (105-67-9)			X	ND(3)						1					
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X	ND(3)						1					
5A. 2,4-Dinitrophenol (51-28-5)			X	ND(3)						1					
6A. 2-Nitrophenol (88-75-5)			X	ND(3)						1					
7A. 4-Nitrophenol (100-02-7)			X	ND(3)						1					
8A. P-Chloro-M-Cresol (59-50-7)			X	ND(3)						1					
9A. Pentachlorophenol (87-86-5)			X	ND(3)						1					
10A. Phenol (70-05-2)			X	ND(3)						1					
11A. 2,4,6-Trichlorophenol (88-06-2)			X	ND(3)						1					

CONTINUE FROM THE FRONT

CONTINUE FROM THE FRONT															
1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. RECEIVED PRESENT	C. RECEIVED ASSENT	A. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (if available)		E. LONG TERM AVG. VALUE (if available)		F. NO. OF ANALYSES	G. CONCENTRATION	H. MASS	I. LONG TERM AVERAGE VALUE		J. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
18. Acenaphthene (83-32-9)			X	ND(3)						1					
28. Acenaphthylene (208-96-8)			X	ND(3)						1					
38. Anthracene (120-12-7)			X	ND(3)						1					
48. Benzidine (92-87-5)			X	ND(3)						1					
58. Benzo (a) Anthracene (56-55-3)			X	ND(3)						1					
68. Benzo (a) Pyrene (50-32-8)			X	ND(3)						1					
78. 3,4-Benzofluoranthene (205-99-2)			X	ND(3)						1					
88. Benzo (ghi) Perylene (191-24-2)			X	ND(3)						1					
98. Benzo (k) Fluoranthene (207-08-9)			X	ND(3)						1					
108. Bis (2-Chloroethoxy) Methane (111-91-1)			X	ND(3)						1					
118. Bis (2-Chloroethyl) Ether (111-44-4)			X	ND(3)						1					
128. Bis (2-Chloroisopropyl) Ether (39638-32-9)			X	ND(3)						1					
138. Bis (2-Ethylhexyl) Phthalate (117-81-7)			X	ND(3)						1					
148. 4-Bromophenyl Phenyl Ether (101-55-3)			X	ND(3)						1					
158. Butyl Benzyl Phthalate (85-68-7)			X	ND(3)						1					
168. 2-Chloronaphthalene (91-58-7)			X	ND(3)						1					
178. 4-Chlorophenyl Phenyl Ether (7005-72-3)			X	ND(3)						1					
188. Chrysene (218-01-9)			X	ND(3)						1					
198. Dibenzo (a,h) Anthracene (53-70-3)			X	ND(3)						1					
208. 1,2-Dichlorobenzene (95-50-1)			X	ND(3)						1					
218. 1,3-Dichlorobenzene (541-73-1)			X	ND(3)						1					

MCD 000002488

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT				4. UNITS		5. INTAKE (optional)					
	DATE TESTED	D. BY ANALYST	C. BY LABORATORY	B. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVG. VALUE (if available)		U. NO. OF ANALYSES	A. CONCENTRATION	U. MASS	E. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X	ND (3)						1					
23B. 3,3'-Dichlorobenzidine (91-94-1)			X	ND (3)						1					
24B. Diethyl Phthalate (84-66-2)			X	ND (3)						1					
25B. Dimethyl Phthalate (131-11-3)			X	ND (3)						1					
26B. Di-N-Butyl Phthalate (84-74-2)			X	ND (3)						1					
27B. 2,4-Dinitrotoluene (121-14-2)			X	ND (3)						1					
28B. 2,6-Dinitrotoluene (606-20-2)			X	ND (3)						1					
29B. Di-N-Octyl Phthalate (117-84-0)			X	ND (3)						1					
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)			X	ND (3)						1					
31B. Fluoranthene (206-44-0)			X	ND (3)						1					
32B. Fluorene (86-73-7)			X	ND (3)						1					
33B. Hexachlorobenzene (118-71-1)			X	ND (3)						1					
34B. Hexachlorobutadiene (87-68-3)			X	ND (3)						1					
35B. Hexachlorocyclopentadiene (77-47-4)			X	ND (3)						1					
36B. Hexachloroethane (67-72-1)			X	ND (3)						1					
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X	ND (3)						1					
38B. Isophorone (78-59-1)			X	ND (3)						1					
39B. Naphthalene (91-20-3)			X	ND (3)						1					
40B. Nitrobenzene (98-95-3)			X	ND (3)						1					
41B. N-Nitrosodimethylamine (62-75-9)			X	ND (3)						1					
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X	ND (3)						1					

MCD 000002489

CONTINUE FROM THE FRONT

CONTINUED FROM THE FRONT															
1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	A. TESTING REQUIRED	B. RECEIVED FROM	C. RECEIVED AS	B. MAXIMUM DAILY VALUE		D. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	D. LONG TERM AVERAGE VALUE		D. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X	ND(3)						1					
44B. Phenanthrene (85-01-8)			X	ND(3)						1					
45B. Pyrene (129-00-0)			X	ND(3)						1					
46B. 1,2,4- Trichlorobenzene (120-82-1)			X	ND(3)						1					
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X	ND(3)						1					
2P. α -BHC (319-84-6)			X	ND(3)						1					
3P. β -BHC (319-85-7)			X	ND(3)						1					
4P. γ -BHC (66-89-9)			X	ND(3)						1					
5P. δ -BHC (319-86-8)			X	ND(3)						1					
6P. Chlordane (57-74-9)			X	ND(3)						1					
7P. 4,4'-DDT (50-29-3)			X	ND(3)						1					
8P. 4,4'-DDE (72-65-9)			X	ND(3)						1					
9P. 4,4'-DDD (72-64-8)			X	ND(3)						1					
10P. Dieldrin (60-57-1)			X	ND(3)						1					
11P. α -Endosulfan (115-29-7)			X	ND(3)						1					
12P. β -Endosulfan (115-29-7)			X	ND(3)						1					
13P. Endosulfan Sulfate (1031-07-8)			X	ND(3)						1					
14P. Endrin (72-20-8)			X	ND(3)						1					
15P. Endrin Aldehyde (7421-93-4)			X	ND(3)						1					
16P. Heptachlor (76-44-8)			X	ND(3)						1					

MCD 000002490

EPA I.D. NUMBER (copy from Item 1 of Form 1) **LAD990683716** **OUTFALL NUMBER**
003

Form Approved OMB No. 158-R0173

CONTINUED FROM PAGE V-8

CONTINUED FROM PAGE 55															
1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST-ING RE-QUIR-ED	b. DE-LIEVED PRE-SENT	c. DE-LIEVED AD-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL-YSES	a. CON-CENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CON-CENTRATION	(2) MASS	
GC/MS FRACTION — PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-67-3)			X	ND(3)						1					
18P. PCB-1242 (53469-21-9)			X	ND(3)						1					
19P. PCB-1254 (11097-69-1)			X	ND(3)						1					
20P. PCB-1221 (11104-28-2)			X	ND(3)						1					
21P. PCB-1232 (11141-16-5)			X	ND(3)						1					
22P. PCB-1248 (12672-29-6)			X	ND(3)						1					
23P. PCB-1260 (11096-82-5)			X	ND(3)						1					
24P. PCB-1016 (12674-11-2)			X	ND(3)						1					
25P. Toxaphene (8001-35-2)			X	ND(3)						1					

EPA Form 3510-2C (6-80)

PAGE V-9

Notes:

1. This parameter is not monitored on the stormwater discharge.
2. This value is measured continuously when there is flow.
3. None detected in concentration greater than the minimum detectable limit of the method.
4. Values of this pollutant were based on effluent data from the period May, 1981, through April, 1982.

MCD 000002491

ATTACHMENT B

CONOCO INC.

EPA ID LAD990683716

LAKE CHARLES REFINERY

Miscellaneous uses are:

Various water washes.
Caustic System.
Storm water runoff that goes into the oily-water process sewer.

Miscellaneous units contributing process waste water are:

Alkylation Unit
P-P Reformer Unit
P-F Debutanizer Unit
No. 2 Crude Tower
No. 3 Crude Tower
FCC Unit
Thermal Cracker Unit
PBC Fractionation Unit
Normal Paraffin Unit
HDS Units
Gas Plant
H₂ Purification Distribution System
Cokers

MCD 000002492

ATTACHMENT C

CONOCO INC.EPA ID LAD990683716LAKE CHARLES REFINERY

The waste water streams from the desalters, ballast, crude tank draws, and the miscellaneous users are all receiving the following treatment steps:

<u>Treatment Step</u>	<u>Code</u>
1. API Separator	XX
2. CPI Separator	XX
3. Dissolved Air Flotation(1)	1-H
4. Equalization Basin	3-B
5. Activated Sludge Unit	3-A
6. Process Lagoon	3-B
7. Dissolved Air Flotation	1-H

The coker blowdown water goes through an induced air flotation system(1), combines with the CPI Separator effluent of Step 2 above, and continues on through the remainder of the treatment steps. The cooling tower blowdown water and the sanitary sewer streams both combine with the Dissolved Air Flotation effluent of Step 3 above and continue on through the remainder of the treatment steps.

The cooling tower filter backwash, boiler blowdown water, and the 105°F pit overflow streams all go through a sedimentation pond (1-V) then combine with the Activated Sludge Unit effluent and continue on through the remainder of the treatment steps.

The size, flows, retention time, and ultimate disposal of any solids of each of the treatment units are shown below in Table 1.

TABLE 1
WASTE WATER TREATMENT UNITS

<u>Treatment Unit</u>	<u>Size, Gal</u>	<u>Flow Rate, gpm</u>	<u>Retention Time, Hrs</u>	<u>Ultimate Disposal of Solids</u>
API Separator	113,100	432	4.4	Slip oil emulsion from the separators is removed by a contractor.
CPI Separator	77,800	432	3.0	
Dissolved Air Flotation	30,000	478	1.0	Sludge is removed to a land farm owned by Conoco Inc.
Equalization Basin	860,200	1,089	13.2	
Activated Sludge Unit				
Reaction Section	994,800	1,089	15.2	Sludge is removed to a land farm owned by Conoco Inc.
Clarifier	161,600	1,089	2.5	
Process Lagoon	5,200,000	1,783	48.6	
Fire Water Pond	1,600,000	847	31.4	
Dissolved Air Flotation	79,100	1,783	0.7	Sludge is removed to a land farm owned by Conoco Inc.

MCD 000002493

Notes:

1. The dissolved air flotation and induced air flotation units will be put into operation at approximately the same time as the Sour Crude Unit.