LPDES PERMIT NO. LA0005401, AI No. 286
LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. Company/Facility Name: ExxonMobil Chemical Company
Baton Rouge Chemical Plant
Post Office Box 241
Baton Rouge, LA 70821-0241

II. Issuing Office: Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

III. Prepared By: Heather Babin
Industrial Water Permits Section
Water and Waste Permits Division
E-mail: heather.babin@la.gov

Reassigned To: Jeffrey C. Ratcliff
Industrial Water Permits Section
Water and Waste Permits Division
Phone: 225-219-3093
E-mail: jeffrey.ratcliff@la.gov

Date Prepared: January 7, 2005
Date Amended: April 5, 2006

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an expired Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. LPDES permit - LPDES permit effective date: October 16, 1984
LPDES permit expiration date: 15 October 1989
EPA has not retained enforcement authority.

C. Application received on July 1, 2004 supersedes all other applications and addenda. The first application was submitted in April 1989, EPA reissued the NPDES permit on November 6, 1990: this permit was appealed and administratively stayed. Exxon submitted another application in May 1995 and then addenda in August 1995, March 1998, April 1999, July 2001, and October 2001. Additional information received on August 8, 2005 and April 6, 2006 are supplemental to the July 1, 2004 revised application.

V. Facility Information:

A. Location - 4999 Scenic Highway in Baton Rouge

B. Applicant Activity - According to the application, ExxonMobil Chemical Company, Baton Rouge Chemical Plant, is a organic chemicals, synthetic rubber, and petroleum resins manufacturing facility.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers Process Flow - 7.34 MGD	40 CFR 414 Subparts D, F, G, H, & I
Rubber Manufacturing	40 CFR 428

Other sources of technology based limits:
LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).
Best Professional Judgement

D. Fee Rate -
1. Fee Rating Facility Type: major
2. Complexity Type: VI
3. Wastewater Type: II
4. SIC code: 2869, 2822, and 2865

E. Continuous Facility Effluent Flow - 16.75 MGD.

VI. Receiving Waters: Monte Sano Bayou

1. TSS (15%), mg/L: 22.8
2. Average Hardness, mg/L $CaCO_3$: 148.46
3. Critical Flow, cfs: 4.88
4. Mixing Zone Fraction: 1
5. Harmonic Mean Flow, cfs: 7.97
6. River Basin: Mississippi River, Segment No. 070504
7. Designated Uses:
   The designated uses are secondary contact recreation, and limited aquatic life and wildlife use.

VII. Outfall Information:

Outfall 001

A. Type of wastewater - isopropanol/MEK process wastewater, process area stormwater, mainstrain ethylene/RGR process wastwater, olefins purification & extraction process wastewater, heartcut distillate process wastewater, acetates process wastewater, neo acids process wastewater, cyclopentadiene process wastewater, petroleum resins process wastewater, laboratory wastewater, plasticizer process wastewater, catalyst process wastewater, oxo alcohol process wastewater, groundwater well recovery wastewater, spent caustic oxidation wastewater, eagle ester process wastewater, lion alcohol process wastewater, aromatics process wastewater, synthetic rubber process wastewater, synthetic rubber process area stormwater, synthetic rubber process area washwater, sanitary wastewater, filter press wastewater, process area washwater, boiler blowdown, cooling tower blowdown, flare system wastewater, steam condensate, miscellaneous utility wastewaters, firefighting water, fire training and equipment test water, stormwater associated with construction activity, wastewater associated with maintenance activity, and kitchen water from the cafeteria.

B. Location - Discharge to Monte Sano Bayou at Latitude 30°30'01", Longitude 91°10'32".

C. Treatment - treatment of process wastewaters consists of:
- oil/water separator
- equalization/neutralization
- dissolved air flotation
- fluidized bed reactors
- aerobic digestion (activated sludge)
- clarification

D. Flow - Continuous Flow MGD.

OCPSF Process Wastewater*	5.3 MGD
Rubber Process Wastewater*	1.5 MGD
Utility Wastewater*	0.42 MGD
Sanitary Wastewater*	0.108 MGD

* Specific component waste streams are defined at Appendix A-1.

E. Receiving waters - Monte Sano Bayou

F. Basin and segment - Mississippi River Basin, Segment 070504

G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 002

A. Type of wastewater - cooling tower water, steam condensate, well water, eye wash and safety showers, fire training and equipment test waters, and non-process area storm water.

B. Location - Discharge to Monte Sano Bayou at Latitude 30°30'01", Longitude 91°10'24".

C. Treatment - none

D. Flow - Intermittent

E. Receiving waters - Monte Sano Bayou

F. Basin and segment - Mississippi River Basin, Segment 070504

Outfall 003

A. Type of wastewater - raw river water, cooling tower blowdown, non-process area stormwater, regeneration water, steam condensate, well water, eye wash and safety showers, and fire training and equipment test waters.

B. Location - Discharge to Monte Sano Bayou at Latitude 30°30'01", Longitude 91°10'20".

C. Treatment - none

D. Flow - Continuous (5.40 MGD)

E. Receiving waters - Monte Sano Bayou

F. Basin and segment - Mississippi River Basin, Segment 070504

Outfall 004

A. Type of wastewater - raw river water, cooling tower blowdown, non-process area stormwater, regeneration water, steam condensate, well water, eye wash and safety showers, and fire training and equipment test waters.

B. Location - Discharge to Monte Sano Bayou at Latitude 30°30'02", Longitude 91°10'32".

C. Treatment - none

D. Flow - Continuous (4.01 MGD)

E. Receiving waters - Monte Sano Bayou

F. Basin and segment - Mississippi River Basin, Segment 070504

Outfall 005

A. Type of wastewater - non-process area stormwater, steam condensate, eye wash and safety showers, well water, and fire training and equipment test waters.

B. Location - Discharge to Monte Sano Bayou at Latitude 30°30'03", Longitude 91°10'37".

C. Treatment - none

D. Flow - Intermittent

E. Receiving waters - Monte Sano Bayou

F. Basin and segment - Mississippi River Basin, Segment 070504

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current NPDES Permit:

A. Outfall 001 - application of the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) Manufacturing Point Source Category at 40 CFR 414, Subparts D, F, G, H, and I; and Rubber Manufacturing Point Source Category at 40 CFR 428, Subpart C.

The facility has requested a reduction in monitoring for BOD_5, TSS, and toxic pollutants. This request was partially granted. The new toxic parameters added will all have 1/year monitoring. The monitoring frequency for Benzene and Toluene have been reduced from 1/week to 1/month. BOD_5 and TSS have not been reduced based on exceedances of these parameters at Outfall 001.

B. Outfalls 002, 003, 004, and 005 - The parameter TOD has been replaced with TOC.

C. Toxicity testing has been placed on Outfalls 001, 003, & 004. A flow-weighted composite of Outfalls 001 & 004 will be reported on the DMR as Outfall 001. Each outfall will be tested quarterly with only Outfall 003 having the ability to reduce the frequency.

D. Outfalls 003 & 004 have quarterly reporting requirements for Total Residual Chlorine. This is being placed in the permit for data gathering purposes for the TMDL on Monte Sano Bayou.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. <u>TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS</u>

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part

122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 001 - Process Wastewaters

ExxonMobil Chemical Company, Baton Rouge Chemical Plant is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subparts D, F, G, H, and I.
Rubber Manufacturing	40 CFR 428, Subpart C

Calculations and basis of permit limitations are found at Appendix A and associated appendices.

2. Outfalls 002 & 005 - Utility Wastewaters & Stormwater

Utility wastewaters including cooling tower water, steam condensate, well water, eye wash and safety showers, fire training and equipment test water; and non-process area stormwater runoff, being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

Flow - Report
pH - 6.0 - 9.0 Standard Units
TOC - 50 mg/L, daily max
Oil and Grease - 15 mg/L, daily max

3. Outfalls 003 & 004 - Utility Wastewaters & Stormwater

Utility wastewaters including, but not limited to cooling tower blowdown, boiler blowdown, scrubber water, filter backwash, boiler feed water, noncontact cooling water, once-through cooling water, etc., being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

Flow - Report
pH - 6.0 - 9.0 Standard Units
TOC - 50 mg/L, daily max
Oil and Grease - 15 mg/L, daily max
TRC - Report
Biomonitoring

Stormwater Pollution Prevention Plan (SWP3) Requirement

ExxonMobil Chemical Company BRCP, is permitted to discharge stormwater under LPDES permit LAR05N087. This Multi-Sector General Permit (MSGP), LAR05N087 requires that ExxonMobil Chemical Company BRCP prepare and maintain a SWP3; therefore, no SWP3 requirement is necessary for this LPDES permit as long as the MSGP is maintained.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or specific analytical results from the permittee's application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

Hexachlorobenzene
Hexachlorobutadiene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

TMDL Waterbody

Outfall 001

The discharges from outfalls 001 (process wastewaters, utility wastewater, sanitary wastewater, and stormwater), 002, 003, 004, and 005 are to Monte Sano Bayou, Segment No. 070504. The Monte Sano Bayou is listed on the 1998 Court Ordered 303(d) report as being impaired with ammonia, chlorine, metals, non-priority organics, oil & grease, pesticides, and priority organics. Louisiana's Final Integrated Report 2002 303 (d) Lists of Impaired Waterbodies Requiring a TMDL revealed that there were no impairments. Louisiana's Final Integrated Report 2004 303(d) Lists of Impaired Waterbodies Requiring a TMDL revealed that chlorine is the only existing impairment. A TMDL is scheduled to be completed by March 31, 2011. Outfalls 003 and 004 are given a quarterly reporting requirement on Total Residual

Chlorine for data gathering purposes. Based on the evaluation of the effluent discharges and water quality analysis, it was determined that outfalls 002 and 005 do not have the potential to discharge chlorine into the receiving water body.

D. Biomonitoring Requirements

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfalls 001, 003 & 004 are as follows:

TOXICITY TESTS	FREQUENCY
Acute static renewal 48-hour definitive toxicity test using Daphnia pulex	1/quarter
Acute static renewal 48-hour definitive toxicity test using fathead minnow (Pimephales promelas)	1/quarter

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the

permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests.

Outfalls 001 & 004 - These additional effluent concentrations shall be 30%, 40%, 53%, 71%, and 95%. The low-flow effluent concentration (critical dilution) is defined as 95% effluent.

Outfall 003 - These additional effluent concentrations shall be 30%, 40%, 53%, 71%, and 94%. The low-flow effluent concentration (critical dilution) is defined as 94% effluent.

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfall 001 - Process Wastewaters, Utility Wastewaters, Stormwater, and Sanitary Wastewater

Flow and pH shall be monitored continuously. The following pollutants are to be monitored 1/day.

- Parameter(s):
  BOD_5
  TSS

The following pollutants are to be monitored 1/week.

Parameter(s):
Oil and Grease
COD

Those toxic pollutants indicated as being discharged well below the proposed permit limits are proposed to monitored 1/month.

Parameter(s):
Benzene
Toluene

Toxic pollutants not expected to be on-site are proposed to be monitored once per year.

2. Outfalls 002 and 005 - Utility Wastewaters & Stormwater

Utility wastewater pollutants being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

All parameters - 1/week

3. Outfalls 003 and 004 - Utility Wastewaters & Stormwater

Utility wastewater pollutants being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

Flow - Continuous
pH - Continuous
Oil & Grease - 1/week
TOC - 1/week
TRC - 1/quarter

X. DMR Review: A DMR review for the time period of January 1, 2002 through November 30, 2004 shows the following excursions.

Date	Parameter	Outfall	Reported Value	Permit Limits
28 Feb 02	BOD_5	001	9833 lbs/day	7706 lbs/day
30 Jun 02	TOD	005	250 mg/l	120 mg/l
30 Jun 02	Oil & Grease	005	48 mg/l	15 mg/l
31 Aug 02	TSS	001	9346 lbs/day	7656 lbs/day

XI. Endangered Species:

The receiving waterbody, Subsegment 070504 of the Mississippi River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 21, 2005 from Watson (FWS) to Gautreaux (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XII. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the

Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XIII. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

XIV. Variances:

No requests for variances have been received by this Office.

XV. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

Appendix A

07/12/2005 Calculation of Technology Based Limits for ExxonMobil Chemical, BRCP

(*1) TABLE 1

Permittee:	ExxonMobil Chemical, BRCP	
Permit Number:	LA0005401, AI281	
Appendix	Appendix A-1	
[] Flow Basis 1=proc, 0=all	0	
Concentration flow, (MGD)	---	
GL vs Old,0=n,1=y,2=GL+Old	1	
Outfall number	Out. 001	
Deepwell fract., 40 CFR 122.50		
(*2)		
OCPSF Subpart I=1, J=2	1	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Isoproponol/MEK Unit	0.5472	380
Process Area SW	0.63216	439
Maintrain Ethylene	2.60784	1811
Olefins Purif. & Extraction	0.288	200
Heartcut Distillate Unit	0.0072	5
Acetates Unit	0.00864	6
Neo Acids Unit	0.01728	12
Cyclopentadiene Purif.	0.02016	14
Petroleum Resins	0.09936	69
Chemical Plant Lab.	0.0216	15
Plasticizer Wastewater	0.06048	42
Catalyst Wastewater	0.0864	60
Oxo Alcohol Wastewater	0.03168	22
Groundwater Well Recovery	0.01008	7
Spent Caustic	0.0432	30
Eagle Ester	0.10944	76
Lion Alcohol	0.00576	4
Aromatics	0.03888	27
Filter Press	0.19728	137
Process Area Washwater	0.47232	328
TOTAL OCPSF PROCESS FLOW:	5.30496	3684
SYNTHETIC RUBBER PROCESS:	MGD	gpm
Synthetic Rubber	1.32048	917
Synthetic Rubber SW	0.13824	96
Synthetic Rubber Washwater	0.0432	30
TOTAL SYNTHETIC RUBBER FLOW:	1.50192	1043
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:	0.108	75
UTILITY WASTEWATER:	MGD	gpm
Central Boiler Feed Water	0.288	200
Cooling Tower Blowdown	0.0864	60
Flare System	0.036	25
Steam	0.01728	12
Losses to Solid Waste	-0.0072	-5
TOTAL UTILITY WW FLOWS:	0.42048	292
TOTAL OCPSF+BPJ FLOW:	7.33536	5094

(*3) Fraction of OCPSF Conc. or BPJ []

Fract =0, []=1	1	BOD,avg	BOD,max	TSS,avg	TSS,max
Miscellaneous WW		0.5	0.5	0.5	0.5
Misc. WW, mg/L		5	10	10	20
Utility WW		0.5	0.5	1	1
Utility WW, mg/L		5	10	10	20
Sanitary, mg/L		30	45	30	45

(*4)

Metal+CN Flows:	MGD	gpm
Total Chromium		
Total Copper		
Total Lead		
Total Nickel		
Total Zinc		
Total Cyanide		

(*5)

OCPSF Guideline Subpart:	Prod. 1000 lbs per day	Prod. Fraction of Total
B, Rayon Fibers		---
C, Other Fibers		---
D,Thermoplastic Resins		0.012
E,Thermosetting Resins		---
F, Commodity Organics		0.748
G, Bulk Organics		0.204
H, Specialty Organics		0.036
Total:	---	1

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio[*1]	6.3	6.3
TOC/BOD5 ratio		

COD,TOC, O&G []:	Average	Maximum	Flow MGD
COD, mg/L			---
TOC, mg/L			---
O&G, mg/L	10	15	6.80688

(*7)

INORGANIC GUIDELINES:

New Source 1=y 0=n	0	Prod.			OCPSF BOD5	
O Fraction=0, []=1	0	1000 lbs	Flow	Flow	OCPSF Fraction	
40 CFR 415		per day	MGD	gpm	Avg	Max
40 CFR 415.63 Mercury					1	1
40 CFR 415.63 Diaphragm					1	1
					1	1

[*1] Ratio based on the COD/BOD5 ratio calculated from data provided in the current application.

(*8)

OCPSF Alternate Flows:	MGD
Conventionals:	
Organic Toxics:	---
Process Waste Water	
Process Stormwater	

Conversion Factors:

Conv mg/L-->lbs/da	8.34
Conv ug/L-->mg/L:	0.0001
Conv gpm-->MGD:	0.00144

(*9)

Page and Table Numbering	1=y, 0=n
1st Input Page	1
2nd Input Page	0
OCPSF	1
SS Metals	0
Inorganic	0
Fertilizer	0
Pesticides	0
COD/TOC/O&G Tbl	1
BOD/TSS Tbl	1
Table Designation Sequence	
Pesticides &OCPSF	0
PestMetal 1=y,0=n	0

(*10)

COD and TOC limits, precalc	
COD,Avg (lbs/day)	0
COD,Max (lbs/day)	0
TOC,Avg (lbs/day)	0
TOC,Max (lbs/day)	0

OCPSF+Inorganic 7.33536

Calculation of Technology Based Limits for ExxonMobil Chemical, BRCP

Out. 001

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D,Thermoplastic Resins	24	64	40	130		0.012	5.30496	8.34	12.74209	33.97891	21.23682	69.01965
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics	30	80	46	149		0.748	5.30496	8.34	992.8211	2647.523	1522.326	4931.012
G, Bulk Organics	34	92	49	159		0.204	5.30496	8.34	306.872	830.3595	442.2567	1435.078
H, Specialty Organics	45	120	57	183		0.036	5.30496	8.34	71.67425	191.1313	90.78739	291.4753
Total/Weighted[]	31.284	83.696	46.936	152.036		1	5.30496	8.34	1384.109	3702.993	2076.607	6726.584
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS				Conv.	BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:	30	45	30	45			0.108	8.34	27.0216	40.5324	27.0216	40.5324
Miscellaneous:	---	---	---	---			---	8.34	---	---	---	---
Utility Wastewater:	5	10	10	20			0.42048	8.34	17.53402	35.06803	35.06803	70.13606
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BOD5/TSS BPJ ALLOCATION FLOWS:												
BPJ Source Total:							0.52848		44.55562	75.60043	62.08963	110.6685
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
					---	---	---	8.34	---	---	---	---
	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
					---	---	---		---	---	---	---
40 CFR 428.32 BPT	0.4	0.6	0.65	0.98	1644	---	1.50192		657.6	986.4	1068.6	1611.12
					---	---			---	---	---	---
Other Guideline Total (lbs/day)							1.50192		657.6	986.4	1068.6	1611.12
BOD5/TSS Grand Total (lbs/day)							7.33536		2086.265	4764.993	3207.296	8448.373

Calculation of Technology Based Limits for ExxonMobil Chemical, BRCP

Out. 001

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Guideline Subpart:	COD Avg lbs/1000	COD Max lbs/1000	TOC Avg lbs/1000	TOC Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---	---	---			---	---	---	---
40 CFR 428.33 BAT	2.08	3.12	---	---	1644	---			3419.52	5129.28	---	---
			---	---		---			---	---	---	---
Guideline Total									3419.52	5129.28	---	---
BPJ Source(s) or Flow Based Guidelines	COD Avg mg/L	COD Max mg/L	TOC Avg mg/L	TOC Max mg/L		COD Flow (MGD)	TOC Flow (MGD)	Conv. Factor	COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio, Source:	COD/BOD5 Ratio Avg	COD/BOD5 Ratio Max	TOC/BOD5 Ratio Avg	TOC/BOD5 Ratio Max	BOD5 limit Avg	BOD5 limit Max			COD Avg lbs/day	COD Max lbs/day	TOC Avg lbs/day	TOC Max lbs/day
Non 428 Sources	6.3	6.3	---	---	1428.665	3778.593			9000.59	23805.14	---	---
									---	---	---	---
Ratio Total									9000.59	23805.14	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									12420.11	28934.42	---	---
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg lbs/1000	O&G Max lbs/1000	Avg lbs/1000	Max lbs/1000	Prod. 1000 lbs per day	Flow to Tmt. Plt. Fraction		Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
40 CFR 428.22 BPT	0.16	0.24	---	---	1644	---			263.04	394.56	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg mg/L	O&G Max mg/L	Avg mg/L	Max mg/L		O&G Flow (MGD)	Flow (MGD)	Conv. Factor	O&G Avg lbs/day	O&G Max lbs/day	Avg lbs/day	Max lbs/day
BPJ O&G Allocation	10	15	---	---		5.72544	---	8.34	477.5017	716.2525	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									740.5417	1110.813	---	---

Calculation of Technology Based Limits for ExxonMobil Chemical, BRCP

Out. 001

TABLE 4

Calculation Summary of Conventional and Non-Conventional Limits

(*1) Parameter	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Avg lbs/day	(*8) Old Tech Max lbs/day	(*9) Old Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 001 Avg lbs/day	(*11) Out. 001 Max lbs/day	(*12) Out. 001 Avg mg/L	(*13) Out. 001 Max mg/L
CONVENTIONAL												
BOD5				2086.265	4764.993			---	2086	4765	---	---
TSS				3207.296	8448.373			---	3207	8448	---	---
Oil and Grease				740.5417	1110.813			---	741	1111	---	---
NON-CONVENTIONAL												
COD				12420.11	28934.42			---	12420	28934	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				--	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2) G/L-BPJ Avg. mg/L	(*3) G/L-BPJ Max mg/L	(*4) Process Flow (MGD)	(*5) G/L-BPJ Avg lbs/day	(*6) G/L-BPJ Max lbs/day	(*7) Tech Avg lbs/day	(*8) Old Tech Max lbs/day	(*9) Old Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 001 Avg lbs/day	(*11) Out. 001 Max lbs/day	(*12) Out. 001 Avg mg/L	(*13) Out. 001 Max mg/L
METALS AND CYANIDE												
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

Calculation of Technology Based Limits for ExxonMobil Chemical, BRCP

Out. 001

Calculation of Toxic Limits, OCPSF Subpart I

TABLE 5

(*1) OCPSF Parameter Subpart I	(*2) G/L Val Avg. mg/L	(*3) G/L Val Max mg/L	(*4) Process Flow (MGD)	(*5) G/L Val Avg lbs/day	(*6) G/L Val Max lbs/day	(*7) Tech Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) G/L-BPJ 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 001 Avg lbs/day	(*11) Out. 001 Max lbs/day	(*12) Out. 001 Avg mg/L	(*13) Out. 001 Max mg/L
VOLATILE COMPOUNDS												
Acrylonitrile	0.096	0.242	5.30496	4.247363	10.70689			---	4.25	10.71	---	---
Benzene	0.037	0.136	5.30496	1.637005	6.017098			---	1.64	6.02	---	---
Carbon Tetrachloride	0.018	0.038	5.30496	0.796381	1.681248			---	0.80	1.68	---	---
Chlorobenzene	0.015	0.028	5.30496	0.66365	1.238814			---	0.66	1.24	---	---
Chloroethane	0.104	0.268	5.30496	4.60131	11.85722			---	4.60	11.86	---	---
Chloroform	0.021	0.046	5.30496	0.929111	2.035195			---	0.93	2.04	---	---
1,1-Dichloroethane	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
1,2-Dichloroethane	0.068	0.211	5.30496	3.008549	9.33535			---	3.01	9.34	---	---
1,1-Dichloroethylene	0.016	0.025	5.30496	0.707894	1.106084			---	0.71	1.11	---	---
1,2-trans-Dichloro-ethylene	0.021	0.054	5.30496	0.929111	2.389142			---	0.93	2.39	---	---
1,2-Dichloropropane	0.153	0.23	5.30496	6.769235	10.17597			---	6.77	10.18	---	---
1,3-Dichloropropylene	0.029	0.044	5.30496	1.283058	1.946708			---	1.28	1.95	---	---
Ethylbenzene	0.032	0.108	5.30496	1.415788	4.778284			---	1.42	4.78	---	---
Methyl Chloride	0.086	0.19	5.30496	3.80493	8.40624			---	3.80	8.41	---	---
Methylene Chloride	0.04	0.089	5.30496	1.769735	3.93766			---	1.77	3.94	---	---
Tetrachloroethylene	0.022	0.056	5.30496	0.973354	2.477629			---	0.97	2.48	---	---
Toluene	0.026	0.08	5.30496	1.150328	3.539469			---	1.15	3.54	---	---
1,1,1-Trichloroethane	0.021	0.054	5.30496	0.929111	2.389142			---	0.93	2.39	---	---
1,1,2-Trichloroethane	0.021	0.054	5.30496	0.929111	2.389142			---	0.93	2.39	---	---
Trichloroethylene	0.021	0.054	5.30496	0.929111	2.389142			---	0.93	2.39	---	---
Vinyl Chloride	0.104	0.268	5.30496	4.60131	11.85722			---	4.60	11.86	---	---
ACID COMPOUNDS												
2-Chlorophenol	0.031	0.098	5.30496	1.371544	4.33585			---	1.37	4.34	---	---
2,4-Dichlorophenol	0.039	0.112	5.30496	1.725491	4.955257			---	1.73	4.96	---	---
2,4-Dimethylphenol	0.018	0.036	5.30496	0.796381	1.592761			---	0.80	1.59	---	---
4,6-Dinitro-o-cresol	0.078	0.277	5.30496	3.450983	12.25541			---	3.45	12.26	---	---
2,4-Dinitrophenol	0.071	0.123	5.30496	3.141279	5.441934			---	3.14	5.44	---	---
2-Nitrophenol	0.041	0.069	5.30496	1.813978	3.052792			---	1.81	3.05	---	---
4-Nitrophenol	0.072	0.124	5.30496	3.185522	5.486177			---	3.19	5.49	---	---
Phenol	0.015	0.026	5.30496	0.66365	1.150328			---	0.66	1.15	---	---

Calculation of Technology Based Limits for ExxonMobil Chemical, BRCP

Out. 001

Calculation of Toxic Limits, OCPSF Subpart I

TABLE 5

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF Parameter	G/L Val	G/L Val	Process	G/L Val	G/L Val	Tech Old	Tech Old	Anti-Back	Out. 001	Out. 001	Out. 001	Out. 001
Subpart I	Avg.	Max	Flow	Avg	Max	Avg	Max	0=no scr.	Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day	1=OldvsGL 2=Old+GL	lbs/day	lbs/day	mg/L	mg/L
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Acenaphthylene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Anthracene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Benzo(a)anthracene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Benzo(a)pyrene	0.023	0.061	5.30496	1.017597	2.698845			---	1.02	2.70	---	---
3,4-Benzofluoranthene	0.023	0.061	5.30496	1.017597	2.698845			---	1.02	2.70	---	---
Benzo(k)fluoranthene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Bis(2-ethylhexyl)-phthalate	0.103	0.279	5.30496	4.557067	12.3439			---	4.56	12.34	---	---
Chrysene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
1,2-Dichlorobenzene	0.077	0.163	5.30496	3.406739	7.211669			---	3.41	7.21	---	---
1,3-Dichlorobenzene	0.031	0.044	5.30496	1.371544	1.946708			---	1.37	1.95	---	---
1,4-Dichlorobenzene	0.015	0.028	5.30496	0.66365	1.238814			---	0.66	1.24	---	---
Diethyl phthalate	0.081	0.203	5.30496	3.583713	8.981403			---	3.58	8.98	---	---
Dimethyl phthalate	0.019	0.047	5.30496	0.840624	2.079438			---	0.84	2.08	---	---
Di-n-butyl phthalate	0.027	0.057	5.30496	1.194571	2.521872			---	1.19	2.52	---	---
2,4-Dinitrotoluene	0.113	0.285	5.30496	4.9995	12.60936			---	5.00	12.61	---	---
2,6-Dinitrotoluene	0.255	0.641	5.30496	11.28206	28.36			---	11.28	28.36	---	---
Fluoranthene	0.025	0.068	5.30496	1.106084	3.008549			---	1.11	3.01	---	---
Fluorene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Hexachlorobenzene	0.015	0.028	5.30496	0.66365	1.238814			---	0.66	1.24	---	---
Hexachlorobutadiene	0.02	0.049	5.30496	0.884867	2.167925			---	0.88	2.17	---	---
Hexachloroethane	0.021	0.054	5.30496	0.929111	2.389142			---	0.93	2.39	---	---
Naphthalene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Nitrobenzene	0.027	0.068	5.30496	1.194571	3.008549			---	1.19	3.01	---	---
Phenanthrene	0.022	0.059	5.30496	0.973354	2.610359			---	0.97	2.61	---	---
Pyrene	0.025	0.067	5.30496	1.106084	2.964306			---	1.11	2.96	---	---
1,2,4-Trichlorobenzene	0.068	0.14	5.30496	3.008549	6.194071			---	3.01	6.19	---	---

APPENDIX A-2 LA0005401, AI No. 286

Documentation and Explanation of Technology Calculations
and Associated Lotus Spreadsheet

This spreadsheet covers the following guideline: 40 CFR 414, Organic Chemicals, Plastics, and Synthetic Fibers, (OCPSF). Other guidelines maybe included on a case-by-case basis. Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit", refers to the most recently issued NPDES or LPDES permit. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.l/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is the data input area for the OCPSF guidelines, Sections (*2), (*3), (*4), (*5), (*6), (*8), and (*10). There are no inorganic loading contributions for this outfall, subsequently all input/calculation areas addressing inorganic guidelines are left blank. The Page and Table numbering sequence section, Section (*9) is used for applicable guideline(s) as well as the generalized input information in Section (*1).

(*1) General input information:

<u>Permittee</u> - permittee name.

<u>Permit Number</u>- LPDES permit number.

<u>Appendix</u>- Appendix designation for the header.

<u>[] Flow Basis 1=proc, 0=all</u>- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall

flow will be used in determining concentration based limits. See Concentration flow (MGD).

Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.1, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract., 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

(*2) OCPSF Flow Calculations- OCPSF flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD_5 and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

(*3) Fraction of OCPSF Conc. or BPJ []. Utility, Miscellaneous and other wastewaters contribute BOD_5 and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD_5 and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 25% of the production weighted OCPSF concentrations for BOD_5 and TSS. Sanitary wastewaters shall receive BOD_5 and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD_5 and TSS fractions may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.

(*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals through out a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.l, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.

(*5) OCPSF Guideline Subpart- BOD_5 and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).

(*6) COD & TOC Ratios/COD, TOC, O&G []- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD_5 limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new

permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.

(*7) Inorganic Effluent Guidelines (40 CFR 415) - Not applicable to this outfall.

(*8) OCPSF Alternate Flows - On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD_5 and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.

(*9) Page and Table numbering sequence - This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.

(*10) Precalculated COD and TOC limits - Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.

Table 2

Table 2 is a calculation table for the conventional pollutant loadings of BOD_5 and TSS utilizing guidelines and BPJ.

(*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater, miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".

(*2) Average BOD_5 - Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewaters typically receive a BPJ concentration consisting of 100% of the weighted concentration determined on the row labeled, "Total/Weighted[]". Different concentrations from these may be used on a case-by-case basis.

(*3) Maximum BOD_5 - Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewaters typically receive a BPJ concentration consisting of 100% of the weighted concentration determined on the row labeled, "Total/Weighted[]". Different concentrations from these may be used on a case-by-case basis.

(*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.

(*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart.

(*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water. This generally will not apply to facilities that fall exclusively under the OCPSF guidelines.

(*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.

(*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.

(*10) BOD_5, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*2) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD_5.

(*11) BOD_5, Maximum, lbs/day- Similar to column (*10). See column (*10).

(*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*4) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD_5 loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.

(*13) TSS, Maximum, lbs/day- Similar to column (*12). See column (*12).

Table 3

Table 3 is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (*2) (Daily Average) and (*3) (Daily Maximum) are multiplied times the flow in column (*4) times the conversion factor of 8.34 to yield daily average and daily maximum guideline loadings in lbs/day in columns (*5) and (*6), respectively.

(*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.

(*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

(*4) Process flow in MGD- Similar to columns (*2) and (*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.

(*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (*2), these values are calculated in other tables and summarized in this column.

(*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.l, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified

concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Table 4

Table 4 calculates the organic toxic technology effluent limitations based on BAT/NSPS established in the OCPSF guidelines, Subpart I or J as indicated. The column designations are very similar to those used for the summary table for Conventional pollutants, Non-Conventional pollutants, and Metals and Cyanide.

(*1) Parameter. The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.

(*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.

(*4) OCPSF process flow in MGD.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*2) times the flow in column (*4) times the conversion factor of 8.34.

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (*3) times the flow in column (*4) times the conversion factor of 8.34. Similar to column (*5).

(*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (≈10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

(*8) Maximum Tech Old in lbs/day- Similar to (*7).

(*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the

spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).

(*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).

(*12) Daily Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

(*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:

$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Appendix B

Developer: Bruce Fielding Time: 08:19 AM

Software: Lotus 4.0 LA0005401, AI281

Revision date: 02/14/05

Water Quality Screen for ExxonMobil Chemical, BRCP

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Monte Sano Bayou
Critical flow (Qr) cfs=	9.54
Harm. mean/avg tidal cfs=	22.866
Drinking Water=1 HHNPCR=2	2
Marine, 1=y, 0=n	
Rec. Water Hardness=	148.46
Rec. Water TSS=	22.8
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	ExxonMobil Chemical, BRCP
Permit Number=	LA0005401, AI281
Facility flow (Qef),MGD=	7.335
Outfall Number =	001
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	1

Page Numbering/Labeling

Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	6.165702
Harm. Mean (MGD)=	14.7783
ZID Dilution =	0.922459
MZ Dilution =	0.543305
HHnc Dilution=	0.543305
HHc Dilution=	0.331701
ZID Upstream =	0.084059
MZ Upstream =	0.840587
MZhhnc Upstream=	0.840587
MZhhc Upstream=	2.014764
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.061174
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.079564
lbs/day-->ug/L Qeo	16.34684
lbs/day-->ug/L Qef	16.34684
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.922459
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	92.246%
Dilution No. 2	69.1844%
Dilution No. 3	51.8883%
Dilution No. 4	38.9163%
Dilution No. 5	29.1872%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	2.116564
Total Cadmium	3.663965
Chromium III	5.182103
Chromium VI	1
Total Copper	3.344749
Total Lead	6.232931
Total Mercury	2.871919
Total Nickel	2.879784
Total Zinc	4.193673

Aquatic Life, Dissolved

Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	48.79656	1.380553
Chromium III	758.4261	246.0256
Chromium VI	15.712	10.582
Copper	26.73772	17.21787
Lead	99.02481	3.858855
Mercury	1.734	0.012
Nickel	1977.255	219.5901
Zinc	159.9597	146.0674

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)		0.529		5	0	1.12677	700			
3-Chlorophenol				10						
4-Chlorophenol				10			383			
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			719.2085			
Total Cadmium				1			178.7889			
Chromium III				10			3930.242			
Chromium VI				10			15.712			
Total Copper				10			89.43097			
Total Lead				5			617.2148			
Total Mercury				0.2			4.979908			
Total Nickel				40			5694.069			
Total Zinc				20			670.8186			
Total Cyanide				20			45.9			
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						2.2E-006	C
VOLATILE COMPOUNDS										
Benzene		1.637005	6.017098	10	1		2249		71.41	C
Bromoform				10			2930		212.7	C
Bromodichloromethane				10					470.79	C
Carbon Tetrachloride		0.796381	1.681248	10	1		2730		4.42	C
Chloroform		0.929111	2.035195	10	1		2890		470.79	C
Dibromochloromethane				10					470.79	C
1,2-Dichloroethane		3.008549	9.33535	10	1		11800		98.62	C
1,1-Dichloroethylene		0.707894	1.106084	10	1		1160		92.36	C
1,3-Dichloropropylene		1.283058	1.946708	10	1		606		29.91	
Ethylbenzene		1.415788	4.778284	10	1		3200		27860	
Methyl Chloride		3.80493	8.40624	50	1		55000			
Methylene Chloride		1.769735	3.93766	20	1		19300		1577.91	C
1,1,2,2-Tetrachloro-ethane				10			932		10.77	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 001	(*20) WQBL Max 001	(*21) WQBL Avg 001	(*22) WQBL Max 001	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	758.8411	---	---	242.8291	---	---	242.8291	318.1062	755.1986	19.4598	46.19844	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	415.1945	---	---	132.8622	---	---	132.8622	174.0495	413.2015	10.64729	25.27715	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	779.6642	---	---	249.4925	---	---	249.4925	326.8352	775.9218	19.99378	47.46616	no
Total Cadmium	193.8176	---	---	62.02164	---	---	62.02164	81.24835	192.8873	4.970278	11.79967	no
Chromium III	4260.613	---	---	1363.396	---	---	1363.396	1786.049	4240.162	109.2596	259.3873	no
Chromium VI	17.03273	---	---	5.450473	---	---	5.450473	7.14012	16.95097	0.436789	1.036957	no
Total Copper	96.94842	---	---	31.02349	---	---	31.02349	40.64078	96.48306	2.486155	5.902245	no
Total Lead	669.097	---	---	214.1111	---	---	214.1111	280.4855	665.8854	17.15839	40.73481	no
Total Mercury	5.398512	---	---	1.727524	---	---	1.727524	2.263056	5.3726	0.13844	0.328663	no
Total Nickel	6172.705	---	---	1975.266	---	---	1975.266	2587.598	6143.076	158.2935	375.7959	no
Total Zinc	727.2067	---	---	232.7061	---	---	232.7061	304.8451	723.7161	18.64856	44.27254	no
Total Cyanide	49.75829	---	---	15.92265	---	---	15.92265	20.85868	49.51945	1.276007	3.029298	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000007	---	---	0.000007	0.000007	0.000007	0.000016	4.1E-007	9.7E-007	no
VOLATILE COMPOUNDS												
Benzene	2438.048	---	215.2843	780.1753	---	215.2843	215.2843	215.2843	512.3767	13.16978	31.34408	no
Bromoform	3176.292	---	641.2404	1016.413	---	641.2404	641.2404	641.2404	1526.152	39.22717	93.36067	no
Bromodichloromethane	---	---	1419.321	---	---	1419.321	1419.321	1419.321	3377.984	86.82539	206.6444	no
Carbon Tetrachloride	2959.48	---	13.32526	947.0336	---	13.32526	13.32526	13.32526	31.71411	0.815158	1.940076	no
Chloroform	3132.929	---	1419.321	1002.537	---	1419.321	1002.537	1313.324	3117.891	80.34115	190.7336	no
Dibromochloromethane	---	---	1419.321	---	---	1419.321	1419.321	1419.321	3377.984	86.82539	206.6444	no
1,2-Dichloroethane	12791.89	---	297.3161	4093.405	---	297.3161	297.3161	297.3161	707.6122	18.18798	43.2874	no
1,1-Dichloroethylene	1257.508	---	278.4436	402.4026	---	278.4436	278.4436	278.4436	662.6958	17.03348	40.53969	no
1,3-Dichloropropylene	656.9395	---	55.05194	210.2207	---	55.05194	55.05194	55.05194	131.0236	3.367742	8.015226	no
Ethylbenzene	3468.988	---	51278.74	1110.076	---	51278.74	1110.076	1454.2	3452.337	88.95906	211.1929	no
Methyl Chloride	59623.23	---	---	19079.43	---	---	19079.43	24994.06	59337.03	1528.984	3629.878	no
Methylene Chloride	20922.33	---	4757.027	6695.146	---	4757.027	4757.027	4757.027	11321.72	291.0059	692.594	no
1,1,2,2-Tetrachloro-ethane	1010.343	---	32.46901	323.3097	---	32.46901	32.46901	32.46901	77.27625	1.986256	4.727289	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 95th % 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.973354	2.477629	10	1		1290		8.85	C
Toluene		1.150328	3.539469	10	1		1270		301940	
1,1,1-Trichloroethane		0.929111	2.389142	10	1		5280		173080	
1,1,2-Trichloroethane		0.929111	2.389142	10	1		1800		41.99	C
Trichloroethylene		0.929111	2.389142	10	1		3900		92.36	C
Vinyl Chloride		4.60131	11.85722	10	1				528.99	C
ACID COMPOUNDS										
2-Chlorophenol		1.371544	4.33585	10	1		258		401.84	
2,4-Dichlorophenol		1.725491	4.955257	10	1		202		793.8	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250		0.00054	C
Hexachlorobenzene		0.66365	1.238814	10	1				0.00073	C
Hexachlorabutadiene		0.884867	2.167925	10	1		5.1		0.35	C
PESTICIDES										
Aldrin				0.05			3		0.00014	C
Hexachlorocyclohexane (gamma BHC, Lindane)			0.0039	0.05	0		5.3		0.64	C
Chlordane				0.2			2.4		0.00059	C
4,4'-DDT				0.1			1.1		0.00059	C
4,4'-DDE				0.1			52.5			
4,4'-DDD				0.1			0.03			
Dieldrin				0.1			0.2374		0.00014	C
Endosulfan				0.1			0.22		1.99	
Endrin				0.1			0.0864		0.81	
Heptachlor				0.05			0.52		0.00021	C
Toxaphene				5			0.73		0.00075	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19			
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1) Toxic Parameters	(*12) WLAa Acute ug/L	(*13) WLAc Chronic ug/L	(*14) WLAh HHNDW ug/L	(*15) LTAa Acute ug/L	(*16) LTAc Chronic ug/L	(*17) LTAh HHNDW ug/L	(*18) Limiting A,C,HH ug/L	(*19) WQBL Avg 001 ug/L	(*20) WQBL Max 001 ug/L	(*21) WQBL Avg 001 lbs/day	(*22) WQBL Max 001 lbs/day	(*23) Need WQBL?
Tetrachloroethylene	1398.436	---	26.68066	447.4994	---	26.68066	26.68066	26.68066	63.49998	1.63216	3.884541	no
Toluene	1376.754	---	555746.7	440.5614	---	555746.7	440.5614	577.1355	1370.146	35.30563	83.81718	no
1,1,1-Trichloroethane	5723.83	---	318568.7	1831.625	---	318568.7	1831.625	2399.429	5696.355	146.7825	348.4683	no
1,1,2-Trichloroethane	1951.306	---	126.59	624.4178	---	126.59	126.59	126.59	301.2841	7.744001	18.43072	no
Trichloroethylene	4227.829	---	278.4436	1352.905	---	278.4436	278.4436	278.4436	662.6958	17.03348	40.53969	no
Vinyl Chloride	---	---	1594.78	---	---	1594.78	1594.78	1594.78	3795.577	97.55892	232.1902	no
ACID COMPOUNDS												
2-Chlorophenol	279.6871	---	739.6213	89.49988	---	739.6213	89.49988	117.2448	278.3446	7.172324	17.02743	no
2,4-Dichlorophenol	218.9798	---	1461.058	70.07355	---	1461.058	70.07355	91.79635	217.9287	5.615541	13.33155	no
BASE NEUTRAL COMPOUNDS												
Benzidine	271.0147	---	0.001628	86.72469	---	0.001628	0.001628	0.001628	0.003875	0.0001	0.000237	no
Hexachlorobenzene	---	---	0.002201	---	---	0.002201	0.002201	0.002201	0.005238	0.000135	0.00032	yes
Hexachlorabutadiene	5.528699	---	1.055167	1.769184	---	1.055167	1.055167	1.055167	2.511299	0.064549	0.153626	yes
PESTICIDES												
Aldrin	3.252176	---	0.000422	1.040696	---	0.000422	0.000422	0.000422	0.001005	0.000026	0.000061	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5.745511	---	1.929449	1.838563	---	1.929449	1.838563	2.408518	5.717932	0.147338	0.349788	no
Chlordane	2.601741	---	0.001779	0.832557	---	0.001779	0.001779	0.001779	0.004233	0.000109	0.000259	no
4,4'-DDT	1.192465	---	0.001779	0.381589	---	0.001779	0.001779	0.001779	0.004233	0.000109	0.000259	no
4,4'-DDE	56.91308	---	---	18.21219	---	---	18.21219	23.85796	56.6399	1.459485	3.464883	no
4,4'-DDD	0.032522	---	---	0.010407	---	---	0.010407	0.013633	0.032366	0.000834	0.00198	no
Dieldrin	0.257356	---	0.000422	0.082354	---	0.000422	0.000422	0.000422	0.001005	0.000026	0.000061	no
Endosulfan	0.238493	---	3.662767	0.076318	---	3.662767	0.076318	0.099976	0.237348	0.006116	0.01452	no
Endrin	0.093663	---	1.490875	0.029972	---	1.490875	0.029972	0.039263	0.093213	0.002402	0.005702	no
Heptachlor	0.56371	---	0.000633	0.180387	---	0.000633	0.000633	0.000633	0.001507	0.000039	0.000092	no
Toxaphene	0.791363	---	0.002261	0.253236	---	0.002261	0.002261	0.002261	0.005381	0.000138	0.000329	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	20.59711	---	---	6.591077	---	---	6.591077	8.63431	20.49825	0.528194	1.253958	no
Ammonia	---	7362.346	---	---	3902.043	---	3902.043	5111.677	12135.35	312.7012	742.367	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 08:24 AM

Software: Lotus 4.0 LA0005401, AI281

Revision date: 02/14/05

Water Quality Screen for ExxonMobil Chemical, BRCP

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Monte Sano Bayou
Critical flow (Qr) cfs=	4.885
Harm. mean/avg tidal cfs=	22.866
Drinking Water=1 HHNPCR=2	2
Marine, 1=y, 0=n	
Rec. Water Hardness=	148.46
Rec. Water TSS=	22.8
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	ExxonMobil Chemical, BRCP
Permit Number=	LA0005401, AI281
Facility flow (Qef),MGD=	5.40288
Outfall Number =	3
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	1

Page Numbering/Labeling

Appendix	Appendix B-2
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	3.157176
Harm. Mean (MGD)=	14.7783
ZID Dilution =	0.944791
MZ Dilution =	0.631173
HHnc Dilution=	0.631173
HHc Dilution=	0.267719
ZID Upstream =	0.058435
MZ Upstream =	0.58435
MZhhnc Upstream=	0.58435
MZhhc Upstream=	2.735263
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.04506
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.040741
lbs/day-->ug/L Qeo	22.19262
lbs/day-->ug/L Qef	22.19262
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.944791
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	94.479%
Dilution No. 2	70.8593%
Dilution No. 3	53.1445%
Dilution No. 4	39.8584%
Dilution No. 5	29.8938%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	2.116564
Total Cadmium	3.663965
Chromium III	5.182103
Chromium VI	1
Total Copper	3.344749
Total Lead	6.232931
Total Mercury	2.871919
Total Nickel	2.879784
Total Zinc	4.193673

Aquatic Life, Dissolved

Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	48.79656	1.380553
Chromium III	758.4261	246.0256
Chromium VI	15.712	10.582
Copper	26.73772	17.21787
Lead	99.02481	3.858855
Mercury	1.734	0.012
Nickel	1977.255	219.5901
Zinc	159.9597	146.0674

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700			
3-Chlorophenol				10						
4-Chlorophenol				10			383			
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10		719.2085				
Total Cadmium				1		178.7889				
Chromium III				10		3930.242				
Chromium VI				10		15.712				
Total Copper				10		89.43097				
Total Lead				5		617.2148				
Total Mercury				0.2		4.979908				
Total Nickel				40		5694.069				
Total Zinc				20		670.8186				
Total Cyanide				20		45.9				
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						2.2E-006	C
VOLATILE COMPOUNDS										
Benzene				10			2249		71.41	C
Bromoform			0.375	10	0		2930		212.7	C
Bromodichloromethane				10					470.79	C
Carbon Tetrachloride				10			2730		4.42	C
Chloroform				10			2890		470.79	C
Dibromochloromethane				10					470.79	C
1,2-Dichloroethane				10			11800		98.62	C
1,1-Dichloroethylene				10			1160		92.36	C
1,3-Dichloropropylene				10			606		29.91	
Ethylbenzene				10			3200		27860	
Methyl Chloride				50			55000			
Methylene Chloride				20			19300		1577.91	C
1,1,2,2-Tetrachloro-ethane				10			932		10.77	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg	(*20) WQBL Max	(*21) WQBL Avg	(*22) WQBL Max	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	740.9045	---	---	237.0895	---	---	237.0895	310.5872	737.3482	13.99506	33.22492	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	405.3806	---	---	129.7218	---	---	129.7218	169.9356	403.4348	7.657299	18.17878	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	761.2354	---	---	243.5953	---	---	243.5953	319.1099	757.5815	14.3791	34.13664	no
Total Cadmium	189.2364	---	---	60.55565	---	---	60.55565	79.3279	188.3281	3.574517	8.486067	no
Chromium III	4159.906	---	---	1331.17	---	---	1331.17	1743.833	4139.939	78.57713	186.5457	no
Chromium VI	16.63013	---	---	5.321642	---	---	5.321642	6.971351	16.55031	0.314129	0.745757	no
Total Copper	94.65687	---	---	30.2902	---	---	30.2902	39.68016	94.20252	1.787989	4.244767	no
Total Lead	653.2818	---	---	209.0502	---	---	209.0502	273.8557	650.146	12.33994	29.29559	no
Total Mercury	5.270909	---	---	1.686691	---	---	1.686691	2.209565	5.245609	0.099563	0.236367	no
Total Nickel	6026.802	---	---	1928.577	---	---	1928.577	2526.436	5997.874	113.8412	270.2643	no
Total Zinc	710.0179	---	---	227.2057	---	---	227.2057	297.6395	706.6098	13.41164	31.83985	no
Total Cyanide	48.58217	---	---	15.54629	---	---	15.54629	20.36565	48.34897	0.917676	2.178606	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000008	---	---	0.000008	0.000008	0.000008	0.00002	3.7E-007	8.8E-007	no
VOLATILE COMPOUNDS												
Benzene	2380.42	---	266.7351	761.7345	---	266.7351	266.7351	266.7351	634.8295	12.01909	28.60543	no
Bromoform	3101.215	---	794.4904	992.3887	---	794.4904	794.4904	794.4904	1890.887	35.79975	85.20341	no
Bromodichloromethane	---	---	1758.524	---	---	1758.524	1758.524	1758.524	4185.288	79.23914	188.5891	no
Carbon Tetrachloride	2889.528	---	16.50986	924.6489	---	16.50986	16.50986	16.50986	39.29347	0.743935	1.770564	no
Chloroform	3058.877	---	1758.524	978.8407	---	1758.524	978.8407	1282.281	3044.195	57.77962	137.1715	no
Dibromochloromethane	---	---	1758.524	---	---	1758.524	1758.524	1758.524	4185.288	79.23914	188.5891	no
1,2-Dichloroethane	12489.53	---	368.3716	3996.651	---	368.3716	368.3716	368.3716	876.7244	16.59883	39.50522	no
1,1-Dichloroethylene	1227.785	---	344.9889	392.8911	---	344.9889	344.9889	344.9889	821.0735	15.5452	36.99759	no
1,3-Dichloropropylene	641.4116	---	47.38792	205.2517	---	47.38792	47.38792	47.38792	112.7833	2.135301	5.082016	no
Ethylbenzene	3386.992	---	44140	1083.837	---	44140	1083.837	1419.827	3370.735	63.97744	151.8854	no
Methyl Chloride	58213.93	---	---	18628.46	---	---	18628.46	24403.28	57934.5	1099.612	2610.53	no
Methylene Chloride	20427.8	---	5893.908	6536.895	---	5893.908	5893.908	5893.908	14027.5	265.5796	632.0795	no
1,1,2,2-Tetrachloro-ethane	986.4615	---	40.22878	315.6677	---	40.22878	40.22878	40.22878	95.74449	1.81271	4.314249	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10			1290		8.85	C
Toluene				10			1270		301940	
1,1,1-Trichloroethane				10			5280		173080	
1,1,2-Trichloroethane				10			1800		41.99	C
Trichloroethylene				10			3900		92.36	C
Vinyl Chloride				10					528.99	C
ACID COMPOUNDS										
2-Chlorophenol				10			258		401.84	
2,4-Dichlorophenol				10			202		793.8	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250		0.00054	C
Hexachlorobenzene				10					0.00073	C
Hexachlorabutadiene				10			5.1		0.35	C
PESTICIDES										
Aldrin				0.05			3		0.00014	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3		0.64	C
Chlordane				0.2			2.4		0.00059	C
4,4'-DDT				0.1			1.1		0.00059	C
4,4'-DDE				0.1			52.5			
4,4'-DDD				0.1			0.03			
Dieldrin				0.1			0.2374		0.00014	C
Endosulfan				0.1			0.22		1.99	
Endrin				0.1			0.0864		0.81	
Heptachlor				0.05			0.52		0.00021	C
Toxaphene				5			0.73		0.00075	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19			
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg	(*20) WQBL Max	(*21) WQBL Avg	(*22) WQBL Max	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1365.381	---	33.05707	436.922	---	33.05707	33.05707	33.05707	78.67584	1.489552	3.545135	no
Toluene	1344.213	---	478378.8	430.148	---	478378.8	430.148	563.4939	1337.76	25.39105	60.2795	no
1,1,1-Trichloroethane	5588.537	---	274219.4	1788.332	---	274219.4	1788.332	2342.715	5561.712	105.5628	250.6109	no
1,1,2-Trichloroethane	1905.183	---	156.8437	609.6586	---	156.8437	156.8437	156.8437	373.288	7.067379	16.82036	no
Trichloroethylene	4127.897	---	344.9889	1320.927	---	344.9889	344.9889	344.9889	821.0735	15.5452	36.99759	no
Vinyl Chloride	---	---	1975.917	---	---	1975.917	1975.917	1975.917	4702.681	89.03484	211.9029	no
ACID COMPOUNDS												
2-Chlorophenol	273.0762	---	636.6554	87.3844	---	636.6554	87.3844	114.4736	271.7655	5.158181	12.24576	no
2,4-Dichlorophenol	213.8039	---	1257.657	68.41724	---	1257.657	68.41724	89.62659	212.7776	4.038576	9.587764	no
BASE NEUTRAL COMPOUNDS												
Benzidine	264.6088	---	0.002017	84.6748	---	0.002017	0.002017	0.002017	0.004801	0.000091	0.000216	no
Hexachlorobenzene	---	---	0.002727	---	---	0.002727	0.002727	0.002727	0.00649	0.000123	0.000292	no
Hexachlorabutadiene	5.398019	---	1.307342	1.727366	---	1.307342	1.307342	1.307342	3.111474	0.058909	0.140203	no
PESTICIDES												
Aldrin	3.175305	---	0.000523	1.016098	---	0.000523	0.000523	0.000523	0.001245	0.000024	0.000056	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5.609706	---	2.390568	1.795106	---	2.390568	1.795106	2.351589	5.582779	0.105963	0.25156	no
Chlordane	2.540244	---	0.002204	0.812878	---	0.002204	0.002204	0.002204	0.005245	0.000099	0.000236	no
4,4'-DDT	1.164279	---	0.002204	0.372569	---	0.002204	0.002204	0.002204	0.005245	0.000099	0.000236	no
4,4'-DDE	55.56784	---	---	17.78171	---	---	17.78171	23.29404	55.30111	1.04963	2.491869	no
4,4'-DDD	0.031753	---	---	0.010161	---	---	0.010161	0.013311	0.031601	0.0006	0.001424	no
Dieldrin	0.251272	---	0.000523	0.080407	---	0.000523	0.000523	0.000523	0.001245	0.000024	0.000056	no
Endosulfan	0.232856	---	3.152857	0.074514	---	3.152857	0.074514	0.097613	0.231738	0.004398	0.010442	no
Endrin	0.091449	---	1.283324	0.029264	---	1.283324	0.029264	0.038335	0.09101	0.001727	0.004101	no
Heptachlor	0.550386	---	0.000784	0.176124	---	0.000784	0.000784	0.000784	0.001867	0.000035	0.000084	no
Toxaphene	0.772658	---	0.002801	0.24725	---	0.002801	0.002801	0.002801	0.006667	0.000126	0.0003	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	20.11027	---	---	6.435285	---	---	6.435285	8.430223	20.01374	0.379866	0.901819	no
Ammonia	---	6337.402	---	---	3358.823	---	3358.823	4400.058	10445.94	198.2667	470.6942	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 08:26 AM

Software: Lotus 4.0 LA0005401, AI281

Revision date: 02/14/05

Water Quality Screen for ExxonMobil Chemical, BRCP

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Monte Sano Bayou
Critical flow (Qr) cfs=	9.54
Harm. mean/avg tidal cfs=	22.866
Drinking Water=1 HHNPCR=2	2
Marine, 1=y, 0=n	
Rec. Water Hardness=	148.46
Rec. Water TSS=	22.8
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	*ExxonMobil Chemical, BRCP*
Permit Number=	LA0005401, AI281
Facility flow (Qef),MGD=	4.011
Outfall Number =	004
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	1

Page Numbering/Labeling

Appendix	Appendix B-3
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
Mz plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	6.165702
Harm. Mean (MGD)=	14.7783
ZID Dilution =	0.866762
MZ Dilution =	0.394136
HHnc Dilution=	0.394136
HHc Dilution=	0.213473
ZID Upstream =	0.15372
MZ Upstream =	1.537198
MZhhnc Upstream=	1.537198
MZhhc Upstream=	3.684442
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.033452
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.079564
lbs/day-->ug/L Qeo	29.89381
lbs/day-->ug/L Qef	29.89381
diss-->tot 1=y0=n	1
Cu diss->tot1=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.866762
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	86.676%
Dilution No. 2	65.0071%
Dilution No. 3	48.7553%
Dilution No. 4	36.5665%
Dilution No. 5	27.4249%

Partition Coefficients; Dissolved-->Total

METALS	*FW*
Total Arsenic	2.116564
Total Cadmium	3.663965
Chromium III	5.182103
Chromium VI	1
Total Copper	3.344749
Total Lead	6.232931
Total Mercury	2.871919
Total Nickel	2.879784
Total Zinc	4.193673

Aquatic Life, Dissolved

Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	48.79656	1.380553
Chromium III	758.4261	246.0256
Chromium VI	15.712	10.582
Copper	26.73772	17.21787
Lead	99.02481	3.858855
Mercury	1.734	0.012
Nickel	1977.255	219.5901
Zinc	159.9597	146.0674

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700			
3-Chlorophenol				10						
4-Chlorophenol				10			383			
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10		719.2085				
Total Cadmium				1		178.7889				
Chromium III				10		3930.242				
Chromium VI				10		15.712				
Total Copper			0.226	10	0	89.43097				
Total Lead				5		617.2148				
Total Mercury				0.2		4.979908				
Total Nickel				40		5694.069				
Total Zinc				20		670.8186				
Total Cyanide				20		45.9				
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						2.2E-006	C
VOLATILE COMPOUNDS										
Benzene				10			2249		71.41	C
Bromoform				10			2930		212.7	C
Bromodichloromethane				10					470.79	C
Carbon Tetrachloride				10			2730		4.42	C
Chloroform				10			2890		470.79	C
Dibromochloromethane				10					470.79	C
1,2-Dichloroethane				10			11800		98.62	C
1,1-Dichloroethylene				10			1160		92.36	C
1,3-Dichloropropylene				10			606		29.91	
Ethylbenzene				10			3200		27860	
Methyl Chloride				50			55000			
Methylene Chloride				20			19300		1577.91	C
1,1,2,2-Tetrachloro-ethane				10			932		10.77	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 004	(*20) WQBL Max 004	(*21) WQBL Avg 004	(*22) WQBL Max 004	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	807.6039	---	---	258.4332	---	---	258.4332	338.5475	803.7274	11.325	26.88608	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	441.8747	---	---	141.3999	---	---	141.3999	185.2339	439.7537	6.196395	14.71053	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	829.7651	---	---	265.5248	---	---	265.5248	347.8375	825.7822	11.63577	27.62385	no
Total Cadmium	206.2723	---	---	66.00713	---	---	66.00713	86.46933	205.2822	2.89255	6.867045	no
Chromium III	4534.398	---	---	1451.007	---	---	1451.007	1900.82	4512.633	63.58573	150.9554	no
Chromium VI	18.12725	---	---	5.800719	---	---	5.800719	7.598941	18.04024	0.254198	0.603477	no
Total Copper	103.1783	---	---	33.01705	---	---	33.01705	43.25234	102.683	1.446866	3.434926	no
Total Lead	712.093	---	---	227.8697	---	---	227.8697	298.5094	708.6749	9.985658	23.70641	no
Total Mercury	5.745419	---	---	1.838534	---	---	1.838534	2.408479	5.717841	0.080568	0.191272	no
Total Nickel	6569.361	---	---	2102.195	---	---	2102.195	2753.876	6537.828	92.12194	218.7017	no
Total Zinc	773.9367	---	---	247.6598	---	---	247.6598	324.4343	770.2218	10.85289	25.76526	no
Total Cyanide	52.95574	---	---	16.94584	---	---	16.94584	22.19905	52.70155	0.742597	1.762959	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.00001	---	---	0.00001	0.00001	0.00001	0.000025	3.4E-007	8.2E-007	no
VOLATILE COMPOUNDS												
Benzene	2594.716	---	334.516	830.3091	---	334.516	334.516	334.516	796.148	11.19014	26.63254	no
Bromoform	3380.399	---	996.3808	1081.728	---	996.3808	996.3808	996.3808	2371.386	33.33067	79.32699	no
Bromodichloromethane	---	---	2205.388	---	---	2205.388	2205.388	2205.388	5248.824	73.77408	175.5823	no
Carbon Tetrachloride	3149.655	---	20.70523	1007.89	---	20.70523	20.70523	20.70523	49.27845	0.692626	1.64845	no
Chloroform	3334.25	---	2205.388	1066.96	---	2205.388	1066.96	1397.718	3318.246	46.75609	111.0011	no
Dibromochloromethane	---	---	2205.388	---	---	2205.388	2205.388	2205.388	5248.824	73.77408	175.5823	no
1,2-Dichloroethane	13613.89	---	461.9796	4356.446	---	461.9796	461.9796	461.9796	1099.512	15.45402	36.78057	no
1,1-Dichloroethylene	1338.315	---	432.655	428.2608	---	432.655	428.2608	561.0216	1331.891	18.76715	44.55407	no
1,3-Dichloropropylene	699.1542	---	75.8876	223.7293	---	75.8876	75.8876	75.8876	180.6125	2.538572	6.041802	no
Ethylbenzene	3691.903	---	70686.34	1181.409	---	70686.34	1181.409	1547.646	3674.182	51.77145	122.9078	no
Methyl Chloride	63454.59	---	---	20305.47	---	---	20305.47	26600.16	63150.01	889.8218	2112.478	no
Methylene Chloride	22266.79	---	7391.627	7125.374	---	7391.627	7125.374	9334.239	22159.91	312.2466	741.2876	no
1,1,2,2-Tetrachloro-ethane	1075.267	---	50.45144	344.0854	---	50.45144	50.45144	50.45144	120.0744	1.687688	4.016698	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10			1290		8.85	C
Toluene				10			1270		301940	
1,1,1-Trichloroethane				10			5280		173080	
1,1,2-Trichloroethane				10			1800		41.99	C
Trichloroethylene				10			3900		92.36	C
Vinyl Chloride				10					528.99	C
ACID COMPOUNDS										
2-Chlorophenol				10			258		401.84	
2,4-Dichlorophenol				10			202		793.8	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250		0.00054	C
Hexachlorobenzene				10					0.00073	C
Hexachlorabutadiene				10			5.1		0.35	C
PESTICIDES										
Aldrin				0.05			3		0.00014	C
Hexachlorocyclohexane (gamma BHC, Lindane)			0.0173	0.05	0		5.3		0.64	C
Chlordane				0.2			2.4		0.00059	C
4,4'-DDT				0.1			1.1		0.00059	C
4,4'-DDE				0.1			52.5			
4,4'-DDD				0.1			0.03			
Dieldrin				0.1			0.2374		0.00014	C
Endosulfan				0.1			0.22		1.99	
Endrin				0.1			0.0864		0.81	
Heptachlor				0.05			0.52		0.00021	C
Toxaphene				5			0.73		0.00075	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19			
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 004	(*20) WQBL Max 004	(*21) WQBL Avg 004	(*22) WQBL Max 004	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1488.299	---	41.45731	476.2555	---	41.45731	41.45731	41.45731	98.6684	1.386819	3.30063	no
Toluene	1465.224	---	766081.6	468.8717	---	766081.6	468.8717	614.222	1458.191	20.54679	48.77903	no
1,1,1-Trichloroethane	6091.641	---	439138.3	1949.325	---	439138.3	1949.325	2553.616	6062.401	85.42289	202.7979	no
1,1,2-Trichloroethane	2076.696	---	196.6997	664.5426	---	196.6997	196.6997	196.6997	468.1453	6.579948	15.66028	no
Trichloroethylene	4499.507	---	432.655	1439.842	---	432.655	432.655	432.655	1029.719	14.47306	34.44589	no
Vinyl Chloride	---	---	2478.023	---	---	2478.023	2478.023	2478.023	5897.694	82.89418	197.2881	no
ACID COMPOUNDS												
2-Chlorophenol	297.6597	---	1019.548	95.25111	---	1019.548	95.25111	124.779	296.2309	4.174073	9.909441	no
2,4-Dichlorophenol	233.0514	---	2014.028	74.57645	---	2014.028	74.57645	97.69515	231.9328	3.268073	7.758554	no
BASE NEUTRAL COMPOUNDS												
Benzidine	288.43	---	0.00253	92.29759	---	0.00253	0.00253	0.00253	0.00602	0.000085	0.000201	no
Hexachlorobenzene	---	---	0.00342	---	---	0.00342	0.00342	0.00342	0.008139	0.000114	0.000272	no
Hexachlorabutadiene	5.883971	---	1.639555	1.882871	---	1.639555	1.639555	1.639555	3.90214	0.054846	0.130533	no
PESTICIDES												
Aldrin	3.461159	---	0.000656	1.107571	---	0.000656	0.000656	0.000656	0.001561	0.000022	0.000052	no
Hexachlorocyclohexane (gamma BHC, Lindane)	6.114715	---	2.998043	1.956709	---	2.998043	1.956709	2.563289	6.085364	0.085746	0.203566	no
Chlordane	2.768928	---	0.002764	0.886057	---	0.002764	0.002764	0.002764	0.006578	0.000092	0.00022	no
4,4'-DDT	1.269092	---	0.002764	0.406109	---	0.002764	0.002764	0.002764	0.006578	0.000092	0.00022	no
4,4'-DDE	60.57029	---	---	19.38249	---	---	19.38249	25.39107	60.27955	0.849375	2.016456	no
4,4'-DDD	0.034612	---	---	0.011076	---	---	0.011076	0.014509	0.034445	0.000485	0.001152	no
Dieldrin	0.273893	---	0.000656	0.087646	---	0.000656	0.000656	0.000656	0.001561	0.000022	0.000052	no
Endosulfan	0.253818	---	5.049024	0.081222	---	5.049024	0.081222	0.106401	0.2526	0.003559	0.00845	no
Endrin	0.099681	---	2.055131	0.031898	---	2.055131	0.031898	0.041786	0.099203	0.001398	0.003319	no
Heptachlor	0.599934	---	0.000984	0.191979	---	0.000984	0.000984	0.000984	0.002341	0.000033	0.000078	no
Toxaphene	0.842215	---	0.003513	0.269509	---	0.003513	0.003513	0.003513	0.008362	0.000118	0.00028	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	21.92068	---	---	7.014617	---	---	7.014617	9.189148	21.81546	0.307393	0.729765	no
Ammonia	---	10148.79	---	---	5378.86	---	5378.86	7046.307	16728.26	235.7112	559.5892	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 08:33 AM

Software: Lotus 4.0 LA0005401, AI281

Revision date: 02/14/05

Water Quality Screen for ExxonMobil Chemical, BRCP Biomonitoring for 001 & 004

Input variables:

Receiving Water Characteristics:

Receiving Water Name=	Monte Sano Bayou
Critical flow (Qr) cfs=	9.54
Harm. mean/avg tidal cfs=	22.866
Drinking Water=1 HHNPCR=2	2
Marine, 1=y, 0=n	
Rec. Water Hardness=	148.46
Rec. Water TSS=	22.8
Fisch/Specific=1,Stream=0	
Diffuser Ratio=	

Effluent Characteristics:

Permittee=	ExxonMobil Chemical, BRCP Biomonitoring for 001 & 004
Permit Number=	LA0005401, AI281
Facility flow (Qef),MGD=	11.34576
Outfall Number =	001, 004
Eff. data, 2=lbs/day	2
MQL, 2=lbs/day	1
Effluent Hardness=	N/A
Effluent TSS=	N/A
WQBL ind. 0=y, 1=n	
Acute/Chr. ratio 0=n, 1=y	0
Aquatic,acute only1=y,0=n	1

Page Numbering/Labeling

Appendix	Appendix B-4
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3	
Pipe width, feet	
ZID plume dist., feet	
MZ plume dist., feet	
HHnc plume dist., feet	
HHc plume dist., feet	

Fischer/site specific dilutions:

F/specific ZID Dilution =	---
F/specific MZ Dilution =	---
F/specific HHnc Dilution=	---
F/specific HHc Dilution=	---

Dilution:

ZID Fs =	0.1
MZ Fs =	1
Critical Qr (MGD)=	6.165702
Harm. Mean (MGD)=	14.7783
ZID Dilution =	0.948457
MZ Dilution =	0.647905
HHnc Dilution=	0.647905
HHc Dilution=	0.434303
ZID Upstream =	0.054344
MZ Upstream =	0.543437
MZhhnc Upstream=	0.543437
MZhhc Upstream=	1.302539
ZID Hardness=	---
MZ Hardness=	---
ZID TSS=	---
MZ TSS=	---

Multipliers:

WLAa --> LTAa	0.32
WLAc --> LTAc	0.53
LTA a,c-->WQBL avg	1.31
LTA a,c-->WQBL max	3.11
LTA h --> WQBL max	2.38
WQBL-limit/report	2.13
WLA Fraction	1
WQBL Fraction	1

Conversions:

ug/L-->lbs/day Qef	0.094624
ug/L-->lbs/day Qeo	0
ug/L-->lbs/day Qr	0.079564
lbs/day-->ug/L Qeo	10.56818
lbs/day-->ug/L Qef	10.56818
diss-->tot 1=y0=n	1
Cu diss->totl=y0=n	1
cfs-->MGD	0.6463

Receiving Stream:

Default Hardness=	25
Default TSS=	10
99 Crit., 1=y, 0=n	1

Toxicity Dilution Series:

Biomonitoring dilution:	0.948457
Dilution Series Factor:	0.75

	Percent Effluent
Dilution No. 1	94.846%
Dilution No. 2	71.1343%
Dilution No. 3	53.3507%
Dilution No. 4	40.0130%
Dilution No. 5	30.0098%

Partition Coefficients; Dissolved-->Total

METALS	FW
Total Arsenic	2.116564
Total Cadmium	3.663965
Chromium III	5.182103
Chromium VI	1
Total Copper	3.344749
Total Lead	6.232931
Total Mercury	2.871919
Total Nickel	2.879784
Total Zinc	4.193673

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	48.79656	1.380553
Chromium III	758.4261	246.0256
Chromium VI	15.712	10.582
Copper	26.73772	17.21787
Lead	99.02481	3.858855
Mercury	1.734	0.012
Nickel	1977.255	219.5901
Zinc	159.9597	146.0674

Site Specific Multiplier Values:

CV =	---
N =	---
WLAa --> LTAa	---
WLAc --> LTAc	---
LTA a,c-->WQBL avg	---
LTA a,c-->WQBL max	---
LTA h --> WQBL max	---

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700			
3-Chlorophenol				10						
4-Chlorophenol				10			383			
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenocy-acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10		719.2085				
Total Cadmium				1		178.7889				
Chromium III				10		3930.242				
Chromium VI				10		15.712				
Total Copper				10		89.43097				
Total Lead				5		617.2148				
Total Mercury				0.2		4.979908				
Total Nickel				40		5694.069				
Total Zinc				20		670.8186				
Total Cyanide				20		45.9				
DIOXIN										
2,3,7,8 TCDD; dioxin			1.0E-005						2.2E-006	C
VOLATILE COMPOUNDS										
Benzene				10		2249			71.41	C
Bromoform				10		2930			212.7	C
Bromodichloromethane				10					470.79	C
Carbon Tetrachloride				10		2730			4.42	C
Chloroform				10		2890			470.79	C
Dibromochloromethane				10					470.79	C
1,2-Dichloroethane				10		11800			98.62	C
1,1-Dichloroethylene				10		1160			92.36	C
1,3-Dichloropropylene				10		606			29.91	
Ethylbenzene				10		3200			27860	
Methyl Chloride				50		55000				
Methylene Chloride				20		19300			1577.91	C
1,1,2,2-Tetrachloro-ethane				10		932			10.77	C

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 001, 004	(*20) WQBL Max 001, 004	(*21) WQBL Avg 001, 004	(*22) WQBL Max 001, 004	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	738.0406	---	---	236.173	---	---	236.173	309.3866	734.498	29.27529	69.50087	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	403.8136	---	---	129.2204	---	---	129.2204	169.2787	401.8753	16.01776	38.0269	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenocy-acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-oxy) propionic acid (2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	758.2929	---	---	242.6537	---	---	242.6537	317.8764	754.6531	30.07862	71.40802	no
Total Cadmium	188.5049	---	---	60.32157	---	---	60.32157	79.02126	187.6001	7.477279	17.7514	no
Chromium III	4143.826	---	---	1326.024	---	---	1326.024	1737.092	4123.936	164.3699	390.2218	no
Chromium VI	16.56585	---	---	5.301071	---	---	5.301071	6.944403	16.48633	0.657105	1.559997	no
Total Copper	94.29098	---	---	30.17311	---	---	30.17311	39.52678	93.83838	3.740168	8.879329	no
Total Lead	650.7565	---	---	208.2421	---	---	208.2421	272.7971	647.6329	25.81306	61.28138	no
Total Mercury	5.250535	---	---	1.680171	---	---	1.680171	2.201024	5.225332	0.208269	0.49444	no
Total Nickel	6003.506	---	---	1921.122	---	---	1921.122	2516.67	5974.689	238.1364	565.3468	no
Total Zinc	707.2733	---	---	226.3275	---	---	226.3275	296.489	703.8784	28.05487	66.60354	no
Total Cyanide	48.39437	---	---	15.4862	---	---	15.4862	20.28692	48.16208	1.919622	4.557271	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000005	---	---	0.000005	0.000005	0.000005	0.000012	4.8E-007	0.000001	no
VOLATILE COMPOUNDS												
Benzene	2371.219	---	164.4243	758.7901	---	164.4243	164.4243	164.4243	391.3299	15.55843	37.02906	no
Bromoform	3089.227	---	489.7501	988.5526	---	489.7501	489.7501	489.7501	1165.605	46.34193	110.2938	no
Bromodichloromethane	---	---	1084.012	---	---	1084.012	1084.012	1084.012	2579.949	102.5732	244.1242	no
Carbon Tetrachloride	2878.358	---	10.17722	921.0746	---	10.17722	10.17722	10.17722	24.22179	0.963006	2.291954	no
Chloroform	3047.053	---	1084.012	975.057	---	1084.012	975.057	1277.325	3032.427	120.8651	286.9393	no
Dibromochloromethane	---	---	1084.012	---	---	1084.012	1084.012	1084.012	2579.949	102.5732	244.1242	no
1,2-Dichloroethane	12441.26	---	227.0764	3981.202	---	227.0764	227.0764	227.0764	540.4418	21.4868	51.13857	no
1,1-Dichloroethylene	1223.039	---	212.6625	391.3724	---	212.6625	212.6625	212.6625	506.1368	20.1229	47.8925	no
1,3-Dichloropropylene	638.9323	---	46.16419	204.4583	---	46.16419	46.16419	46.16419	109.8708	4.368224	10.39637	no
Ethylbenzene	3373.9	---	43000.15	1079.648	---	43000.15	1079.648	1414.339	3357.705	133.8299	317.7183	no
Methyl Chloride	57988.9	---	---	18556.45	---	---	18556.45	24308.95	57710.55	2300.201	5460.783	no
Methylene Chloride	20348.83	---	3633.199	6511.626	---	3633.199	3633.199	3633.199	8647.015	343.7866	818.212	no
1,1,2,2-Tetrachloro-ethane	982.6483	---	24.79835	314.4475	---	24.79835	24.79835	24.79835	59.02006	2.34651	5.584693	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL ug/L	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute FW ug/L	(*9) Chronic FW ug/L	(*10) HHNPCR ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene				10			1290		8.85	C
Toluene				10			1270		301940	
1,1,1-Trichloroethane				10			5280		173080	
1,1,2-Trichloroethane				10			1800		41.99	C
Trichloroethylene				10			3900		92.36	C
Vinyl Chloride				10					528.99	C
ACID COMPOUNDS										
2-Chlorophenol				10			258		401.84	
2,4-Dichlorophenol				10			202		793.8	
BASE NEUTRAL COMPOUNDS										
Benzidine				50			250		0.00054	C
Hexachlorobenzene				10					0.00073	C
Hexachlorabutadiene				10			5.1		0.35	C
PESTICIDES										
Aldrin				0.05			3		0.00014	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.05			5.3		0.64	C
Chlordane				0.2			2.4		0.00059	C
4,4'-DDT				0.1			1.1		0.00059	C
4,4'-DDE				0.1			52.5			
4,4'-DDD				0.1			0.03			
Dieldrin				0.1			0.2374		0.00014	C
Endosulfan				0.1			0.22		1.99	
Endrin				0.1			0.0864		0.81	
Heptachlor				0.05			0.52		0.00021	C
Toxaphene				5			0.73		0.00075	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							19			
Ammonia								4000		
Chlorides										
Sulfates										
TDS										

(*1) Toxic Parameters	(*12) WLAa Acute	(*13) WLAc Chronic	(*14) WLAh HHNDW	(*15) LTAa Acute	(*16) LTAc Chronic	(*17) LTAh HHNDW	(*18) Limiting A,C,HH	(*19) WQBL Avg 001, 004	(*20) WQBL Max 001, 004	(*21) WQBL Avg 001, 004	(*22) WQBL Max 001, 004	(*23) Need WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	1360.103	---	20.37747	435.2331	---	20.37747	20.37747	20.37747	48.49838	1.92819	4.589093	no
Toluene	1339.016	---	466025.3	428.4853	---	466025.3	428.4853	561.3157	1332.589	53.11373	126.0944	no
1,1,1-Trichloroethane	5566.935	---	267138	1781.419	---	267138	1781.419	2333.659	5540.213	220.8193	524.2351	no
1,1,2-Trichloroethane	1897.819	---	96.68362	607.302	---	96.68362	96.68362	96.68362	230.107	9.148556	21.77356	no
Trichloroethylene	4111.94	---	212.6625	1315.821	---	212.6625	212.6625	212.6625	506.1368	20.1229	47.8925	no
Vinyl Chloride	---	---	1218.02	---	---	1218.02	1218.02	1218.02	2898.888	115.2535	274.3033	no
ACID COMPOUNDS												
2-Chlorophenol	272.0207	---	620.2146	87.04661	---	620.2146	87.04661	114.0311	270.715	10.79003	25.61604	no
2,4-Dichlorophenol	212.9774	---	1225.18	68.15277	---	1225.18	68.15277	89.28013	211.9551	8.448011	20.05597	no
BASE NEUTRAL COMPOUNDS												
Benzidine	263.5859	---	0.001243	84.34749	---	0.001243	0.001243	0.001243	0.002959	0.000118	0.00028	no
Hexachlorobenzene	---	---	0.001681	---	---	0.001681	0.001681	0.001681	0.004	0.000159	0.000379	no
Hexachlorabutadiene	5.377153	---	0.805889	1.720689	---	0.805889	0.805889	0.805889	1.918015	0.076256	0.18149	no
PESTICIDES												
Aldrin	3.163031	---	0.000322	1.01217	---	0.000322	0.000322	0.000322	0.000767	0.000031	0.000073	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5.588021	---	1.473625	1.788167	---	1.473625	1.473625	1.473625	3.507228	0.13944	0.331867	no
Chlordane	2.530425	---	0.001358	0.809736	---	0.001358	0.001358	0.001358	0.003233	0.000129	0.000306	no
4,4'-DDT	1.159778	---	0.001358	0.371129	---	0.001358	0.001358	0.001358	0.003233	0.000129	0.000306	no
4,4'-DDE	55.35304	---	---	17.71297	---	---	17.71297	23.204	55.08735	2.195646	5.212565	no
4,4'-DDD	0.03163	---	---	0.010122	---	---	0.010122	0.013259	0.031478	0.001255	0.002979	no
Dieldrin	0.250301	---	0.000322	0.080096	---	0.000322	0.000322	0.000322	0.000767	0.000031	0.000073	no
Endosulfan	0.231956	---	3.071439	0.074226	---	3.071439	0.074226	0.097236	0.230842	0.009201	0.021843	no
Endrin	0.091095	---	1.250184	0.02915	---	1.250184	0.02915	0.038187	0.090658	0.003613	0.008578	no
Heptachlor	0.548259	---	0.000484	0.175443	---	0.000484	0.000484	0.000484	0.001151	0.000046	0.000109	no
Toxaphene	0.769671	---	0.001727	0.246295	---	0.001727	0.001727	0.001727	0.00411	0.000163	0.000389	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	20.03253	---	---	6.410409	---	---	6.410409	8.397636	19.93637	0.794615	1.886452	no
Ammonia	---	6173.747	---	---	3272.086	---	3272.086	4286.432	10176.19	405.5978	962.9078	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

APPENDIX B-5 LA0005401, AI No. 286

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Monte Sano Bayou
Critical Flow, Qrc (cfs): 4.88 (Outfall 003); 9.540 (Outfalls 001 & 004)
Harmonic Mean Flow, Qrh (cfs): 22.866
Segment No.: 070504
Receiving Stream Hardness (mg/L): 148.46
Receiving Stream TSS (mg/L): 22.8
MZ Stream Factor, Fs: 1
Plume distance, Pf: N/A

Effluent Characteristics:

Company: ExxonMobil Chemical Company
Facility flow, Qe (MGD): OF 001 - 7.335; OF 003 - 5.403; OF 004 - 4.011
Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0005401

Variable Definition:
Qrc, critical flow of receiving stream, cfs
Qrh, harmonic mean flow of the receiving stream, cfs
Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
Pw = Pipe width or canal width in feet
Qe, total facility flow , MGD
Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
Cu, ambient concentration, ug/L
Cr, numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 \times Fs + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf}$$

$$WLA = \frac{(Cr-Cu)\ Pf}{(2.8)\ Pw\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{1/2}}{2.38\ Pw^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrc \times 0.6463 \times Cu)}{Qe}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{Qe}{(Qrh \times 0.6463 + Qe)}$$

$$WLA\ a,c,h = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrh \times 0.6463 \times Cu)}{Qe}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{*}}{(2.8)\ Pw\ \pi^{1/2}}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{1/2*}}{2.38\ Pw^{1/2}}$$

* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:
LTAa = WLAa X 0.32
LTAc = WLAc X 0.53
LTAh = WLAh

WQBL Calculations:
Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:
Daily Maximum = Min(LTAa, LTAc) X 3.11
Monthly Average = Min(LTAc, LTAc) X 1.31

If human health LTA is more limiting:
Daily Maximum = LTAh X 2.38
Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day): (ug/L) X 1/1000 X (flow, MGD) X 8.34 = lbs/day

$$\text{concentration(ug/L)}: \frac{\text{lbs/day}}{\text{(flow, MGD) X 8.34 X 1/1000}} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

(*1) Parameter being screened.
(*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
(*3) Monthly average effluent or technolgy value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
(*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present

on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

(*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.

(*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) - (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.

(*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

Metal	Formula
Cadmium	$e^{(1.1280[\ln(hardness)] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(hardness)] + 3.6880)}$
Copper	$e^{(0.9422[\ln(hardness)] - 1.3884)}$
Lead	$e^{(1.2730[\ln(hardness)] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(hardness)] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(hardness)] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

Metal	Multiplier
Arsenic	$1 + 0.48 \times TSS^{-0.73} \times TSS$
Cadmium	$1 + 4.00 \times TSS^{-1.13} \times TSS$
Chromium III	$1 + 3.36 \times TSS^{-0.93} \times TSS$
Copper	$1 + 1.04 \times TSS^{-0.74} \times TSS$
Lead	$1 + 2.80 \times TSS^{-0.80} \times TSS$
Mercury	$1 + 2.90 \times TSS^{-1.14} \times TSS$
Nickel	$1 + 0.49 \times TSS^{-0.57} \times TSS$
Zinc	$1 + 1.25 \times TSS^{-0.70} \times TSS$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

Metal	Multiplier

Copper	$1 + (10^{4.86} \times TSS^{-0.72} \times TSS) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times TSS^{-0.85} \times TSS) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times TSS^{-0.52} \times TSS) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

(*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.
Hardness dependent criteria:

Metal	Formula
Cadmium	$e^{(0.7852[\ln(hardness)] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(hardness)] + 0.7614)}$
Copper	$e^{(0.8545[\ln(hardness)] - 1.3860)}$
Lead	$e^{(1.2730[\ln(hardness)] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(hardness)] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(hardness)] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

(*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primarry contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.

(*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.

(*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L.
Dilution WLAa formulas for streams:

$$WLAa = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAa formulas for static water bodies:
WLAa = (Cr-Cu)/Dilution Factor)
Cr represents aquatic acute numerical criteria from column (*8).
If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L.

Dilution WLAc formula:

$$WLAc = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAc formulas for static water bodies:

WLAc = (Cr-Cu)/Dilution Factor)

Cr represents aquatic chronic numerical criteria from column (*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$WLAh = (Cr/\text{Dilution Factor}) - \frac{(Fs \times Qrc,Qrh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:

WLAh = (Cr-Cu)/Dilution Factor)

Cr represents human health numerical criteria from column (*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*15) Long Term Average for aquatic numerical criteria (LTAa). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLAa X 0.32 = LTAa.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLAc X 0.53 = LTAc.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLAc X 1 = LTAh.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.

(*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($LTA_{limiting\ aquatic}$ X 1.31 = $WQBL_{monthly\ average}$). If human health criteria was the most limiting criteria then LTAh = $WQBL_{monthly\ average}$. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.

(*20) End of pipe Water Quality Based Limit (WQBL) daily maxium in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 3.11 = $WQBL_{daily\ max}$). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic}$ X 2.38 = $WQBL_{daily\ max}$). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.

(*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.

(*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.

(*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

Appendix C

LAD000812818

OUTFALL NUMBER 001

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued From Page 3 of Form 2C)

Part A

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	(2) MASS	c. LONG TERM AVERAGE (1) CONC.	(2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONC.	b. MASS	4. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	257	9,676	97	4,075	< 31	< 1,504	1,138	mg/L	lb/d	NA	NA	NA
b. Chemical Oxygen Demand (COD)	146	9,280	122	6,701	< 112	< 6,165	12	mg/L	lb/d	NA	NA	NA
c. Total Organic Carbon (TOC)	195	7,762	75	3,546	30	1,486	1,127	mg/L	lb/d	NA	NA	NA
d. Total Suspended Solids (TSS)	174	9,346	73	3,580	39	2,012	1,127	mg/L	lb/d	NA	NA	NA
e. Ammonia (as N)	3.5	194.7	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
f. Flow	10.365	NA	7.335	NA	6.060	NA	Cont.	MGD	NA	NA	NA	NA
g. Temperature (summer)	NA	NA	NA	NA	NA	NA	0	NA		NA	NA	NA
h. Temperature (winter)	30.0	NA	NA	NA	NA	NA	1	°C		NA	NA	NA
i. pH	MINIMUM 6.7	MAXIMUM 8.7					1	STANDARD UNITS		NA	NA	NA

Part B

1. POLLUTANT AND CAS NO.	2 a. BELIEVED PRESENT	2 b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	(2) MASS	c. LONG TERM AVERAGE (1) CONC.	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		3.00	166.88	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
b. Chlorine, Total Residual		X	< 0.05	< 3.55	< 0.05	< 2.88	< 0.05	< 2.88	0	mg/L	lb/d	NA	NA	NA
c. Color (True/Apparent)	X		100	NA	NA	NA	NA	NA	1	APHA	NA	NA	NA	NA
d. Fecal Coliform		X	< 10	NA	NA	NA	NA	NA	1	col/100mL	NA	NA	NA	NA
e. Fluoride (16984-48-8)		X	< 0.20	< 11.13	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
f. Nitrate-Nitrite (as N)	X		2.00	111.26	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
g. Nitrogen, Total Organic (as N)		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
h. Oil & Grease	X		39.40	963.00	15.00	681.00	< 5.90	< 285.98	1,125	mg/L	lb/d	NA	NA	NA
i. Phosphorus (as P), Total (7723-14-0)	X		2.00	111.26	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
j. Radioactivity-(1) alpha, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
j. Radioactivity-(2) beta, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
j. Radioactivity-(3) Radium, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
j. Radioactivity-(4) Radium 226, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
k. Sulfate (as SO_4) (14808-79-8)	X		1090.00	60634.30	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
l. Sulfide (as S)		X	< 0.10	< 5.56	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
m. Sulfite (as SO_3) (14265-45-3)		X	< 2.00	< 111.26	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
n. Surfactants	X		0.03	1.67	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
o. Aluminum, Total (7429-90-5)	X		1.40	77.89	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
p. Barium, Total (7440-39-3)	X		0.32	17.80	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
q. Boron, Total (7440-42-8)	X		1.00	55.63	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
r. Cobalt, Total (7440-48-4)	X		0.10	5.56	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
s. Iron, Total (7439-89-6)	X		0.16	8.90	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
t. Magnesium, Total (7439-95-4)	X		3.30	183.57	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
u. Molybdenum, Total (7439-98-7)		X	< 0.020	< 1.11	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
v. Manganese, Total (7439-96-5)	X		0.031	1.72	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
w. Tin, Total (7440-31-5)		X	< 0.050	< 2.78	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
x. Titanium, Total (7440-32-6)		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA

LAD000812818

OUTFALL NUMBER 001

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. (2) MASS	b. NO. OF ANALYSES
Part C-Metals, Cyanide, and Total Phenols															
1M. Antimony, Total (7440-36-0)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
2M. Arsenic, Total (7440-38-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
3M. Beryllium, Total (7440-41-7)	X		X	< 0.002	< 0.111	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
4M. Cadmium, Total (7440-43-9)	X		X	< 0.001	< 0.056	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
5M. Chromium, Total (7440-47-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6M. Copper, Total (7440-50-8)	X	X		0.180	12.435	0.055	3.550	< 0.013	< 0.668	162	mg/L	lb/d	NA	NA	NA
7M. Lead, Total (7439-92-1)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8M. Mercury, Total (7439-97-6)	X	X		0.0002	0.0111	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9M. Nickel, Total (7440-02-0)	X	X		0.230	13.775	0.102	5.584	0.030	1.497	162	mg/L	lb/d	NA	NA	NA
10M. Selenium, Total (7782-49-2)	X	X		0.008	0.445	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
11M. Silver, Total (7440-22-4)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
12M. Thallium, Total (7440-28-0)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
13M. Zinc, Total (7440-66-6)	X	X		0.400	22.782	0.131	7.322	< 0.040	< 2.040	162	mg/L	lb/d	NA	NA	NA
14M. Cyanide, Total (57-12-5)	X	X		0.053	2.948	0.053	2.948	< 0.018	< 1.045	7	mg/L	lb/d	NA	NA	NA
15M. Phenols, Total	X	X		0.020	1.113	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Dioxin															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
Part C-Volatile Compounds															
1V. Acrolein (107-02-8)	X		X	< 0.020	< 1.113	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
2V. Acrylonitrile (107-13-1)	X		X	< 0.020	< 1.113	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
3V. Benzene (71-43-2)	X	X		0.015	0.849	< 0.006	< 0.380	< 0.005	< 0.260	162	mg/L	lb/d	NA	NA	NA
4V. Bis (Chloromethyl) Ether (542-88-1)			X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
5V. Bromoform (75-25-2)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6V. Carbon Tetrachloride (56-23-5)	X		X	< 0.005	< 0.351	< 0.005	< 0.312	< 0.005	< 0.251	162	mg/L	lb/d	NA	NA	NA
7V. Chlorobenzene (108-90-7)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8V. Chlorodibromomethane (124-48-1)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9V. Chloroethane (75-00-3)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10V. 2-Chloroethylvinyl Ether (110-75-8) (6)	X		X	< 0.020	< 1.112	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
11V. Chloroform (67-66-3)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
12V. Dichlorobromomethane (75-27-4)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
13V. Dichlorodifluoromethane (75-71-8)			X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
14V. 1,1-Dichloroethane (75-34-3)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
15V. 1,2-Dichloroethane (107-06-2)	X	X		0.009	0.532	< 0.006	< 0.312	< 0.005	< 0.252	162	mg/L	lb/d	NA	NA	NA
16V. 1,1-Dichloroethylene (75-35-4)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
17V. 1,2-Dichloropropane (78-87-5)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
18V. 1,3-Dichloropropylene (542-75-6)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
19V. Ethylbenzene (100-41-4)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
20V. Methyl Bromide (74-83-9)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
21V. Methyl Chloride (74-87-3)	X	X		0.087	4.029	< 0.025	< 1.160	< 0.010	< 0.572	162	mg/L	lb/d	NA	NA	NA
22V. Methylene Chloride (75-09-2)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA

LA0000812818

OUTFALL NUMBER 001

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. LONG TERM AVERAGE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	4. UNITS b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
24V. Tetrachloroethylene (127-18-4)	X		X	< 0.005	< 0.351	< 0.005	< 0.312	< 0.005	< 0.251	162	mg/L	lb/d	NA	NA	NA
25V. Toluene (108-88-3)	X	X		0.087	3.983	< 0.025	< 1.131	< 0.006	< 0.302	162	mg/L	lb/d	NA	NA	NA
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
27V. 1,1,1-Trichloroethane (71-55-6)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
28V. 1,1,2-Trichloroethane (79-00-5)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
29V. Trichloroethylene (79-01-6)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
30V. Trichlorofluoromethane (75-69-4)	X		X	< 0.005	< 0.278	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
31V. Vinyl Chloride (75-01-4)	X		X	< 0.010	< 0.703	< 0.010	< 0.624	< 0.010	< 0.500	162	mg/L	lb/d	NA	NA	NA
Part C-Acid Compounds															
1A. 2-Chlorophenol (95-57-8)	X		X	< 0.010	< 0.703	< 0.010	< 0.624	< 0.010	< 0.529	74	mg/L	lb/d	NA	NA	NA
2A. 2,4-Dichlorophenol (120-83-2)	X		X	< 0.010	< 0.704	< 0.010	< 0.624	< 0.010	< 0.529	74	mg/L	lb/d	NA	NA	NA
3A. 2,4-Dimethylphenol (105-67-9)	X	X		0.470	21.945	< 0.304	< 13.571	< 0.029	< 1.415	162	mg/L	lb/d	NA	NA	NA
4A. 4,6-Dinitro-o-Cresol (534-52-1)	X		X	< 0.010	< 0.706	< 0.010	< 0.624	< 0.010	< 0.529	74	mg/L	lb/d	NA	NA	NA
5A. 2,4-Dinitrophenol (51-28-5)	X		X	< 0.025	< 1.756	< 0.025	< 1.559	< 0.025	< 1.324	74	mg/L	lb/d	NA	NA	NA
6A. 2-Nitrophenol (88-75-5)	X		X	< 0.025	< 1.757	< 0.025	< 1.559	< 0.025	< 1.313	74	mg/L	lb/d	NA	NA	NA
7A. 4-Nitrophenol (100-02-7)	X		X	< 0.025	< 1.758	< 0.025	< 1.559	< 0.025	< 1.324	74	mg/L	lb/d	NA	NA	NA
8A. p-Chloro-m-Cresol (59-50-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9A. Pentachlorophenol (87-86-5)	X		X	< 0.025	< 1.391	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10A. Phenol (108-95-2)	X		X	< 0.010	< 0.710	< 0.010	< 0.624	< 0.010	< 0.529	74	mg/L	lb/d	NA	NA	NA
11A. 2,4,6-Trichlorophenol (88-06-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Part C-Base/Neutral Compounds															
1B. Acenaphthene (83-32-9)	X		X	< 0.050	< 2.267	< 0.020	< 0.929	< 0.010	< 0.521	162	mg/L	lb/d	NA	NA	NA
2B. Acenaphthylene (208-96-8)	X		X	< 0.050	< 2.267	< 0.020	< 0.929	< 0.010	< 0.513	162	mg/L	lb/d	NA	NA	NA
3B. Anthracene (120-12-7)	X		X	< 0.050	< 2.267	< 0.020	< 0.930	< 0.010	< 0.513	162	mg/L	lb/d	NA	NA	NA
4B. Benzidine (92-87-5)	X		X	< 0.030	< 1.669	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
5B. Benzo (a) Anthracene (56-55-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6B. Benzo (a) Pyrene (50-32-8)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
7B. 3,4-Benzofluoranthene (205-99-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8B. Benzo (g,h,i) Perylene (191-24-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9B. Benzo (k) Fluoranthene (207-08-9)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10B. Bis(2-Chloroethoxy)Methane(111-91-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
11B. Bis (2-Chloroethyl) Ether (111-44-4)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
12B. Bis (2-Chloroisopropyl) Ether (102-60-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
15B. Butyl Benzyl Phthalate (85-68-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
16B. 2-Chloronaphthalene (91-58-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
17B. 4-Chlorophenyl Phenyl Ether(7005-72-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
18B. Chrysene (218-01-9)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
19B. Dibenzo (a,h) Anthracene (53-70-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
20B. 1,2-Dichlorobenzene (95-50-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
21B. 1,3-Dichlorobenzene (541-73-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA

LAD000612518

OUTFALL NUMBER 001

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. (2) MASS	b. NO. OF ANALYSES
22B. 1,4-Dichlorobenzene (106-46-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
23B. 3,3-Dichlorobenzidine (91-94-1)	X		X	< 0.020	< 1.113	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
24B. Diethyl Phthalate (84-66-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
25B. Dimethyl Phthalate (131-11-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
26B. Di-n-Butyl Phthalate (84-74-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
27B. 2,4-Dinitrotoluene (121-14-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
28B. 2,6-Dinitrotoluene (606-20-2)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
29B. Di-n-Octyl Phthalate (117-84-0)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
30B. 1,2-Diphenylhydrazine (122-66-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
31B. Fluoranthene (206-44-0)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
32B. Fluorene (86-73-7)	X		X	< 0.050	< 2.267	< 0.020	< 0.931	< 0.010	< 0.513	162	mg/L	lb/d	NA	NA	NA
33B. Hexachlorobenzene (118-74-1)	X	X		0.075	3.679	< 0.026	< 1.229	< 0.011	< 0.532	162	mg/L	lb/d	NA	NA	NA
34B. Hexachlorobutadiene (87-68-3)	X		X	< 0.050	< 2.267	< 0.020	< 0.929	< 0.010	< 0.513	162	mg/L	lb/d	NA	NA	NA
35B. Hexachlorocyclopentadiene (77-47-4)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
36B. Hexachloroethane (67-72-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
38B. Isophorone (78-59-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
39B. Naphthalene (91-20-3)	X	X	-	0.320	18.106	< 0.090	< 4.990	< 0.012	< 0.634	162	mg/L	lb/d	NA	NA	NA
40B. Nitrobenzene (98-95-3)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
41B. N-Nitrosodimethylamine (62-75-9)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
42B. N-Nitrosodi-n-Propylamine (621-64-7)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
43B. N-Nitrosodiphenylamine (86-30-6)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
44B. Phenanthrene (85-01-8)	X		X	< 0.050	< 2.267	< 0.020	< 0.932	< 0.010	< 0.514	162	mg/L	lb/d	NA	NA	NA
45B. Pyrene (129-00-0)	X		X	< 0.050	< 2.267	< 0.020	< 0.933	< 0.010	< 0.513	162	mg/L	lb/d	NA	NA	NA
46B. 1,2,4-Trichlorobenzene (120-82-1)	X		X	< 0.010	< 0.556	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Part C-Pesticides															
1P. Aldrin (309-00-2)	X		X	< 0.050	< 0.0028	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
2P. alpha-BHC (319-84-6)	X		X	< 0.050	< 0.0028	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
3P. beta-BHC (319-85-7) (6)	X		X	< 0.500	< 0.0278	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
4P. gamma-BHC (58-89-9)	X	X		0.071	0.0039	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
5P. delta-BHC (319-86-8)	X		X	< 0.050	< 0.0028	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
6P. Chlordane (57-74-9) (6)	X		X	< 0.500	< 0.0278	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
7P. 4,4-DDT (50-29-3)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
8P. 4,4-DDE (72-55-9)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
9P. 4,4-DDD (72-54-8)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
10P. Dieldrin (60-57-1)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
11P. alpha-Endosulfan (115-29-7)	X		X	< 0.050	< 0.0028	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
12P. beta-Endosulfan (115-29-7)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
13P. Endosulfan Sulfate (1031-07-8)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
14P. Endrin (72-20-8)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
15P. Endrin Aldehyde (7421-93-4)	X		X	< 0.100	< 0.0056	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
16P. Heptachlor (76-44-8)	X		X	< 0.050	< 0.0028	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA

LAD000812818

OUTFALL NUMBER 001

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. LONG TERM AVERAGE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	4. UNITS b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
17P. Heptachlor Epoxide (1024-57-3)	X		X	< 0.050	< 0.0028	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
18P. PCB-1242 (53469-21-9)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
19P. PCB-1254 (11097-69-1)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
20P. PCB-1221 (11104-28-2)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
21P. PCB-1232 (11141-16-5)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
22P. PCB-1248 (12672-29-6)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
23P. PCB-1260 (11096-82-5)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
24P. PCB-1016 (12674-11-2)	X		X	< 1.000	< 0.0556	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
25P. Toxaphene (8001-35-2)	X		X	< 5.000	< 0.2781	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA

NOTES:

(1) A 24-hour composite sampling event was conducted on 11/25/03 for all parameters indicated above, with the exception of temperature, pH, oil and grease, total cyanide, total phenols, and total residual chlorine, which were collected by grab sample

(2) Historical data from 10/1/00 through 10/31/03 were used for those parameters with multiple number of analyses. Additional data from 12/03 were used for BOD and COD, and from 6/04 for total residual chlorine.

(3) A flow rate of 6.67 MGD was used to convert the sampling data on 11/25/03 from concentration to mass, if applicable.

(4) All analytical results reported with a "less than" sign (<) were not detected in the sample at the analytical method detection limit (MDL).

(5) NA - testing not required, not applicable or not available.

(6) Analyses did not meet the USEPA minimum quantification level (MQL), but nevertheless were not detected at the laboratory MDL.

LAD000812818

OUTFALL NUMBER 004

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued From Page 3 of Form 2C)

Part A

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	(2) MASS	c. LONG TERM AVERAGE (1) CONC.	(2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONC.	b. MASS	4. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	< 6.0	< 104.1	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
b. Chemical Oxygen Demand (COD)	20.0	346.9	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
c. Total Organic Carbon (TOC)	1.6	27.8	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
d. Total Suspended Solids (TSS)	5.0	86.7	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
e. Ammonia (as N)	< 1.0	< 17.3	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
f. Flow	6.705	NA	4.011	NA	2.682	NA	Cont	MGD	NA	NA	NA	NA
g. Temperature (summer)	NA	NA	NA	NA	NA	NA	0	NA		NA	NA	NA
h. Temperature (winter)	20.8	NA	NA	NA	NA	NA	1	°C		NA	NA	NA
i. pH	MINIMUM 7.7	MAXIMUM 7.1					1	STANDARD UNITS		NA	NA	NA

Part B

1. POLLUTANT AND CAS NO.	2 a. BELIEVED PRESENT	2 b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	(2) MASS	c. LONG TERM AVERAGE (1) CONC.	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)	X		4.60	79.80	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
b. Chlorine, Total Residual	X		0.20	3.47	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
c. Color (True/Apparent)	X		40	NA	NA	NA	NA	NA	1	APHA	NA	NA	NA	NA
d. Fecal Coliform		X	< 1	NA	NA	NA	NA	NA	1	col/100mL	NA	NA	NA	NA
e. Fluoride (16984-48-8)	X		0.20	3.47	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
f. Nitrate-Nitrite (as N)	X		1.70	29.49	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
g. Nitrogen, Total Organic (as N)		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
h. Oil & Grease	X		1.80	31.22	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
i. Phosphorus (as P), Total (7723-14-0)	X		1.20	20.82	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
j. Radioactivity-(1) alpha, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
k. Radioactivity-(2) beta, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
l. Radioactivity-(3) Radium, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
m. Radioactivity-(4) Radium 226, Total		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
n. Sulfate (as SO_4) (14808-79-8)	X		178	3087.8	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
o. Sulfide (as S)		X	< 0.10	< 1.73	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
p. Sulfite (as SO_3) (14265-45-3)		X	< 2.00	< 34.69	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
q. Surfactants		X	< 0.025	< 0.434	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
r. Aluminum, Total (7429-90-5)		X	< 0.20	< 3.47	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
s. Barium, Total (7440-39-3)	X		0.078	1.353	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
t. Boron, Total (7440-42-8)	X		0.100	1.735	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
u. Cobalt, Total (7440-48-4)		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
v. Iron, Total (7439-89-6)	X		0.350	6.072	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
w. Magnesium, Total (7439-95-4)	X		17.800	308.790	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
x. Molybdenum, Total (7439-98-7)	X		0.040	0.694	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
y. Manganese, Total (7439-96-5)	X		0.042	0.729	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
z. Tin, Total (7440-31-5)		X	< 0.05	< 0.87	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
aa. Titanium, Total (7440-32-6)		X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA

LAD000812818

OUTFALL NUMBER 004

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. LONG TERM AVERAGE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	4. UNITS b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
Part C-Metals, Cyanide, and Total Phenols															
1M. Antimony, Total (7440-36-0)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
2M. Arsenic, Total (7440-38-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
3M. Beryllium, Total (7440-41-7)	X		X	< 0.002	< 0.035	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
4M. Cadmium, Total (7440-43-9)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
5M. Chromium, Total (7440-47-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6M. Copper, Total (7440-50-8)	X	X		0.013	0.226	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
7M. Lead, Total (7439-92-1)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8M. Mercury, Total (7439-97-6)	X		X	< 0.0002	< 0.0035	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9M. Nickel, Total (7440-02-0)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10M. Selenium, Total (7782-49-2)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
11M. Silver, Total (7440-22-4)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
12M. Thallium, Total (7440-28-0)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
13M. Zinc, Total (7440-66-6)	X	X		0.017	0.2949	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
14M. Cyanide, Total (57-12-5)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
15M. Phenols, Total	X		X	< 0.002	< 0.0347	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Dioxin															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
Part C-Volatile Compounds															
1V. Acrolein (107-02-8)	X		X	< 0.020	< 0.347	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
2V. Acrylonitrile (107-13-1)	X		X	< 0.020	< 0.347	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
3V. Benzene (71-43-2)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
4V. Bis (Chloromethyl) Ether (542-88-1)			X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
5V. Bromoform (75-25-2)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6V. Carbon Tetrachloride (56-23-5)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
7V. Chlorobenzene (108-90-7)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8V. Chlorodibromomethane (124-48-1)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9V. Chloroethane (75-00-3)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10V. 2-Chloroethylvinyl Ether (110-75-8) (6)	X		X	< 0.020	< 0.347	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
11V. Chloroform (67-66-3)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
12V. Dichlorobromomethane (75-27-4)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
13V. Dichlorodifluoromethane (75-71-8)			X	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
14V. 1,1-Dichloroethane (75-34-3)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
15V. 1,2-Dichloroethane (107-06-2)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
16M. 1,1-Dichloroethylene (75-35-4)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
17V. 1,2-Dichloropropane (78-87-5)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
18V. 1,3-Dichloropropylene (542-75-6)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
19V. Ethylbenzene (100-41-4)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
20V. Methyl Bromide (74-83-9)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
21V. Methyl Chloride (74-87-3)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
22V. Methylene Chloride (75-09-2)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA

LAD000812818

OUTFALL NUMBER 004

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. LONG TERM AVERAGE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	4. UNITS b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
24V. Tetrachloroethylene (127-18-4)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
25V. Toluene (108-88-3)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
27V. 1,1,1-Trichloroethane (71-55-6)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
28V. 1,1,2-Trichloroethane (79-00-5)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
29V. Trichloroethylene (79-01-6)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
30V. Trichlorofluoromethane (75-69-4)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
31V. Vinyl Chloride (75-01-4)	X		X	< 0.005	< 0.087	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Part C-Acid Compounds															
1A. 2-Chlorophenol (95-57-8)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
2A. 2,4-Dichlorophenol (120-83-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
3A. 2,4-Dimethylphenol (105-67-9)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
4A. 4,6-Dinitro-o-Cresol (534-52-1)	X		X	< 0.025	< 0.434	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
5A. 2,4-Dinitrophenol (51-28-5)	X		X	< 0.025	< 0.434	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6A. 2-Nitrophenol (88-75-5)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
7A. 4-Nitrophenol (100-02-7)	X		X	< 0.025	< 0.434	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8A. p-Chloro-m-Cresol (59-50-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9A. Pentachlorophenol (87-86-5)	X		X	< 0.025	< 0.434	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10A. Phenol (108-95-2)	X	X		0.556	17.800	0.353	9.600	< 0.013	< 0.467	112	mg/L	lb/d	NA	NA	NA
11A. 2,4,6-Trichlorophenol (88-06-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Part C-Base/Neutral Compounds															
1B. Acenaphthene (83-32-9)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
2B. Acenaphthylene (208-96-8)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
3B. Anthracene (120-12-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
4B. Benzidine (92-87-5)	X		X	< 0.030	< 0.520	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
5B. Benzo (a) Anthracene (56-55-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
6B. Benzo (a) Pyrene (50-32-8)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
7B. 3,4-Benzofluoranthene (205-99-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
8B. Benzo (g,h,i) Perylene (191-24-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
9B. Benzo (k) Fluoranthene (207-08-9)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
10B. Bis(2-Chloroethoxy)Methane (111-91-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
11B. Bis (2-Chloroethyl) Ether (111-44-4)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
12B. Bis (2-Chloroisopropyl) Ether (102-60-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
15B. Butyl Benzyl Phthalate (85-68-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
16B. 2-Chloronaphthalene (91-58-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
18B. Chrysene (218-01-9)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
19B. Dibenzo (a,h) Anthracene (53-70-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
20B. 1,2-Dichlorobenzene (95-50-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
21B. 1,3-Dichlorobenzene (541-73-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA

LAD000812818

OUTFALL NUMBER 004

1. POLLUTANT AND CAS NUMBER	2a. TESTING REQUIRED	2b. BELIEVED PRESENT	2c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. (2) MASS	b. NO. OF ANALYSES
72B. 1,4-Dichlorobenzene (106-46-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
73B. 3,3-Dichlorobenzidine (91-94-1)	X		X	< 0.020	< 0.347	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
74B. Diethyl Phthalate (84-66-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
75B. Dimethyl Phthalate (131-11-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
76B. Di-n-Butyl Phthalate (84-74-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
77B. 2,4-Dinitrotoluene (121-14-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
78B. 2,6-Dinitrotoluene (606-20-2)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
79B. Di-n-Octyl Phthalate (117-84-0)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
80B. 1,2-Diphenylhydrazine (122-66-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
81B. Fluoranthene (206-44-0)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
82B. Fluorene (86-73-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
83B. Hexachlorobenzene (118-74-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
84B. Hexachlorobutadiene (87-68-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
85B. Hexachlorocyclopentadiene (77-47-4)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
86B. Hexachloroethane (67-72-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
87B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
88B. Isophorone (78-59-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
89B. Naphthalene (91-20-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
90B. Nitrobenzene (98-95-3)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
91B. N-Nitrosodimethylamine (62-75-9)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
92B. N-Nitrosodi-n-Propylamine (621-64-7)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
93B. N-Nitrosodiphenylamine (86-30-6)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
94B. Phenanthrene (85-01-8)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
95B. Pyrene (129-00-0)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
96B. 1,2,4-Trichlorobenzene (120-82-1)	X		X	< 0.010	< 0.173	NA	NA	NA	NA	1	mg/L	lb/d	NA	NA	NA
Part C-Pesticides															
1P. Aldrin (309-00-2)	X		X	< 0.050	< 0.0009	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
2P. alpha-BHC (319-84-6) (6)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
3P. beta-BHC (319-85-7) (6)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
4P. gamma-BHC (58-89-9) (6)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
5P. delta-BHC (319-86-8) (6)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
6P. Chlordane (57-74-9) (6)	X		X	< 0.500	< 0.0087	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
7P. 4,4-DDT (50-29-3)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
8P. 4,4-DDE (72-55-9)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
9P. 4,4-DDD (72-54-8)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
10P. Dieldrin (60-57-1)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
11P. alpha-Endosulfan (115-29-7)	X		X	< 0.050	< 0.0009	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
12P. beta-Endosulfan (115-29-7)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
13P. Endosulfan Sulfate (1031-07-8)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
14P. Endrin (72-20-8)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
15P. Endrin Aldehyde (7421-93-4)	X		X	< 0.100	< 0.0017	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
16P. Heptachlor (76-44-8)	X		X	< 0.050	< 0.0009	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA

LAD000812816

OUTFALL NUMBER 004

1. POLLUTANT AND CAS NUMBER	2 a. TESTING REQUIRED	2 b. BELIEVED PRESENT	2 c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONC.	a. (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONC.	b. (2) MASS	c. LONG TERM AVERAGE (1) CONC.	c. (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONC.	b. MASS	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. (2) MASS	b. NO. OF ANALYSES
17P. Heptachlor Epoxide (1024-57-3)	X		X	< 0.050	< 0.0009	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
18P. PCB-1242 (53469-21-9)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
19P. PCB-1254 (11097-69-1)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
20P. PCB-1221 (11104-28-2)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
21P. PCB-1232 (11141-16-5)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
22P. PCB-1248 (12672-29-6)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
23P. PCB-1260 (11096-82-5)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
24P. PCB-1016 (12674-11-2)	X		X	< 1.000	< 0.0173	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA
25P. Toxaphene (8001-35-2)	X		X	< 5.000	< 0.0867	NA	NA	NA	NA	1	µg/L	lb/d	NA	NA	NA

NOTES:

(1) A 24-hour composite sampling event was conducted on 11/25/03 for all parameters indicated above, with the exception of temperature, pH, oil and grease, total cyanide, total phenols, and total residual chlorine, which were collected by grab sample.

(2) Historical data from 10/1/00 through 10/31/03 were used for those parameters with multiple number of analyses.

(3) A flow rate of 20.8 MGD was used to convert the sampling data on 11/25/03 from concentration to mass, if applicable.

(4) All analytical results reported with a "less than" sign (<) were not detected in the sample at the analytical method detection limit (MDL).

(5) NA - testing not required, not applicable or not available.

(6) Analyses did not meet the USEPA MDL, but nevertheless were not detected at the laboratory MDL.

Appendix D

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0005401**
Facility Name: **ExxonMobil Chemical Company – Baton Rouge Chemical Plant**
Previous Critical Dilution: **100%**
Proposed Critical Dilution: **Outfalls 001 & 004: 95%**
Outfall 003: 94%

Date of Review: **08/10/04; revised 07/25/05, 11/23/05, 12/23/05, and 04/06/06**
Name of Reviewer: **Kim Gunderson**

Recommended Frequency by Species:

***Pimephales promelas* (Fathead minnow): Once/Quarter[1,2]**
***Daphnia pulex* (water flea): Once/Quarter[1,2]**

Recommended Dilution Series: **Outfall 001 & 004: 30%, 40%, 53%, 71%, and 95%**
Outfall 003: 30%, 40%, 53%, 71%, and 94%

Number of Tests Performed during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 16[3,4]**
***Daphnia pulex* (water flea): 12[3,4]**
***Daphnia magna* (water flea): N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea): 4[3,4]**
***Menidia beryllina* (Inland Silverside minnow): 4[3,4]**
***Mysidopsis bahia* (Mysid shrimp): 4[3,4]**

Number of Toxicity Tests Resulting in Survival and Sub-lethal NOEC values ≤ 100% Effluent Concentration during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow): 8[3,4]**
***Daphnia pulex* (water flea): 3[4]**
***Daphnia magna* (water flea): N/A[4]**
***Ceriodaphnia dubia* (water flea): 4[3,4]**
***Menidia beryllina* (Inland Silverside minnow): 2[3,4]**
***Mysidopsis bahia* (Mysid shrimp): 2[3]**

---

[1] For Outfall 003 only, if there are no lethal effects demonstrated after the first year of quarterly testing, the permittee may certify fulfillment of the WET testing requirements in writing to the permitting authority. If granted, the monitoring frequency for the test species may be reduced to not less than once per year for the less sensitive species (usually *Pimephales promelas*) and not less than twice per year for the more sensitive species (usually *Daphnia pulex*). Upon expiration of the permit, the monitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

[2] LDEQ does not recommend that the option for a frequency reduction be extended for Outfall 001 and Outfall 004 due to the lack of sufficient data on Outfall 001 and mortality noted in biomonitoring tests of Outfall 001 effluent.

[3] All of these tests were conducted voluntarily by the permittee.

[4] Permittee was not required to test this species in the past five years.

Failed Test Dates during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow):**	**See attached chart**
***Daphnia pulex* (water flea):**	**See attached chart**
***Daphnia magna* (water flea):**	**N/A – Testing of species was not required**
***Ceriodaphnia dubia* (water flea):**	**See attached chart**
***Menidia beryllina* (Inland Silverside minnow):**	**See attached chart**
***Mysidopsis bahia* (Mysid shrimp):**	**See attached chart**

Previous TRE Activities: **N/A – No previous TRE Activities**

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

ExxonMobil Chemical Company – Baton Rouge Chemical Plant owns and operates an organic chemical manufacturing facility in Baton Rouge, East Baton Rouge Parish, Louisiana. NPDES Permit LA0005401, effective October 16, 1984, contained flexible biomonitoring as an effluent characteristic of Outfall 001 as follows: Organisms for this test were to be *Daphnia pulex* if the effluent was less than 5 ppt salinity or *Mysidopsis bahia* if the effluent was equal to or greater than 5 ppt salinity. There was no requirement for testing of a vertebrate species. Tests were to be conducted within sixty days of effectiveness of the biomonitoring requirements (October 16, 1984) and were to be once each quarter for two years utilizing a static method for 24 hours and at a dilution of 100% for the effluent sample and 0% for the dilution water. If at any time during the two-year testing period a test showed a survival of less than 80% of the test organisms, the permittee was to conduct a replacement static 48-hour median lethal concentration test (LC_{50}) on the originally collected sample within 24 hours from the failure. Data on file indicate that the permittee has complied with the biomonitoring requirements contained in LA0005401.

The permittee furnished LDEQ with a Summary of Biomonitoring Results that they voluntarily initiated from September, 2003 through May, 2004. These testing results included chronic and acute testing, utilizing freshwater and saltwater species, and samples were collected from individual outfalls and composite samples. A summary of these test results is attached to this recommendation.

Since the Monte Sano Bayou is designated as a man-made water body, LAC 33:IX.1123.C.3 Endnote 7 states that Aquatic Life Acute Criteria will apply. Therefore, it is recommended that freshwater acute biomonitoring be an effluent characteristic of Outfall 003 (discharge of 5.40288 MGD of cooling tower blowdown and utility flow) in LA0005401. The effluent dilution series shall be 30%, 40%, 53%, 71%, and 94% concentrations, with 94% being defined as the critical dilution. In accordance with the Environmental Protection Agency (Region 6) WET testing frequency acceleration(s), the biomonitoring frequency shall be once per quarter for *Daphnia pulex* and *Pimephales promelas*. If there are no significant lethal effects demonstrated at or below the critical dilution during the first four quarters of testing, the permittee may certify fulfillment of the WET testing requirements to the permitting authority and WET testing may be reduced to not less than once per six months for the more sensitive species (usually *Daphnia pulex*) and not less than once per year for the less sensitive species (usually *Pimephales promelas*) for

the remainder of the term of the permit. Upon expiration of the permit, the monitoring frequency for both test species shall revert to once per quarter until the permit is re-issued.

Additionally, it is recommended that freshwater acute biomonitoring be an effluent characteristic of Outfalls 001 and 004 (total discharge of 11.34576 MGD of process wastewater flow, process area stormwater and wash water, cooling tower blowdown, boiler blowdown, miscellaneous utility wastewaters, and utility flow) in LA0005401. The effluent dilution series shall be 30%, 40%, 53%, 71%, and 95% concentrations, with 95% being defined as the critical dilution. Samples will be taken from the flow-weighted composite of Outfalls 001 and 004. The biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas*. Due to the fact that only two toxicity tests were conducted on freshwater species at Outfall 001 individually during the past 20 years and that these tests resulted in low survival and sub-lethal NOEC values to the *Ceriodaphnia dubia, Daphnia pulex,* and *Pimephales promelas,* and pursuant to EPA R6's recommendation, LDEQ and EPA R6 does not recommend that the option for a frequency reduction be extended for Outfall 001 and Outfall 004 due to the lack of sufficient data and mortality noted in biomonitoring tests of Outfall 001 effluent.

Additional monitoring shall be conducted upon the usage of chlorine or any biofouling agent(s) for Outfalls 001, 003, and 004.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.

VOLUNTARY BIOMONITORING RESULTS

Date	Test	Sample Location	Test Organism	LC50	NOEC Survival	NOEC Reproduction	NOEC Growth
9/2003	7-Day Chronic	001	*Ceriodaphnia dubia*	N/A	23%	0%	N/A
9/2003	7-Day Chronic	001	*Pimephales promelas*	N/A	46%	N/A	46%
9/2003	7-Day Chronic	003	*Ceriodaphnia dubia*	N/A	100%	100%	N/A
9/2003	7-Day Chronic	003	*Pimephales promelas*	N/A	100%	N/A	100%
9/2003	7-Day Chronic	004	*Ceriodaphnia dubia*	N/A	100%	100%	N/A
9/2003	7-Day Chronic	004	*Pimephales promelas*	N/A	100%	N/A	100%
9/2003	7-Day Chronic	001+003 +004	*Ceriodaphnia dubia*	N/A	46%	23%	N/A
9/2003	7-Day Chronic	001+003 +004	*Pimephales promelas*	N/A	96%	N/A	46%
10/2003	48-Hour	001	*Daphnia pulex*	66.45%	46%	N/A	N/A
10/2003	48-Hour	001	*Pimephales promelas*	62.99%	46%	N/A	N/A
10/2003	48-Hour	001+003 +004	*Daphnia pulex*	N/A	96%	N/A	N/A
10/2003	48-Hour	001+003 +004	*Pimephales promelas*	N/A	98%	N/A	N/A
01/2004	48-Hour Acute	001	*Mysidopsis bahia*	N/A	85%	N/A	N/A
01/2004	48-Hour Acute	001	*Menidia beryllina*	N/A	85%	N/A	N/A
01/2004	48-Hour Acute	001+003 +004	*Mysidopsis bahia*	N/A	93%	N/A	N/A
01/2004	48-Hour Acute	001+003 +004	*Menidia beryllina*	N/A	93%	N/A	N/A
01/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	93%	N/A	N/A
01/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	93%	N/A	N/A
02/2004	48-Hour Acute	001+003 +004	*Mysidopsis bahia*	N/A	100%	N/A	N/A
02/2004	48-Hour Acute	001+003 +004	*Menidia beryllina*	N/A	100%	N/A	N/A
02/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
02/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
03/2004	48-Hour Acute	001+003 +004	*Mysidopsis bahia*	N/A	100%	N/A	N/A
03/2004	48-Hour Acute	001+003 +004	*Menidia beryllina*	N/A	100%	N/A	N/A

Date	Test	Sample Location	Test Organism	LC50	NOEC Survival	NOEC Reproduction	NOEC Growth
03/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
03/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
04/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
04/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	99.75%	0%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	001+003 +004	*Daphnia pulex*	N/A	100%	N/A	N/A
05/2004	48-Hour Acute	002+003 +004	*Pimephales promelas*	N/A	100%	N/A	N/A