LPDES PERMIT NO. LA0071382, AI No. 9061

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: Westlake Polymers LP
Poly I & II Polyethylene Production Facility
Post Office Box 3508
Sulphur, Louisiana 70664

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: Jenniffer Sheppard
Water and Waste Permits Division
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Date Prepared: March 8, 2005
Revised on December 13, 2005, February 16, 2006, and April 12, 2006.

IV. Permit Action/Status:

A. Reason For Permit Action:

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

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

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. NPDES permit - NPDES permit effective date: N/A
NPDES permit expiration date: N/A

EPA has not retained enforcement authority

C. LPDES permit - LPDES permit effective date: April 1, 2000
LPDES permit expiration date: March 31, 2005

D. Application received on September 30, 2004. Addendums to application dated August 16, 2005, April 12, 2006, and April 18, 2006.

V. Facility Information:

A. Location - 3525 Cities Services Highway in Sulphur, Calcasieu Parish

B. Applicant Activity -

According to the application, Westlake Polymers LP, Poly I & II Polyethylene Production Facility, is a polyethylene production facility that polymerizes ethylene gas to polyethylene polymer using a high pressure process.

Ethylene is pumped to an autoclave reactor by reciprocating compressors or tubular reactor depending upon the production line ("K-line production uses a tubular reactor, while all other production lines use autoclave reactors), and peroxides or other initiators are used to control the reaction rate. The polyethylene and unreacted ethylene from the reactor are sent to the separating vessels. The ethylene is then recycled to the process, while the molten polyethylene is routed to an extruder for pelletizing.

The pellets are blended and packaged prior to shipment. Vinyl acetate is used in some grades to produce a copolymer.

A Draft permit was previously issued to Westlake Polymers LP, Poly I & II Polyethylene Production Facility, dated March 7, 2006. The public comment period lasted through April 13, 2006. Comments to the draft permit were submitted by Westlake Polymers LP. The comments were not formally addressed through response to comments due to issues of concern being addressed as part of this revision to the permit.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414
Process Flow -	Subparts D & J
Outfall 007 - 0.1965 MGD	
Outfall 010 - 0.2231 MGD	
Total = 0.4196 MGD	

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: 2821

E. Continuous Facility Effluent Flow-
Outfalls 007 and 010 - 1.3452 MGD.

VI. Receiving Waters: unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

1. TSS (15%), mg/L: 9.65
2. Average Hardness, mg/L $CaCO_3$: 888.1
3. Critical Flow, cfs: 31.15 [*1]
4. Mixing Zone Fraction: 1
5. Harmonic Mean Flow, cfs: 93.45 [*1]
6. River Basin: Calcasieu River, Segment No. 030901
7. Designated Uses:
The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11;/Recommendation(s) from the Engineering Section. Hardness and 15% TSS data come from the ambient monitoring station 848 near the Highway 108 bridge, 1 mile south of I-10 exit #24, 5.4 miles west of Lake Charles, 4.1 miles NE of Carlyss, on Bayou D'Inde south of Sulphur listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This data is also located in a memo dated February 14, 2005, from Robert Lott of LDEQ's Engineering Section to Jenniffer Sheppard.

[*1] The mixing zones of Outfalls 007 and 010 overlap, therefore, the critical flow and harmonic mean were divided on a flow weighted basis.

Outfall 007 - Harmonic Mean Flow, cfs: 47.121
Critical Flow, cfs: 15.707

Outfall 010 - Harmonic Mean Flow, cfs: 46.329
Critical Flow, cfs: 15.443

VII. Outfall Information:

Outfall 007 (Interim and Final)

A. Type of wastewater - the discharge of treated process wastewater from Poly II including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow water; process area stormwater; non-process area stormwater including runoff from the centerline of the Equistar Chemical LP road located to the immediate west; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous

de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water.

B. Location - at the point of discharge from the treatment facility in the southeast corner of the facility, upstream from Outfall 010, prior to combining with other waters of the east ditch, at Latitude 30°11'47", Longitude 93°19'34".

C. Treatment - treatment of process wastewaters consists of:
- flotation
- screening
- discharge to surface water

D. Flow - Continuous Flow 0.6783 MGD.

Process Wastewater*	0.1965 MGD
Utility Wastewater*	0.3312 MGD
Non-process Area Stormwater*	0.1506 MGD

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

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

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

Outfall 010 (Interim and Final)

A. Type of wastewater - the discharge of treated process wastewater from Poly I including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow water; process area stormwater; non-process area stormwater; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and laboratory wastewater.

B. Location - at the point of discharge from the treatment facility, at the northeast corner of the facility, prior to combining with other waters of the east ditch, at Latitude 30°11'56", Longitude 93°19'33".

C. Treatment - treatment of process wastewaters consists of:
- flotation
- screening
- discharge to surface water

D. Flow - Continuous Flow 0.6669 MGD.

Process Wastewater*	0.2231 MGD
Utility Wastewater*	0.3618 MGD
Non-process Area Stormwater*	0.082 MGD

* Specific component waste streams are defined at Appendix A-2.

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

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

Outfall 011

A. Type of wastewater - the discharge of non-process area stormwater (including stormwater runoff from the centerline of the Equistar road located to the immediate west); intermittent post first-flush stormwater from Poly I & II process and non-process areas (during storm events of high intensity and/or extended duration; overflow may occur after 1.25 inches of rainfall into sumps 002 and 003 and after 2.0 inches into sump 008); and miscellaneous de minimis discharges including excess well water, fire system test water, cooling tower pump seal leakage and drift, and eye wash and shower station water.

B. Location - at the point of discharge into the northwestern portion of the west ditch, prior to combining with other waters, at Latitude 30°12'00", Longitude 93°19'39".

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

Outfall 012

A. Type of wastewater - the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

B. Location - at the point of discharge into the eastern ditch, prior to combining with other waters, at Latitude 30°12'01", Longitude 93°19'33".

C. Treatment - None

D. Flow - Continuous Flow 1.201 MGD.

Previously Monitored Wastewater from Outfalls 007 and 010*	1.201 MGD
Utility Wastewater*	De minimis
Non-process Area Stormwater*	Intermittent

E. Receiving waters - unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River

F. Basin and segment - Calcasieu River Basin, Segment 030901

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

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 010 (Interim and Final) - A daily maximum water quality based limitation was assigned for 1,3-Dichloropropylene and a technology based limitation for the monthly average. The monitoring frequency has increased from 1/year to 1/quarter.

B. *Outfall 010 (Interim) - Total Copper was screened against current water quality standards,* using the value 0.044 lbs/day as presented in the September 2004 LPDES application lab analysis section. Since one sample point was taken, this value was screened as an effluent average in accordance with the LDEQ implementation plan for water quality screening. The resulting screen suggests the need for pre-TMDL water quality based limitations. Therefore, the following limitations for Total Copper were established at Outfall 010, effective on the effective date of the permit and lasting until June 12, 2008: 0.02192 Monthly Average and 0.05204 Daily Maximum.

C. Outfall 012 - newly created outfall covering the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

D. The low contamination potential stormwater outfalls, previously designated as Outfalls 004, 005, and 006 were consolidated into Outfall 012.

E. Outfall 011 - Monitor and report requirements were established at this outfall for Total Copper, Total Lead, Total Cadmium, and Total Zinc based on analytical data, submitted in the September 2004 LPDES permit renewal application and the April 12, 2006 comments to the Draft LPDES permit public noticed on March 9, 2006. Values presented were well above minimum quantification levels (MQLs) and are proposed to be sampled for data gathering purposes.

F. Outfall 012 - Monitor and report requirements were established at this outfall for Total Copper and Total Zinc based on analytical data, submitted in the September 2004 LPDES permit renewal application and the April 12, 2006 comments to the Draft LPDES permit public noticed on March 9, 2006. Values presented were well above minimum quantification levels (MQLs) and are proposed to be sampled for data gathering purposes.

G. Outfall 007 (Interim) - Report only monitoring requirements have been placed in this permit for total copper, PCBs, tetrachloroethane, bromoform, and total mercury. These parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. Hexachlorobenzene and Hexachlorobutadiene are also considered TMDL parameters under the Calcasieu Estuary TMDL for Toxics, but were assigned the pre-TMDL water quality based limitations they would have received based on the standards. The report only requirements and pre-TMDL water quality based limitations mentioned above will expire on June 12, 2008.

H. Outfall 010 (Interim) - Report only monitoring requirements have been placed in this permit for PCBs, tetrachloroethane, bromoform, and total mercury. These parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. Total copper, Hexachlorobenzene, and Hexachlorobutadiene are also considered TMDL parameters under the Calcasieu Estuary TMDL for Toxics, but were assigned the pre-TMDL water quality based limitations they would have received based on the standards. The report only requirements and pre-TMDL water quality based limitations mentioned above will expire on June 12, 2008.

I. Outfalls 007 and 010 (Final) - Daily Maximum mass limits for total copper, PCBs, tetrachloroethane, hexachlorobutadiene, bromoform, hexachlorobenzene, and total mercury have been incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. These effluent limits are proposed to commence on June 13, 2008. The permittee shall sample Outfalls 007 and 010 for all TMDL parameters. The results will be reported on the Discharge Monitoring Report (DMR) as the sum of the combined loadings from Outfalls 007 and 010. The summed value shall not exceed the Daily Maximum loading as presented in the Calcasieu Estuary TMDL for Toxics.

Federal regulations under 40 CFR 130.7 require the State to incorporate all final TMDLs into its current Water Quality Management Plan (WQMP). The State is also required to ensure consistency with the WQMP requirements approved by EPA under Section 208(b) of the Clean Water Act (CWA), as cited under LAC 33.IX.2707.D.6. Since the requirements established in the Final TMDL (Federal Register Notice: Volume 67, Number 114, pages 40735 - 40737, 6/13/2002) are water quality-based effluent limitations that are part of the State's current Water Quality Management Plan (Volume 8), and are more stringent than the technology based effluent limitations, the TMDL waste load allocations must remain in the permit

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. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

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 007 - the discharge of treated process wastewater from Poly II including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow water; process area stormwater; non-process area stormwater including runoff from the centerline of the Equistar Chemical LP road located to the immediate west; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water.

   Westlake Polymers LP, Poly I & II Polyethylene Production Facility 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, Subpart(s) D and J.

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

Site-Specific Consideration(s)

The Bayou D'Inde Dissolved Oxygen TMDL (July 1, 2002) states that this waterbody is meeting its uses at the existing loadings, therefore BOD_5 is proposed without increment.

Parameter	Current Permit Limits		Calculated Tech. & WQ Permit Limits (based on production increase)		Proposed Permit Limits	
	Monthly Avg lbs/day	Daily Max lbs/day	Monthly Avg lbs/day	Daily Max lbs/day	Monthly Avg lbs/day	Daily Max lbs/day
BOD_5	48	113	59	145	48	113

2. Outfall 010 - the discharge of treated process wastewater from Poly I including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow water; process area stormwater; non-process area stormwater; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and laboratory wastewater.

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Organic chemical manufacturing	40 CFR 414, Subpart(s) D and J.

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Parameter	Current Permit Limits		Calculated Tech. & WQ Permit Limits (based on production increase)		Proposed Permit Limits	
	Monthly Avg lbs/day	Daily Max lbs/day	Monthly Avg lbs/day	Daily Max lbs/day	Monthly Avg lbs/day	Daily Max lbs/day
BOD_5	57	140	63	156	57	140

3. Outfall(s) 011 and 012 - Stormwater & Miscellaneous Deminimis Utility Wastewaters

* Outfall 011 - the discharge of non-process area stormwater (including stormwater runoff from the centerline of the Equistar road located to the immediate west); intermittent post first-flush stormwater from Poly I & II process and non-process areas (during storm events of high intensity and/or extended duration; overflow may occur after 1.25 inches of rainfall into sumps 002 and 003 and after 2.0 inches into sump 008); and miscellaneous de minimis discharges including excess well water, fire system test water, cooling tower pump seal leakage and drift, and eye wash and shower station water.

* Outfall 012 - the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

The following limitations were established in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6) and on BPJ.

Parameter	Monthly Average	Daily Maximum
Flow, MGD	Report	Report
TOC	N/A	50 mg/L
Oil and Grease	N/A	15 mg/L
Total Copper	N/A	Report
Total Lead(*)	N/A	Report
Total Cadmium(*)	N/A	Report
Total Zinc	N/A	Report
pH, Std. Units	6.0 (min)	9.0 (max)

(*) To be monitored at Outfall 011 only.

Site-Specific Consideration(s)

Outfall 011 - Total Copper, Total Lead, Total Cadmium, and Total Zinc were incorporated based on analytical data for this outfall, submitted in the September 2004 LPDES permit renewal application and the April 12, 2006 comments to the Draft LPDES permit public noticed on March 9, 2006. Values presented were well above minimum quantification levels (MQLs) and are proposed to be sampled for data gathering purposes.

Outfall 012 - Total Copper, and Total Zinc were incorporated based on analytical data for this outfall, submitted in the September 2004 LPDES permit renewal application and the April 12, 2006 comments to the Draft LPDES permit public noticed on March 9, 2006. Values presented were well above minimum quantification levels (MQLs) and are proposed to be sampled for data gathering purposes.

In accordance with LAC 33:IX.2707.I.3 and LAC 33:IX.2707.I.4 [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2522.B.14 [40 CFR 122.26(b)(14)].

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:

Total Copper
Total Mercury
Hexachlorobutadiene
PCB - 1254
1,1,2,2-Tetrachlorethane
Bromoform
Hexachlorobenzene
1,3 - Dichloropropylene

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.

To protect against the potential for discharges of the TMDL pollutants, copper, mercury, hexachlorobenzene, hexachlorobutadiene, and PCB-1254 at levels above that of state water quality standards, and for discharges of copper, mercury, hexachlorobenzene, hexachlorobutadiene, and PCB-1254 at levels exceeding state water quality standards, site specific MQL's were developed for these parameters.

$$\text{MQL (mg/L)} = \frac{\text{TMDL assigned Loading for Chemical X}}{\text{Flow used in TMDL x 8.34 conversion factor}}$$

MQL (μg/L) = MQL (mg/L)x 1000

Compounds	Combined TMDL Loading for Outfalls 007 and 010 (lbs/day)	Flow (MGD)	Conversion Factor	MQL Detection Limit μg/L
Copper	0.12225(*)	1.60436	8.34	9.136
Mercury	0.000841	1.60436	8.34	0.063
PCB -1254	0.000001220	1.60436	8.34	0.000091
Hexachlorobenzene	0.0000305	1.60436	8.34	0.002279
Hexachlorobutadiene	0.01300	1.60436	8.34	0.972

(*) TMDL document erroneously listed the Daily Maximum Total Copper loading as 0.1100000 lbs/day in Table 15 of the Calcasieu Toxics TMDL for Subsegment 030901. EPA, Region VI indicated that the correct Waste Load Allocation (WLA) for Total Copper was calculated in Appendix E (Table E-12) of the Calcasieu Toxics TMDL using the following equation:

WLA = Facility Process Flow Used in the TMDL x The Assimilative Capacity Load

Compounds	Facility Process Flow (MGD)	Assimilative Capacity Load per MGD of Process Flow (ppd/mgd)	Assimilative Capacity WLA pound per day (ppd)
Copper	1.60436	0.0762	0.12225

Should an EPA approved test method not be available to achieve the stated detection level, then the most sensitive EPA approved method is required, and the permittee can record zero or a less than value on the DMR in the event that the analytical result is less than the detection limit of the most sensitive method.

TMDL Waterbodies

Outfall 007, 010, 011, and 012

The discharges from Outfalls 007, 010, 011, and 012 include treated process wastewater and process area stormwater, utility wastewater, low contamination potential stormwater, and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water are to an unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River, Segment

No. 030901. Bayou D'Inde is listed on the 1998 303(d) report as being impaired with pathogen indicators, copper, PCBs, priority organics, oil & grease, non-priority organics, other inorganics, organic enrichment/low DO, nutrients, nickel, phosphorus, contaminated sediments, and mercury. The 2002 list of impaired waterbodies addressed the copper, mercury, PCBs, priority organics, and contaminated sediment impairments through The Upper Calcasieu Estuary Toxics TMDL, issued June 13, 2002. Organic enrichment/low DO, nutrients, and phosphorus were addressed by an LDEQ TMDL for dissolved oxygen. Pathogen Indicators, oil and grease, non-priority organics, and other inorganics were officially delisted. New data shows attainment for the nickel impairment.

Copper, Mercury, PCBs, Priority Organics, Contaminated Sediments, and Priority Organics

The following Daily Maximum limitations were established at Outfalls 007 and 010 based on the Upper Calcasieu Estuary Toxics TMDL for Outfalls 007 and 010.

Outfalls 007 and 010	
Total Copper	0.12225 lbs/day, daily maximum
Total Mercury	0.000841 lbs/day, daily maximum
Hexachlorobutadiene	0.01300 lbs/day, daily maximum
PCB - 1254	0.000001220 lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	0.220 lbs/day, daily maximum
Bromoform	4.24 lbs/day, daily maximum
Hexachlorobenzene	0.0000305 lbs/day, daily maximum

Organic Enrichment/ Low Dissolved Oxygen, Nutrients, and Phosphorus

The LDEQ TMDL for Dissolved Oxygen (July 1, 2002) suggests that the waterbody is meeting its uses at existing loadings, therefore, the BOD_5 limitations for Outfalls 007 and 010 are proposed without increment.

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.

Site-Specific Consideration(s)

OUTFALL 007

TMDL parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. A Report only requirement has been placed on the following parameters lasting from the effective date of the permit until June 12, 2008.

Interim requirements	
Total Copper	Report lbs/day, daily maximum
Total Mercury	Report lbs/day, daily maximum
PCB - 1254	Report lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	Report lbs/day, daily maximum
Bromoform	Report lbs/day, daily maximum

Hexachlorobenzene and Hexachlorobutadiene were assigned pre-TMDL water quality based limitations (See Appendix B-1).

Hexachlorobenzene	0.000072 lbs/day, daily max
	0.000171 lbs/day, monthly avg
Hexachlorobutadiene	0.010101 lbs/day, daily max
	0.023980 lbs/day, monthly avg

OUTFALL 010

TMDL parameters were incorporated due to the Upper Calcasieu Estuary TMDL for Toxics issued in the Federal Register on June 13, 2002. A Report only requirement has been placed on the following parameters lasting from the effective date of the permit until June 12, 2003.

Interim requirements

Total Mercury	Report lbs/day, daily maximum
PCB - 1254	Report lbs/day, daily maximum
1,1,2,2-Tetrachlorethane	Report lbs/day, daily maximum
Bromoform	Report lbs/day, daily maximum

Total Copper, Hexachlorobenzene and Hexachlorobutadiene were assigned pre-TMDL water quality based limitations (See Appendix B-3).

Total Copper	0.02192 lbs/day, daily max
	0.05204 lbs/day, monthly avg
Hexachlorobenzene	0.00006 lbs/day, daily max
	0.000143 lbs/day, monthly avg
Hexachlorobutadiene	0.008194 lbs/day, daily max
	0.019454 lbs/day, monthly avg

The following TMDL effluent limitations shall become effective on June 13, 2008.

CALCULATIONS FOR COMBINED OUTFALL 007 AND 010

Please refer to Appendices D and E for further details on the TMDL. The values used in the calculations below were taken from Appendix E of the original TMDL and are attached in this document as Appendix E.

TMDL Loading = TMDL Process Flow * Assimilative Capacity per MGD Process Flow

TMDL Process Flow Used (value in the TMDL) = 1.60436 MGD

TMDL PARAMETER	PROCESS FLOW USED IN TMDL (MGD)	ASSIMILATIVE CAPACITY LOAD PER MGD PROCESS FLOW	LOADING LBS/DAY, DAILY MAXIMUM
Total Copper	1.60436	0.0762	0.12225
Total Mercury	1.60436	0.000524	0.000841
Hexachlorobutadiene	1.60436	0.0081	0.01300

TMDL PARAMETER	PROCESS FLOW USED IN TMDL (MGD)	ASSIMILATIVE CAPACITY LOAD PER MGD PROCESS FLOW	LOADING LBS/DAY, DAILY MAXIMUM
PCB - 1254	1.60436	0.000000761	0.00000122
1,1,2,2-Tetrachlorethane	1.60436	0.137	0.220
Bromoform	1.60436	2.64	4.24
Hexachlorobenzene	1.60436	0.000019	0.0000305

D. Whole Effluent Toxicity Limits

1. General Comments

The provisions of this section apply to Outfall(s) 007 and 010

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to LAC 33:IX.2707.D.1.e/40 CFR 122.44(d)(1)(v), this Office has determined that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative criterion within the applicable State water quality standards, in violation of Section 101(a)(3) of the Clean Water Act. Furthermore, this Office has determined that chemical specific limitations alone are not sufficient to maintain the applicable numeric and narrative State water quality standards. The State has established a narrative water quality criteria which, in part, states that

> "No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life." (Louisiana Surface Water Quality Standards, LAC Title 33, Part IX, Chapter 11, Section 1113.B.5.)

The following summarizes toxicity test failures submitted by the permittee during the current term of the permit:

Sixteen tests were performed for Cyprinodon variegatus (sheepshead minnow) and Mysidopsis bahia (mysid shrimp). No failed test were reported in the last 5 years for either species.

2. Permit Action

a. Testing and Reporting Requirements

The draft permit establishes the following testing and reporting requirements:

TOXICITY TESTS	FREQUENCY
Chronic static renewal 7-day survival and reproduction test using *Mysidopsis bahia* [Method 1007.0]	1/quarter
Chronic static renewal 7-day larval survival and growth test using fathead minnow (*Menidia beryllina*) [Method 1006.0]	1/quarter

The draft permit additionally requires the reporting of the coefficient of variation (larger of the low flow and control dilutions) for each test species.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine 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 provide data representative of the facility's discharge in accordance with regulations listed at LAC 33:IX.2715/40 CFR 122.48 and to assure compliance with permit limitations following regulations listed at LAC 33:IX.2707.I.1/40 CFR 122.44(I)(1).

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and salinity 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.

b. Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 8%, 6%, 5%, 4%, and 3%. The low-flow effluent concentration (critical dilution and WET Limit) is defined as 6% effluent.

c. Effluent Limitations and/or Conditions

(1) Final Requirements

The draft permit establishes final whole effluent toxicity limitations and monitoring requirements beginning the effective date of this permit.

(2) Discussion

Chronic marine biomonitoring was established in the final LPDES permit no. LA0071382, issued March 9, 2000, with an effective date of April 1, 2000, and an expiration date of March 31, 2005. for Outfall(s) 007 and 010.

A Total Maximum Daily Load (TMDL) has been developed for the receiving stream, Bayou D'Inde, which recommends that all majors and significant minor dischargers to Bayou D'Inde test effluents for chronic toxicity at least quarterly to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing instream toxicity.

It is recommended that marine chronic biomonitoring with a WET limit continue to be an effluent characteristic of Outfall 007 (discharge of 0.6783 MGD of treated process wastewater, process and nonprocess area stormwater, once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, and general facility washwater) and Outfall 010 (discharge of 0.6669 MGD of treated process wastewater, process and nonprocess area stormwater, once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, and general facility washwater) in LA0071382. Samples will be taken from the flow-weighted composite of Outfalls 007 and 010. The effluent dilution series shall be 3%, 4%, 5%, 6%, and 8% concentrations, with 6% being defined as the critical dilution and/or WET limit. The recommended biomonitoring frequency shall be once per quarter for Mysidopsis bahia and Menidia beryllina. The Permittee has passed all Cyprinodon variegatus and Mysidopsis bahia survival and sub-lethal tests at the 5.9% effluent concentration for the previous five years. Therefore, consistent 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), LDEQ recommends that this facility be eligible to receive a frequency reduction, provided the following conditions are met:

If there are no significant lethal or sub-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 (Mysidopsis bahia) and not less than once per year for the less sensitive species (Menidia beryllina) 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.

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. Outfalls 007 and 010 - Process Wastewaters

* Outfall 007 - the discharge of treated process wastewater from Poly II including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow water; process area stormwater; non-process area stormwater including runoff from the centerline of the Equistar Chemical LP road located to the immediate west; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and cooling tower pump seal leakage and drift water.

* Outfall 010 - the discharge of treated process wastewater from Poly I including Silo wash water, rail car wash water, pellet skimmer water, and fly-knife tank overflow water; process area stormwater; non-process area stormwater; utility wastewater including once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, water softener backwash, and general facility washwater; and miscellaneous de minimis discharges including steam trap condensate, fire system test water, eye wash/safety shower water, and laboratory wastewater

Flow and pH shall be monitored continuously. The following pollutants are to be monitored once/week.

Parameter(s):
BOD
TSS
Oil & Grease

A monitoring frequency of once/quarter for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These parameters were established by the Upper Calcasieu Estuary Toxics TMDL.

Parameter(s):
PCB - 1254
1,1,2,2-Tetrachloroethane
Total Copper
Total Mercury
Bromoform
Hexachlorobenze

Hexachlorobutadiene
1,3 - Dichloropropylene

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

2. Outfall(s) 011 and 012 - Stormwater & Utility

* Outfall 011 - the discharge of non-process area stormwater (including stormwater runoff from the centerline of the Equistar road located to the immediate west); intermittent post first-flush stormwater from Poly I & II process and non-process areas (during storm events of high intensity and/or extended duration; overflow may occur after 1.25 inches of rainfall into sumps 002 and 003 and after 2.0 inches into sump 008); and miscellaneous de minimis discharges including excess well water, fire system test water, cooling tower pump seal leakage and drift, and eye wash and shower station water.

* Outfall 012 - the discharge of the previously monitored effluents authorized for discharge through Outfalls 007 and 010; the intermittent discharge of non-process area stormwater including stormwater runoff from the undeveloped grassy area of the Equistar property to the immediate south; miscellaneous de minimis discharges including fire system test water, eye wash/safety shower water, and firewater storage tank intermittent overflow (well water); and low contamination potential stormwater from former Outfalls 004, 005, and 006.

Non-process area stormwater and miscellaneous de minimis utility wastewater discharges through a discrete outfall, will receive monitoring frequencies according to the following schedule:

All parameters - 1/month, when discharging

X. Compliance History/DMR Review:

A compliance history/dmr review was conducted covering the period of January 2002 through March 2005. The following excursions were reported by the facility:

Date	Parameter	Outfall	Reported Value	Permit Limits
3/1/02	pH	011	5.8 s.u.	6.0 - 9.0 s.u.
3/1/02	Oil & Grease	011	31.7 mg/L dly max	15 mg/L dly max
3/1/02	pH	005	5.9 s.u.	6.0 - 9.0 s.u.
6/1/02	TSS	007	668.99 lbs/day dly max	480 lbs/day dly max
6/1/02	TSS	010	1677.8 lbs/day dly max	464 lbs/day dly max
11/1/02	pH	001	5.15 s.u.	6.0 - 9.0 s.u.
11/1/02	pH	005	9.39 s.u.	6.0 - 9.0 s.u.
4/1/03	Bis(2-Ethylhexyl) Phthalate	007	0.18 lbs/day mo avg.	0.10 lbs/day mo avg
11/1/04	TSS	010	727.78 lbs/day dly max	464 lbs/day dly max
12/1/04	BOD	007	119.55 lbs/day dly max	113 lbs/day dly max

Inspections

March 16, 2004
An annual facility inspection was conducted on March 16, 2004. The inspector noted trace amounts floating solids/particles in the discharge at Outfall 010. The facility plans to install a new filtration system to address the trace amounts of solids. There were no other areas of concern.

March 28, 2005
An annual facility inspection was conducted on March 28, 2005. The inspector did not note any areas of concern.

XI. "IT" Questions - Applicant's Responses

Refer to Westlake's September 2004 LPDES renewal application, Appendix D, for the IT Questions and Westlake's responses.

XII. Endangered Species:

The receiving waterbody, Subsegment 030901 of the Calcasieu 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.

XIII. 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.

XIV. Tentative Determination:

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

XV. Variances:

No requests for variances have been received by this Office.

XVI. 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

04/19/2006 Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

(*1) TABLE 1

Permittee:	Westlake Polymers LP/Poly I & II Polyethylene Production Facility
Permit Number:	LA0071382, AI9061
Appendix	Revised 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. 007
Deepwell fract., 40 CFR 122.50	

(*2)

OCPSF Subpart I=1, J=2	2	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Silo Wash	0.0202	
Process Area Stormwater	0.1086	
Rail Car Wash Water	0.0317	
Pellet Skimmer Water	0.0072	
Fly-Knife Tank Overflow	0.0288	
TOTAL PROCESS FLOW:	0.1965	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:		
MISCELLANEOUS:	MGD	gpm
Non-Process Area Stormwater	0.1506	
TOTAL MISCELLANEOUS FLOWS:	0.1506	---
UTILITY WASTEWATER:	MGD	gpm
Water Softener backwash	0.144	
Once Through Cooling Water	0.0144	
Cooling Tower Blowdown	0.1512	
Boiler Blowdown	0.0072	
General Facility Wash Water	0.0144	
TOTAL UTILITY WW FLOWS:	0.3312	---
TOTAL OCPSF+BPJ FLOW:	0.6783	---

(*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	30	75
Utility WW		0.25	0.25	0.25	0.25
Utility WW, mg/L		5	10	30	75
Sanitary, mg/L		30	45	30	45

Conversion Factors:

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

(*4)

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

(*8)

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

(*5)

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

(*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

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		
COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*10) COD and TOC limits, precalc

Flow MGD		
---	COD,Avg (lbs/day)	0
---	COD,Max (lbs/day)	0
---	TOC,Avg (lbs/day)	0
	TOC,Max (lbs/day)	0

(*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	1

OCPSF+Inorganic 0.6783

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 007

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		1	0.1965	8.34	39.33144	104.8838	65.5524	213.0453
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	24	64	40	130		1	0.1965	8.34	39.33144	104.8838	65.5524	213.0453
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:							---	8.34	---	---	---	---
Miscellaneous:	5	10	30	75			0.1506	8.34	6.28002	12.56004	37.68012	94.2003
Utility Wastewater:	5	10	30	75			0.3312	8.34	13.81104	27.62208	82.86624	207.1656
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							0.4818		20.09106	40.18212	120.5464	301.3659
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
					---	---	---		---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Guideline Total (lbs/day)							---		---	---	---	---
BOD5/TSS Grand Total (lbs/day)							0.6783		59.4225	145.066	186.0988	514.4112

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 007

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)
	COD	COD	TOC	TOC	Prod.	Flow to		Conv.	COD	COD	TOC	TOC
Guideline Subpart:	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.		Factor	Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction			lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---	---	---			---	---	---	---
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
Guideline Total									---	---	---	---
BPJ Source(s) or	COD	COD	TOC	TOC		COD	TOC	Conv.	COD	COD	TOC	TOC
Flow Based Guidelines	Avg	Max	Avg	Max		Flow	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L		(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio,	COD/BOD5	COD/BOD5	TOC/BOD5	TOC/BOD5	BOD5	BOD5			COD	COD	TOC	TOC
Source:	Ratio	Ratio	Ratio	Ratio	limit	limit			Avg	Max	Avg	Max
	Avg	Max	Avg	Max	Avg	Max			lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---	---	---			---	---	---	---
									---	---	---	---
Ratio Total									---	---	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									---	---	---	---
Guideline Source(s) of	O&G	O&G			Prod.	Flow to		Conv.	O&G	O&G		
Oil and Grease (O&G)	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.		Factor	Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction			lbs/day	lbs/day	lbs/day	lbs/day
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of	O&G	O&G				O&G		Conv.	O&G	O&G		
Oil and Grease (O&G)	Avg	Max	Avg	Max		Flow	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L		(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
BPJ O&G Allocation	10	15	---	---		0.6783	---	8.34	56.57022	84.85533	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									56.57022	84.85533	---	---

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 007

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 Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 007 Avg lbs/day	(*11) Out. 007 Max lbs/day	(*12) Out. 007 Avg mg/L	(*13) Out. 007 Max mg/L
CONVENTIONAL												
BOD5 [*1]				59.4225	145.066	48	113	1	48	113	---	---
TSS				186.0988	514.4112			---	186	514	---	---
Oil and Grease				56.57022	84.85533			---	57	85	---	---
NON-CONVENTIONAL												
COD				---	---			---	---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1) METALS AND CYANIDE	(*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 Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 007 Avg lbs/day	(*11) Out. 007 Max lbs/day	(*12) Out. 007 Avg mg/L	(*13) Out. 007 Max mg/L
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 007

Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

(*1) OCPSF Parameter Subpart J	(*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. 007 Avg lbs/day	(*11) Out. 007 Max lbs/day	(*12) Out. 007 Avg mg/L	(*13) Out. 007 Max mg/L
VOLATILE COMPOUNDS												
Acrylonitrile	0.094	0.232	0.1965	0.154048	0.380204			---	0.15	0.38	---	---
Benzene	0.057	0.134	0.1965	0.093412	0.219601			---	0.09	0.22	---	---
Carbon Tetrachloride	0.142	0.38	0.1965	0.232711	0.622748			---	0.23	0.62	---	---
Chlorobenzene	0.142	0.38	0.1965	0.232711	0.622748			---	0.23	0.62	---	---
Chloroethane	0.11	0.295	0.1965	0.180269	0.483449			---	0.18	0.48	---	---
Chloroform	0.111	0.325	0.1965	0.181908	0.532613			---	0.18	0.53	---	---
1,1-Dichloroethane	0.022	0.059	0.1965	0.036054	0.09669			---	0.04	0.10	---	---
1,2-Dichloroethane	0.18	0.574	0.1965	0.294986	0.940677			---	0.29	0.94	---	---
1,1-Dichloroethylene	0.022	0.06	0.1965	0.036054	0.098329			---	0.04	0.10	---	---
1,2-trans-Dichloro-ethylene	0.025	0.066	0.1965	0.04097	0.108161			---	0.04	0.11	---	---
1,2-Dichloropropane	0.196	0.794	0.1965	0.321207	1.301215			---	0.32	1.30	---	---
1,3-Dichloropropylene	0.196	0.794	0.1965	0.321207	1.301215			---	0.32	1.30	---	---
Ethylbenzene	0.142	0.38	0.1965	0.232711	0.622748			---	0.23	0.62	---	---
Methyl Chloride	0.11	0.295	0.1965	0.180269	0.483449			---	0.18	0.48	---	---
Methylene Chloride	0.036	0.17	0.1965	0.058997	0.278598			---	0.06	0.28	---	---
Tetrachloroethylene	0.052	0.164	0.1965	0.085218	0.268765			---	0.09	0.27	---	---
Toluene	0.028	0.074	0.1965	0.045887	0.121272			---	0.05	0.12	---	---
1,1,1-Trichloroethane	0.022	0.059	0.1965	0.036054	0.09669			---	0.04	0.10	---	---
1,1,2-Trichloroethane	0.032	0.127	0.1965	0.052442	0.208129			---	0.05	0.21	---	---
Trichloroethylene	0.026	0.069	0.1965	0.042609	0.113078			---	0.04	0.11	---	---
Vinyl Chloride	0.097	0.172	0.1965	0.158965	0.281875			---	0.16	0.28	---	---
ACID COMPOUNDS												
2-Chlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.1965	0.127827	0.45395			---	0.13	0.45	---	---
2,4-Dinitrophenol	1.207	4.291	0.1965	1.978044	7.032134			---	1.98	7.03	---	---
2-Nitrophenol	0.065	0.231	0.1965	0.106523	0.378565			---	0.11	0.38	---	---
4-Nitrophenol	0.162	0.576	0.1965	0.265487	0.943955			---	0.27	0.94	---	---
Phenol	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 007

Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

(*1) OCPSF Parameter Subpart J	(*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) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 007 Avg lbs/day	(*11) Out. 007 Max lbs/day	(*12) Out. 007 Avg mg/L	(*13) Out. 007 Max mg/L
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Acenaphthylene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Anthracene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Benzo(a)anthracene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Benzo(a)pyrene	0.02	0.048	0.1965	0.032776	0.078663			---	0.03	0.08	---	---
3,4-Benzofluoranthene	0.02	0.048	0.1965	0.032776	0.078663			---	0.03	0.08	---	---
Benzo(k)fluoranthene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Bis(2-ethylhexyl)- phthalate	0.095	0.258	0.1965	0.155687	0.422813			---	0.16	0.42	---	---
Chrysene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
1,2-Dichlorobenzene	0.196	0.794	0.1965	0.321207	1.301215			---	0.32	1.30	---	---
1,3-Dichlorobenzene	0.142	0.38	0.1965	0.232711	0.622748			---	0.23	0.62	---	---
1,4-Dichlorobenzene	0.142	0.38	0.1965	0.232711	0.622748			---	0.23	0.62	---	---
Diethyl phthalate	0.046	0.113	0.1965	0.075385	0.185186			---	0.08	0.19	---	---
Dimethyl phthalate	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Di-n-butyl phthalate	0.02	0.043	0.1965	0.032776	0.070469			---	0.03	0.07	---	---
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
Fluoranthene	0.022	0.054	0.1965	0.036054	0.088496			---	0.04	0.09	---	---
Fluorene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Hexachlorobenzene	0.196	0.794	0.1965	0.321207	1.301215			---	0.32	1.30	---	---
Hexachlorobutadiene	0.142	0.38	0.1965	0.232711	0.622748			---	0.23	0.62	---	---
Hexachloroethane	0.196	0.794	0.1965	0.321207	1.301215			---	0.32	1.30	---	---
Naphthalene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Nitrobenzene	2.237	6.402	0.1965	3.666018	10.49166			---	3.67	10.49	---	---
Phenanthrene	0.019	0.047	0.1965	0.031137	0.077024			---	0.03	0.08	---	---
Pyrene	0.02	0.048	0.1965	0.032776	0.078663			---	0.03	0.08	---	---
1,2,4-Trichlorobenzene	0.196	0.794	0.1965	0.321207	1.301215			---	0.32	1.30	---	---

[*1] The Bayou D'Inde TMDL suggests that waterbody is meeting uses at existing loading, therfore, BOD5 is proposed at the existing LPDES limits, without increment.

04/18/2006 Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

(*1) TABLE 1

Permittee:	Westlake Polymers LP/Poly I & II Polyethylene Production Facility	
Permit Number:	LA0071382, AI9061	
Appendix	Revised Appendix A-2	
[] Flow Basis 1=proc, 0=all	0	
Concentration flow, (MGD)	---	
GL vs Old,0=n,1=y,2=GL+Old	1	
Outfall number	Out. 010	
Deepwell fract., 40 CFR 122.50		

(*2)

OCPSF Subpart I=1, J=2	2	
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
Silo Wash	0.0393	
Process Area Stormwater	0.0461	
Rail Car Wash Water	0.0688	
Pellet Skimmer Water	0.0099	
Fly-Knife Tank Overflow	0.059	
TOTAL PROCESS FLOW:	0.2231	---
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
SANITARY WW:		
MISCELLANEOUS:	MGD	gpm
Non-Process Area Stormwater	0.082	
TOTAL MISCELLANEOUS FLOWS:	0.082	---
UTILITY WASTEWATER:	MGD	gpm
Water Softener backwash	0.0786	
Once Through Cooling Water	0.118	
Cooling Tower Blowdown	0.0964	
General Facility Wash Water	0.0688	
TOTAL UTILITY WW FLOWS:	0.3618	---
TOTAL OCPSF+BPJ FLOW:	0.6669	---

(*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	30	75
Utility WW		0.25	0.25	0.25	0.25
Utility WW, mg/L		5	10	30	75
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		1
E,Thermosetting Resins		---
F, Commodity Organics		---
G, Bulk Organics		---
H, Specialty Organics		---
Total:	---	1

(*6)

COD & TOC Ratios:	Average	Maximum
COD/BOD5 ratio		
TOC/BOD5 ratio		
COD,TOC, O&G []:	Average	Maximum
COD, mg/L		
TOC, mg/L		
O&G, mg/L		

(*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	1

(*8)

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

(*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)

Flow MGD	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	0.6669

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 010

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		1	0.2231	8.34	44.6557	119.0819	74.42616	241.885
E,Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	24	64	40	130		1	0.2231	8.34	44.6557	119.0819	74.42616	241.885
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:							---	8.34	---	---	---	---
Miscellaneous:	5	10	30	75			0.082	8.34	3.4194	6.8388	20.5164	51.291
Utility Wastewater:	5	10	30	75			0.3618	8.34	15.08706	30.17412	90.52236	226.3059
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							0.4438		18.50646	37.01292	111.0388	277.5969
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
					---	---	---		---	---	---	---
					---	---			---	---	---	---
					---	---			---	---	---	---
Other Guideline Total (lbs/day)							---		---	---	---	---
BOD5/TSS Grand Total (lbs/day)							0.6669		63.16216	156.0948	185.4649	519.4819

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 010

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)
	COD	COD	TOC	TOC	Prod.	Flow to		Conv.	COD	COD	TOC	TOC
Guideline Subpart:	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.		Factor	Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction			lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---	---	---			---	---	---	---
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
Guideline Total									---	---	---	---
BPJ Source(s) or	COD	COD	TOC	TOC		COD	TOC	Conv.	COD	COD	TOC	TOC
Flow Based Guidelines	Avg	Max	Avg	Max		Flow	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L		(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio,	COD/BOD5	COD/BOD5	TOC/BOD5	TOC/BOD5	BOD5	BOD5			COD	COD	TOC	TOC
Source:	Ratio	Ratio	Ratio	Ratio	limit	limit			Avg	Max	Avg	Max
	Avg	Max	Avg	Max	Avg	Max			lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---	---	---			---	---	---	---
									---	---	---	---
Ratio Total									---	---	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									---	---	---	---
Guideline Source(s) of	O&G	O&G			Prod.	Flow to		Conv.	O&G	O&G		
Oil and Grease (O&G)	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.		Factor	Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction			lbs/day	lbs/day	lbs/day	lbs/day
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of	O&G	O&G				O&G		Conv.	O&G	O&G		
Oil and Grease (O&G)	Avg	Max	Avg	Max		Flow	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L		(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
BPJ O&G Allocation	10	15	---	---		0.5227	---	8.34	43.59318	65.38977	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									43.59318	65.38977	---	---

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 010

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 Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 010 Avg lbs/day	(*11) Out. 010 Max lbs/day	(*12) Out. 010 Avg mg/L	(*13) Out. 010 Max mg/L
CONVENTIONAL												
BOD5 [*1]				63.16216	156.0948	57	140	1	57	140	---	---
TSS				185.4649	519.4819			---	185	519	---	---
Oil and Grease				43.59318	65.38977			---	44	65	---	---
NON-CONVENTIONAL												
COD				---	---			---	---	---	---	---
TOC				---	---			---	---	---	---	---
TRC				---	---			---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1) METALS AND CYANIDE	(*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 Old Avg lbs/day	(*8) Tech Old Max lbs/day	(*9) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 010 Avg lbs/day	(*11) Out. 010 Max lbs/day	(*12) Out. 010 Avg mg/L	(*13) Out. 010 Max mg/L
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				---	---			---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---
				---	---			---	---	---	---	---

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 010

Calculation of Toxic Limits, OCPSF Subpart J

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	G/L-BPJ	Out. 010	Out. 010	Out. 010	Out. 010
Subpart J	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
VOLATILE COMPOUNDS												
Acrylonitrile	0.094	0.232	0.2231	0.174901	0.431672			---	0.17	0.43	---	---
Benzene	0.057	0.134	0.2231	0.106057	0.249328			---	0.11	0.25	---	---
Carbon Tetrachloride	0.142	0.38	0.2231	0.264213	0.707049			---	0.26	0.71	---	---
Chlorobenzene	0.142	0.38	0.2231	0.264213	0.707049			---	0.26	0.71	---	---
Chloroethane	0.11	0.295	0.2231	0.204672	0.548893			---	0.20	0.55	---	---
Chloroform	0.111	0.325	0.2231	0.206533	0.604713			---	0.21	0.60	---	---
1,1-Dichloroethane	0.022	0.059	0.2231	0.040934	0.109779			---	0.04	0.11	---	---
1,2-Dichloroethane	0.18	0.574	0.2231	0.334918	1.068015			---	0.33	1.07	---	---
1,1-Dichloroethylene	0.022	0.06	0.2231	0.040934	0.111639			---	0.04	0.11	---	---
1,2-trans-Dichloro-ethylene	0.025	0.066	0.2231	0.046516	0.122803			---	0.05	0.12	---	---
1,2-Dichloropropane	*0.196*	*0.794*	*0.2231*	*0.364688*	1.477359			---	0.36	1.48	---	---
1,3-Dichloropropylene	0.196	0.794	0.2231	0.364688	1.477359			---	0.36	1.48	---	---
Ethylbenzene	0.142	0.38	0.2231	0.264213	0.707049			---	0.26	0.71	---	---
Methyl Chloride	0.11	0.295	0.2231	0.204672	0.548893			---	0.20	0.55	---	---
Methylene Chloride	0.036	0.17	0.2231	0.066984	0.316311			---	0.07	0.32	---	---
Tetrachloroethylene	0.052	0.164	0.2231	0.096754	0.305147			---	0.10	0.31	---	---
Toluene	0.028	0.074	0.2231	0.052098	0.137688			---	0.05	0.14	---	---
1,1,1-Trichloroethane	0.022	0.059	0.2231	0.040934	0.109779			---	0.04	0.11	---	---
1,1,2-Trichloroethane	0.032	0.127	0.2231	0.059541	0.236303			---	0.06	0.24	---	---
Trichloroethylene	0.026	0.069	0.2231	0.048377	0.128385			---	0.05	0.13	---	---
Vinyl Chloride	0.097	0.172	0.2231	0.180483	0.320032			---	0.18	0.32	---	---
ACID COMPOUNDS												
2-Chlorophenol												
2,4-Dichlorophenol												
2,4-Dimethylphenol	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
4,6-Dinitro-o-cresol	0.078	0.277	0.2231	0.145131	0.515401			---	0.15	0.52	---	---
2,4-Dinitrophenol	1.207	4.291	0.2231	2.245809	7.984066			---	2.25	7.98	---	---
2-Nitrophenol	0.065	0.231	0.2231	0.120943	0.429811			---	0.12	0.43	---	---
4-Nitrophenol	0.162	0.576	0.2231	0.301426	1.071737			---	0.30	1.07	---	---
Phenol	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---

Calculation of Technology Based Limits for Westlake Polymers LP/Poly I & II Polyethylene Production Facili

Out. 010

Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

(*1) OCPSF Parameter Subpart J	(*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) Anti-Back 0=no scr. 1=OldvsGL 2=Old+GL	(*10) Out. 010 Avg lbs/day	(*11) Out. 010 Max lbs/day	(*12) Out. 010 Avg mg/L	(*13) Out. 010 Max mg/L
BASE/NEUTRAL COMPOUNDS												
Acenaphthene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Acenaphthylene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Anthracene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Benzo(a)anthracene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Benzo(a)pyrene	0.02	0.048	0.2231	0.037213	0.089311			---	0.04	0.09	---	---
3,4-Benzofluoranthene	0.02	0.048	0.2231	0.037213	0.089311			---	0.04	0.09	---	---
Benzo(k)fluoranthene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Bis(2-ethylhexyl)-phthalate	0.095	0.258	0.2231	0.176762	0.480049			---	0.18	0.48	---	---
Chrysene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
1,2-Dichlorobenzene	0.196	0.794	0.2231	0.364688	1.477359			---	0.36	1.48	---	---
1,3-Dichlorobenzene	0.142	0.38	0.2231	0.264213	0.707049			---	0.26	0.71	---	---
1,4-Dichlorobenzene	0.142	0.38	0.2231	0.264213	0.707049			---	0.26	0.71	---	---
Diethyl phthalate	0.046	0.113	0.2231	0.08559	0.210254			---	0.09	0.21	---	---
Dimethyl phthalate	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Di-n-butyl phthalate	0.02	0.043	0.2231	0.037213	0.080008			---	0.04	0.08	---	---
2,4-Dinitrotoluene												
2,6-Dinitrotoluene												
Fluoranthene	0.022	0.054	0.2231	0.040934	0.100475			---	0.04	0.10	---	---
Fluorene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Hexachlorobenzene	0.196	0.794	0.2231	0.364688	1.477359			---	0.36	1.48	---	---
Hexachlorobutadiene	0.142	0.38	0.2231	0.264213	0.707049			---	0.26	0.71	---	---
Hexachloroethane	0.196	0.794	0.2231	0.364688	1.477359			---	0.36	1.48	---	---
Naphthalene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Nitrobenzene	2.237	6.402	0.2231	4.162283	11.91191			---	4.16	11.91	---	---
Phenanthrene	0.019	0.047	0.2231	0.035352	0.087451			---	0.04	0.09	---	---
Pyrene	0.02	0.048	0.2231	0.037213	0.089311			---	0.04	0.09	---	---
1,2,4-Trichlorobenzene	0.196	0.794	0.2231	0.364688	1.477359			---	0.36	1.48	---	---

[*1] The Bayou D'Inde TMDL suggests that waterbody is meeting uses at existing loading, therfore, BOD5 is proposed at the existing LPDES limits, without increment.

REVISED APPENDIX A-3 LA0071382, AI No. 9061

Documentation and Explanation of Technology Calculations
and Associated Lotus Spreadsheet

This is a multi-sector technology spreadsheet covering the following four guidelines: 40 CFR 414, Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF), 40 CFR 415.62 and 40 CFR 415.63, Chlor-Alkali Subcategory of Subpart F of the Inorganic Chemical Guidelines and other Inorganic Chemical Guideline subparts on a case-by-case basis, 40 CFR 418, Fertilizer Manufacturing Guidelines, Subparts B, C, D, and E / BPJ Nitrogen Sources, and 40 CFR 455, Subpart A, Pesticide Chemicals Guidelines, Organic Pesticide Chemicals Manufacturing Subcategory. 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. The spreadsheet was programmed with the capability of addressing pollutant loadings and associated BPJ allocations for any, all, or a combination of the above mentioned guidelines at a designated outfall. 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 a data input area primarily for the OCPSF guidelines and the inorganic chemical guidelines, Sections (*2), (*3), (*4), (*5), (*6), (*7), (*8), (*10), and (*11). 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.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

[] Flow Basis 1=proc, 0=all- 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.l, 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 or concentrations 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 122.44.1, 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)- Inorganic guideline subpart and associated production and flow are entered as indicated. Chlor-Alkali guidelines (40 CFR 415.63) are present by default since chlor-alkali operations are most frequently associated with the production of organic chemicals (chlorinated solvents, vinyl chloride monomer, etc.). New sources are indicated by placing a "1" or a "0" in the indicated cell. O Fraction=0, []=1, indicates whether the BPJ BOD_5 allocation fraction is entered in terms of weighted OCPSF concentrations, indicated by a "0", or other concentration under the indicated columns, indicated by a "1". Production information is entered in terms of 1000 lbs per day. Flow is entered in MGD or gpm in the appropriate column. Other inorganic guideline input information is included on a case-by-case basis.

(*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 data input area for the Fertilizer/BPJ Nitrogen Sources, and Pesticide Guidelines.

(*1) Fertilizer Effluent Guidelines (40 CFR 418)- The switch, "CBOD5, 1=y, 0=n" indicates whether $CBOD_5$ shall be substituted for BOD_5. This shall

be done only if the applicant can submit effective documentation for the substitution. If $CBOD_5$ is selected, all other references to BOD_5 in this documentation shall refer to $CBOD_5$, and all BOD_5 concentrations shall be multiplied by the appropriate (monthly average or daily max) $CBOD_5/BOD_5$ ratio(s) as indicated. Production in 1000 lbs/day are entered on the row(s) with the appropriate guidelines. Flow is entered optionally on the rows with guideline production since the fertilizer guidelines are mass based. BPJ allocations for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined under "BPJ Sources:". This includes "Production Based BPJ:", "BPJ Shipping Losses (Statistically Based):", and "Flow Based BPJ Nitrogen Sources (non-guideline)".

Under "Production Based BPJ" the switch for "BPJ Truck and Car Cleaning" applies only to granulated urea (40 CFR 418.33(b). The switch for "BPJ Ship Losses (Prod. Based)" is used only if shipping losses are calculated on the basis of production. The current BPJ production based shipping loss established by EPA Region 6 is 0.05 lbs/1000 lbs, daily average, and 0.10 lbs/1000 lbs daily maximum. This was originally set for Ammonia Nitrogen under the Ammonia production subcategory, but has been expanded to the other parameters and subcategories unless otherwise indicated in the previous permit.

BPJ Shipping Losses (statistically based)- If the facility can provide empirical data for shipping losses quantities (lbs/day), the mean and standard deviation are entered under the appropriate nitrogen category, ammonia, organic, or nitrate nitrogen to calculate 95th (daily average limit) and 99th percentiles (daily maximum limit).

Flow Based BPJ Nitrogen Sources (non-guideline)- Non-fertilizer guideline BPJ loadings for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined from concentrations and flows entered in the indicated cells. If the facility has ammonia production near cooling towers, the cooling tower blowdown flow is placed on the indicated row, "BPJ CTBD Allowance".

(*2) Pesticide Guidelines, 40 CFR 455, Subpart A- This is the input area for the Organic Pesticide Chemicals Manufacturing Subcategory. The other pesticide guideline subparts were not included since they have no discharge of process wastewaters requirements. New Source and End-Of-Pipe (EOP) biological treatment indications are entered in the specified cells. The pesticide guidelines are a combination of production and flow based limitations, therefore production in 1000 lbs/day and process flow in MGD are entered in the appropriate cells. Similar to the OCPSF guidelines, specific metal and cyanide bearing wastestream flows are entered for lead and cyanide. If the organic pesticide manufacturing operation is associated with an operation that falls under the OCPSF guidelines or other guidelines that do not regulate COD, it may be necessary to determine a COD/BOD_5 ratio for non-pesticide wastewaters. These values are entered in the indicated cells. Under the last

section, the appropriate pesticide name and guideline factors daily average and daily maximum are entered in the appropriate cells. TOC may be substituted for COD for manufacturers of Ametryn, Prometon, Terbutryn, Cyanazine, Atrazine, Propazine, Simazine, Terbuthylazine, Hexazinone, and Glyphosphate in accordance with 40 CFR 455.20(a). TOC/BOD_5 ratios are entered under section (*6) in Table 1.

Table 3

Site-Specific Metal, Total Residual Chlorine (TRC), and Cyanide Bearing Flow Allocation. For the metals and cyanide regulated under the OCPSF guidelines, three categories of sources are accounted for, 1) OCPSF process wastewater, 2) miscellaneous and utility wastewaters, and 3) non-OCPSF guideline wastewater. TRC allocation flows are indicated by the specific source.

(*1) Parameter/Source- Metal, Cyanide, or TRC receiving a flow allocation and the source of the flow categorized as an 1) OCPSF process wastewater, 2) miscellaneous and utility wastewater, and 3) non-OCPSF wastewater. These categories may differ as the situation dictates, i.e., TRC.

(*2) Flow, MGD- Source flow in MGD.

Table 4

Table 4 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 allocations are made by BPJ.

(*3) Maximum BOD_5- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.

(*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 (OCPSF, Inorganic Guidelines; commonly Chlor-Alkali, and Pesticides).

(*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.

(*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. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*2) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. Inorganic wastewaters receive a BOD_5 allocation provided that anti-backsliding does not apply. 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. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*4) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. 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 5

Table 5 is a calculation table for the guideline and BPJ pollutant loadings of COD, TOC, and Oil and Grease.

(*1) Lists applicable guideline subparts, and sources that contribute COD, TOC, and Oil and Grease loading.

(*2) Average COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD_5 ratio, and Average O&G BPJ concentration (mg/L). COD to BOD_5 ratios or concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD_5 and COD, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD_5 and COD, 3) from the application. BPJ Oil and Grease concentration(s) are calculated utilizing the principles of mass balance, flow, and mass loadings from the previously issued NPDES permit.

(*3) Maximum COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD_5 ratio, and Maximum O&G BPJ concentration (mg/L). See discussion for column (*2).

(*4) Average TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), and TOC to BOD_5 ratio. TOC to BOD_5 ratios and TOC concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD_5 and TOC, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD_5 and TOC, 3) from the application.

(*5) Maximum TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), or TOC to BOD_5 ratio. See discussion for column (*4).

(*6) Production in 1000 lbs/day/BOD_5 limit, Average- Indicates amount of production per guideline subpart. Under the ratio section, BOD_5 limit, Average, this is a previously calculated average BOD_5 limit.

(*7) Flow to Treatment Plant Fraction/COD Flow, MGD/BOD_5 limit, Maximum/O&G Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation. Under the BPJ Source(s) or Flow based Guidelines section, COD Flow, MGD, is entered in the indicated cell. Under the ratio section, BOD_5 limit, Maximum, this is a previously calculated maximum BOD_5 limit. Under the BPJ Source(s) Oil and Grease (O&G) section, O&G Flow, MGD, is entered in the indicated cell.

(*8) TOC Flow, MGD - Under the BPJ Source(s) or Flow based Guidelines section, TOC Flow, MGD is entered in the indicated cell.

(*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) Average COD or O&G loading per source indicated on the specified row in lbs/day. Under the mass-based guideline section, this is calculated by multiplying the process factor in column (*2) by the daily production value in column (*6), and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under BPJ Sources or Flow based Guidelines or the BPJ Source(s) Oil and Grease (O&G) sections, loadings are determined by multiplying the concentration specified in column (*2) by the flow in column (*7) and the conversion factor in column (*9). Total COD limits applicable to the permitted outfall are found on the row labeled, "COD/TOC Total (lbs/day)". Total Oil and Grease loadings are specified on the row labeled, "O&G Total (lbs/day)".

(*11) Maximum COD or O&G loading. Similar to column (*10). See description for column (*10).

(*12) Average TOC loading. Similar to column (*10). See description for column (*10).

(*13) Maximum TOC loading. Similar to column (*10). See description for column (*10).

Table 6

Table 6 includes calculations for the heavy metals, Total Chromium, Total Copper, Total Lead, Total Nickel, Total Zinc, Total Cyanide, Total Mercury, Total Residual Chlorine (TRC), and Amenable Cyanide utilizing BAT, NSPS, or BPJ as indicated.

(*1) Subcategory and/or Source- This specifies the applicable guideline subpart, subcategory, or BPJ source. When site-specific OCPSF metal limits are being calculated, the categorical source will be displayed: process wastewater, miscellaneous and utility wastewater, and non-ocpsf wastewater.

(*2) Average (parameter) guideline factor (lbs/1000 lbs daily production), or BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 0.9 mg/L, average, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

(*3) Maximum (parameter) guideline factor (lbs/1000 lbs daily production), BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 1.5 mg/L, maximum, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

(*4) Same as (*2).

(*5) Same as (*3).

(*6) Production in 1000 lbs/day- Applicable to mass based effluent guidelines, these values indicate the amount of production in 1000 lbs/day.

(*7) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

(*8) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*2) and (*3) and is used in determining flow based loadings.

(*9) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*4) and (*5) and is used in determining flow based loadings.

(*10) Average guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*2) times the flow specified in column (*8) times

the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*11) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*3) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*12) Similar to column (*10). See description for (*10).

(*13) Similar to column (*11). See description for (*11).

Table 7

Table 7 calculates effluent limitations for parameters under the Fertilizer Effluent Guidelines (40 CFR 418, Subparts B, C, D, and E) utilizing BAT or NSPS as indicated. In the absence of applicable guidelines, BPJ loadings may be calculated. The non-conventional parameters are Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen.

(*1) Subcategory or Nitrogen Source:- This specifies the guideline subcategory or source. The listed processes are from 40 CFR 418 Subparts, B, C, D, and E, BAT and NSPS. BPJ allocations for Ammonia Nitrogen, Organic Nitrogen, and Nitrate Nitrogen are determined under "BPJ Non-GL Sources:". This includes "BPJ Production Based:", "BPJ Stat. Based:" (BPJ Statistically Based), and "BPJ Flow Based".

(*2) Average subcategory guideline process factors for the specified parameter, Ammonia Nitrogen or Nitrate Nitrogen as indicated. Guideline process factors are in terms of lbs of parameter per 1000 lbs of daily production. These are located beneath the label, "Avg lbs/1000". Under "BPJ Non-GL Sources", the allowance is specified in units dependent on category. Units: Production based BPJ uses lbs/1000 lbs of product produced, statistically based BPJ utilizes the mean production in lbs/day of product, and flow based BPJ uses mg/L. A common flow based BPJ ammonia allocation, cooling tower blowdown, typically receives a 20 mg/L average allocation for Ammonia Nitrogen based on similarly permitted facilities. Anti-backsliding or poor documentation in the previously issued permit may preclude the usage of the above mentioned BPJ allocations.

(*3) Maximum subcategory guideline process factors for the specified parameter, Ammonia Nitrogen or Nitrate Nitrogen as indicated. Guideline process factors are in terms of lbs of parameter per 1000 lbs of daily production. These are located beneath the label, "Max lbs/1000". Under "BPJ Non-GL Sources", the allowance is specified in units dependent on category. Units: Production based BPJ uses lbs/1000 lbs of product produced, statistically based BPJ utilizes the standard deviation of production in lbs/day of product, and flow based BPJ uses mg/L. A common flow based BPJ ammonia allocation, cooling tower blowdown, typically receives a 50 mg/L maximum allocation for Ammonia Nitrogen based on similarly permitted facilities. Anti-backsliding or poor documentation in the previously issued permit may preclude the usage of the above mentioned BPJ allocations.

(*4) Average subcategory guideline process factor. Same as (*2), except the parameter is Organic Nitrogen.

(*5) Maximum subcategory guideline process factor. Same as (*3), except the parameter specified is Organic Nitrogen.

(*6) Daily production in 1000/lbs per day- This is applicable to Fertilizer Guideline subparts, production based shipping loss allowances, and truck and car cleaning allowances for granulated urea.

(*7) Flow to Treatment Plant Fraction/Ammonia/Nitrate Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation. Under BPJ Flow Based:, the BPJ Ammonia Nitrogen or Nitrate Nitrogen (as appropriate) flow is entered in MGD.

(*8) Organic Nitrogen Flow, MGD- Under BPJ Flow Based:, the BPJ Organic Nitrogen flow is entered in MGD.

(*9) Average guideline subcategory/subpart or BPJ source quantity allowance in lbs/day for specified parameter. For the fertilizer guideline subcategories the process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under "BPJ Production Based", calculations are similar to the guideline calculations. Under "BPJ Stat. Based", the daily average statistical shipping losses are calculated using the following formula:

Variables:

Mean: specified in column (*2)

Standard Deviation (std. dev.): specified in column (*3)

Z(95th) = 1.65

Formula:

Average = (Mean + Z(95th) * std. dev.)

Statistical and production based shipping losses will not be calculated concurrently.

Non-guideline, BPJ Ammonia and Nitrate Nitrogen flow based loadings are calculated under the row labeled "BPJ Flow Based:". The BPJ concentration in column (*2) is multiplied by the flow in column (*7) and the density correction factor of 8.34 yielding an average ammonia nitrogen loading in column (*9). Based on similarly permitted facilities, 20 mg/L of Ammonia Nitrogen is typically allocated for cooling tower blowdown in areas near ammonia production. Anti-backsliding or limits placed in a previous permit may preclude the usage of this BPJ allocation or require a different allocation.

Totalized values are indicated on the rows labeled, "Process Total", "BPJ Source Total", and "Grand Total". The value indicated on the row labeled "Grand Total" is the average limit for the parameter specified.

(*10) Maximum guideline subcategory/subpart or BPJ source quantity allowance in lbs/day for specified parameter. For the fertilizer guideline subcategories the process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under "BPJ Production Based", calculations are similar to the guideline calculations. Under "BPJ Stat. Based", the daily maximum statistical shipping losses are calculated using the following formula:

Variables:

Mean: specified in column (*4)

Standard Deviation (std. dev.): specified in column (*5)

Z(99th) = 2.33

Formula:

Maximum = (Mean + Z(99th) * std. dev.)

Non-guideline, BPJ Ammonia and Nitrate Nitrogen flow based loadings are calculated under the row labeled "BPJ Flow Based:". The BPJ concentration in column (*3) is multiplied by the flow in column (*7) and the density correction factor of 8.34 yielding a maximum ammonia or nitrate nitrogen loading in column (*10). Based on similarly permitted facilities, 50 mg/L of Ammonia Nitrogen is typically allocated for cooling tower blowdown in areas near ammonia production. Anti-backsliding or limits placed in a previous permit may preclude the usage of this BPJ allocation or require a different allocation.

Similar to column (*9), statistical and production based shipping losses will not be calculated concurrently. Totalized values are indicated on the rows labeled, "Process Total", "BPJ Source Total", and "Grand Total". The value indicated on the row labeled "Grand Total" is the maximum limit for the parameter specified.

(*11) Average guideline subcategory/subpart or source quantity allowance in lbs/day for Organic Nitrogen. Similar to column (*9). See description for column (*9).

(*12) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for Organic Nitrogen. Similar to Column (*10). See description for column (*10).

Table 8

Table 8 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 122.44.1, 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 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 9

Table 9 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.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) 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:

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

Table 10

Table 10 calculates the organic toxic technology effluent limitations based on BAT or NSPS (as indicated) established in the Pesticide Chemicals Guidelines, Subpart A, Table 4 (point sources that use end-of-pipe biological treatment) or Subpart B, Table 5 (point sources that do not use end-of-pipe biological treatment).

(*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) Pesticide 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.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- 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 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) 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:

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

Table 11

Table 11 calculates limitations for pesticide parameters specified in 40 CFR 455, Subpart A, Table 2 (BAT), or Table 3 (NSPS). BPT limitations for organic pesticide chemicals from 40 CFR 455.22 may also be included in this table.

(*1) Pesticide Parameter 455, Subpart A, Table 2- A pesticide from guideline Table 2 or 3 (as indicated) will be listed. Organic Pesticide Chemicals may be listed under this section as well.

(*2) Average guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*3) Maximum guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*4) Adjusted Production in 1000 lbs per day. The average daily production value is adjusted for the fraction of flow to the treatment plant and surface waters if a portion of the wastewater is being discharged to a deepwell or other non-surface water source. If there is no deepwell, then this number represents the full production value.

(*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*2) times the adjusted production in column (*4).

(*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*3) times the adjusted production in column (*4).

(*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- 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 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) 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:

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

Table 12

Table 12 combines the organic toxics guideline calculations for 40 CFR 414, OCPSF Guidelines, Subparts I and J, and 40 CFR 455, Pesticide Chemicals Guidelines, Subpart A, Tables 4 and 5. This table is used when a facility's outfall is regulated under both the OCPSF and Pesticide Guidelines.

(*1) Parameter- The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds. The parameters listed cover the toxics listed in the OCPSF and Pesticide Guidelines.

OCPSF toxics calculation section:

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

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

(*4) OCPSF process flow in MGD. If a parameter is regulated by the OCPSF guidelines, but not the pesticide guidelines, and evidence suggests that the pesticide process may be contributing to the loading of that parameter, then the pesticide process flow may be added to the OCPSF flow per BPJ for that particular parameter.

(*5) Average OCPSF 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 OCPSF 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).

Pesticide toxics calculation section:

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

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

(*9) Pesticide process flow in MGD. If a parameter is regulated by the pesticide guidelines, but not the OCPSF guidelines, and evidence suggests that the OCPSF process may be contributing to the loading of that parameter, then the OCPSF process flow may be added to the pesticide flow per BPJ for that particular parameter.

(*10) Average Pesticide 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.

(*11) Maximum Pesticide 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).

(*12) Average guideline total in lbs/day- Summary column for the toxics averages calculated under the OCPSF guidelines and the pesticide guidelines. Column (*5) is summed with column (*10).

(*13) Maximum guideline total in lbs/day- Summary column for the toxics maximums calculated under the OCPSF guidelines and the pesticide guidelines. Column (*6) is summed with column (*11).

Table 13

Table 13 calculates limitations for pesticide parameters specified in 40 CFR 455, Subpart A, Table 2 (BAT), or Table 3 (NSPS) as indicated. BPT limitations for organic pesticide chemicals from 40 CFR 455.22 may also be included in this table.

(*1) Pesticide Parameter 455, Subpart A, Table 2- A pesticide from Table 2 or 3 (as indicated) will be listed. Organic Pesticide Chemicals may be listed under this section as well.

(*2) Average guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*3) Maximum guideline factor (BAT/NSPS) in terms of lb per 1000 lbs of pesticide produced daily.

(*4) Production in 1000 lbs per day- Average daily production value in 1000 lbs/day.

(*5) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

(*6) Average guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*2) times the production in column (*4) times the fraction in column (*5), if applicable.

(*7) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline factor in column (*3) times the production in column (*4) times the fraction in column (*5), if applicable.

Table 14

Table 14 is an Anti-Backsliding calculation table for organic and pesticide toxic limitations when a facility's outfall is regulated under both OCPSF and Pesticide Guidelines for a permitted outfall. Permitted loadings and concentrations are also summarized on this table.

(*1) Parameter- Parameter name

(*2) Average Tech Calc limit in lbs/day- Outfall guideline/BPJ loading in lbs/day.

(*3) Maximum Tech Calc limit in lbs/day- Outfall guideline/BPJ loading in lbs/day.

(*4) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (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.

(*5) Maximum Tech Old in lbs/day- Similar to (*4).

(*6) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- 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 (*7) and (*8). If the screen indicates that the previously issued permit limit utilizing BPJ 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 (*2) and (*3) are subsequently added to the values in columns (*4) and (*5) yielding technology-based effluent limitations in columns (*7) and (*8). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

(*7) 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 (*2). When anti-backsliding screening is used, see discussion for column (*6).

(*8) 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 (*3). When anti-backsliding screening is used, see discussion for column (*6).

(*9) 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 (*7). The formula is as follows:

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

(*10) Daily Maximum technology based effluent limit in mg/L- Similar to column (*9), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*8). The formula is as follows:

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

Appendix B

Developer: Bruce Fielding Time: 09:52 AM

Software: Lotus 4.0 LA0071382, AI9061

Revision date: 12/13/02

Water Quality Screen for Westlake Polymers LP / Poly I & II Polyethylene Production Facility

Input variables:

Receiving Water Characteristics:

Receiving Water Name= Bayou D'Inde

Critical flow (Qr)cfs[*1] 15.707

Harm. mean cfs [*1]= 47.121

Drinking Water=1 HHNPCR=2 0

Marine, 1=y, 0=n 1

Rec. Water Hardness= 888.1

Rec. Water TSS= 9.65

Fisch/Specific=1,Stream=0

Diffuser Ratio=

Effluent Characteristics:

Permittee= Westlake Polymers LP / Poly I & II Polyethylene Produc

Permit Number= LA0071382, AI9061

Outfallflow (Qef),MGD= 0.6783

Outfall Number = Out. 007 Interim

Eff. data, 2=lbs/day 2

MQL, 2=lbs/day 2

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

Page Numbering/Labeling

Appendix Revised Appendix B

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)=10.15143

Harm. Mean (MGD)= 30.4543

ZID Dilution = 0.400545

MZ Dilution = 0.062633

HHnc Dilution= 0.021787

HHc Dilution= 0.021787

ZID Upstream = 1.496599

MZ Upstream = 14.96599

MZhhnc Upstream= 14.96599

MZhhc Upstream= 44.89798

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

BWLA Fraction 1

WQBL Fraction 1

Conversions:

ug/L-->lbs/day Qef0.005657

ug/L-->lbs/day Qeo 0

ug/L-->lbs/day Qr 0.130996

lbs/day-->ug/L Qeo176.7715

lbs/day-->ug/L Qef176.7715

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

Partition Coefficients; Dissolved-->Total

METALS	MW
Total Arsenic	1
Total Cadmium	1
Chromium III	1
Chromium VI	1
Total Copper	1.136668
Total Lead	2.613166
Total Mercury	1
Total Nickel	1
Total Zinc	1.680101

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	69	36
Cadmium	45.34628	9.94
Chromium III	515	103
Chromium VI	1092.3	49.65
Copper	3.6271	3.6271
Lead	209.22	8.0835
Mercury	1.785	0.025
Nickel	74.25	8.217
Zinc	89.87	81.356

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] Overlapping mixing zones; Critical Flow, harmonic mean flow divided between Outfalls 007 and 010.

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQL lbs/day	(*6) Effluent 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				0.028285			580	290	50	
3-Chlorophenol				0.05657						
4-Chlorophenol				0.05657			535	268		
2,3-Dichlorophenol				0.05657						
2,5-Dichlorophenol				0.05657						
2,6-Dichlorophenol				0.05657						
3,4-Dichlorophenol				0.05657						
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				0.05657			69	36		
Total Cadmium				0.005657			45.34628	9.94		
Chromium III				0.05657			515	103		
Chromium VI				0.05657			1092.3	49.65		
Total Copper				0.05657			4.122809	4.122809		
Total Lead		0.0254		0.028285	0	0.054102	546.7266	21.12353		
Total Mercury				0.001131			1.785	0.025		
Total Nickel				0.028285			74.25	8.217		
Total Zinc		0.081		0.11314	0	0.17253	150.9906	136.6863		
Total Cyanide				0.11314			1		12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				5.7E-008					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene		0.093412	0.219601	0.05657	1		2700	1350	12.5	C
Bromoform				0.05657			1790	895	34.7	C
Bromodichloromethane				0.05657					3.3	C
Carbon Tetrachloride		0.232711	0.622748	0.05657	1		15000	7500	1.2	C
Chloroform		0.181908	0.532613	0.05657	1		8150	4075	70	C
Dibromochloromethane				0.05657					5.08	C
1,2-Dichloroethane		0.294986	0.940677	0.05657	1		11300	5650	6.8	C
1,1-Dichloroethylene		0.036054	0.098329	0.05657	1		22400	11200	0.58	C
1,3-Dichloropropylene		0.321207	1.301215	0.05657	1		79	39.5	162.79	
Ethylbenzene		0.232711	0.622748	0.05657	1		8760	4380	8100	
Methyl Chloride		0.180269	0.483449	0.282851	1		27000	13500		
Methylene Chloride		0.058997	0.278598	0.11314	1		25600	12800	87	C
1,1,2,2-Tetrachloro-ethane				0.05657			902	451	1.8	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 Out. 007	(*20) WQBL Max Out. 007	(*21) WQBL Avg Out. 007	(*22) WQBL MaxOut. 007	(*23) Need WQBL? Inter
	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)	1448.028	4630.138	2294.899	463.3689	2453.973	2294.899	463.3689	607.0132	1441.077	3.433887	8.152205	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	1335.681	4278.887	---	427.4178	2267.81	---	427.4178	559.9174	1329.269	3.167465	7.519706	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	172.2654	574.7758	---	55.12492	304.6312	---	55.12492	72.21364	171.4385	0.408514	0.969831	no
Total Cadmium	113.2115	158.702	---	36.22768	84.11205	---	36.22768	47.45826	112.6681	0.268472	0.637366	no
Chromium III	1285.749	1644.497	---	411.4396	871.5836	---	411.4396	538.9859	1279.577	3.049055	7.238596	no
Chromium VI	2727.036	792.7116	---	872.6514	420.1372	---	420.1372	550.3797	1306.627	3.11351	7.391615	no
Total Copper	10.293	65.82475	---	3.293761	34.88712	---	3.293761	4.314827	10.2436	0.024409	0.057948	no
Total Lead	1364.957	337.2581	---	436.7864	178.7468	---	178.7468	234.1583	555.9026	1.324639	3.144753	no
Total Mercury	4.45643	0.39915	---	1.426058	0.211549	---	0.211549	0.27713	0.657919	0.001568	0.003722	no
Total Nickel	185.3725	131.1926	---	59.3192	69.53207	---	59.3192	77.70816	184.4827	0.439597	1.043623	no
Total Zinc	376.9631	2182.332	---	120.6282	1156.636	---	120.6282	158.0229	375.1537	0.893939	2.122253	no
Total Cyanide	2.496599	---	589513.7	0.798912	---	589513.7	0.798912	1.046574	2.484616	0.00592	0.014056	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000033	---	---	0.000033	0.000033	0.000033	0.000079	1.9E-007	4.4E-007	no
VOLATILE COMPOUNDS												
Benzene	6740.819	21554.09	573.7248	2157.062	11423.67	573.7248	573.7248	573.7248	1365.465	3.245574	7.724466	no
Bromoform	4468.913	14289.57	1592.66	1430.052	7573.47	1592.66	1430.052	1873.368	4447.462	10.59769	25.15939	no
Bromodichloromethane	---	---	151.4633	---	---	151.4633	151.4633	151.4633	360.4828	0.856831	2.039259	no
Carbon Tetrachloride	37448.99	119745	55.07758	11983.68	63464.83	55.07758	55.07758	55.07758	131.0846	0.311575	0.741549	no
Chloroform	20347.29	65061.43	3212.859	6511.131	34482.56	3212.859	3212.859	3212.859	7646.604	18.17521	43.25701	no
Dibromochloromethane	---	---	233.1618	---	---	233.1618	233.1618	233.1618	554.925	1.319001	3.139223	no
1,2-Dichloroethane	28211.57	90207.87	312.1063	9027.704	47810.17	312.1063	312.1063	312.1063	742.813	1.765592	4.202109	no
1,1-Dichloroethylene	55923.83	178819.1	26.62083	17895.62	94774.14	26.62083	26.62083	26.62083	63.35758	0.150595	0.358415	no
1,3-Dichloropropylene	197.2314	630.6568	7471.733	63.11403	334.2481	7471.733	63.11403	82.67938	196.2846	0.467719	1.110387	yes
Ethylbenzene	21870.21	69931.06	371773.7	6998.468	37063.46	371773.7	6998.468	9167.993	21765.23	51.86354	123.1264	no
Methyl Chloride	67408.19	215540.9	---	21570.62	114236.7	---	21570.62	28257.51	67084.63	159.8534	379.4992	no
Methylene Chloride	63912.95	204364.7	3993.125	20452.14	108313.3	3993.125	3993.125	3993.125	9503.636	22.58919	53.76228	no
1,1,2,2-Tetrachloro-ethane	2251.933	7200.664	82.61637	720.6185	3816.352	82.61637	82.61637	82.61637	196.627	0.467363	1.112323	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent 95th % lbs/day	(*6) 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.085218	0.268765	0.05657	1		1020	510	2.5	C
Toluene		0.045887	0.121272	0.05657	1		950	475	46200	
1,1,1-Trichloroethane		0.036054	0.09669	0.05657	1		3120	1560		
1,1,2-Trichloroethane		0.052442	0.208129	0.05657	1				6.9	C
Trichloroethylene		0.042609	0.113078	0.05657	1		200	100	21	C
Vinyl Chloride		0.158965	0.281875	0.05657	1				35.8	C
ACID COMPOUNDS										
2-Chlorophenol				0.05657					126.4	
2,4-Dichlorophenol				0.05657					232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine				0.282851					0.00017	C
Hexachlorobenzene		0.321207	1.301215	0.05657	1				0.00025	C
Hexachlorabutadiene		0.232711	0.622748	0.05657	1		1.6	0.32	0.11	C
PESTICIDES										
Aldrin				0.000283			1.3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.000283			0.16		0.2	C
Chlordane				0.001131			0.09	0.004	0.00019	C
4,4'-DDT				0.000566			0.13	0.001	0.00019	C
4,4'-DDE				0.000566			0.7	0.14	0.00019	C
4,4'-DDD				0.000566			1.25	0.25	0.00027	C
Dieldrin				0.000566			0.71	0.0019	0.00005	C
Endosulfan				0.000566			0.034	0.0087	0.64	
Endrin				0.000566			0.037	0.0023	0.26	
Heptachlor				0.000283			0.053	0.0036	0.00007	C
Toxaphene				0.028285			0.21	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							13	7.5		
Ammonia								4000		
Chlorides		1575			0	3354.75				
Sulfates										
TDS		4902			0	10441.26				

(*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 Out. 007	(*20) WQBL Max Out. 007	(*21) WQBL Avg Out. 007	(*22) WQBL MaxWQBL? Out. 007	(*23) Need Inter
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	2546.531	8142.657	114.745	814.8901	4315.608	114.745	114.745	114.745	273.093	0.649115	1.544893	no
Toluene	2371.769	7583.847	2120487	758.9662	4019.439	2120487	758.9662	994.2458	2360.385	5.62447	13.35275	no
1,1,1-Trichloroethane	7789.39	24906.95	---	2492.605	13200.68	---	2492.605	3265.312	7752.001	18.47194	43.85324	no
1,1,2-Trichloroethane	---	---	316.6961	---	---	316.6961	316.6961	316.6961	753.7367	1.791557	4.263905	no
Trichloroethylene	499.3199	1596.599	963.8577	159.7824	846.1977	963.8577	159.7824	209.3149	496.9232	1.184099	2.811105	no
Vinyl Chloride	---	---	1643.148	---	---	1643.148	1643.148	1643.148	3910.692	9.295323	22.12287	no
ACID COMPOUNDS												
2-Chlorophenol	---	---	5801.505	---	---	5801.505	5801.505	5801.505	13807.58	32.81924	78.1098	no
2,4-Dichlorophenol	---	---	10675.87	---	---	10675.87	10675.87	10675.87	25408.57	60.39364	143.7369	no
BASE NEUTRAL COMPOUNDS												
Benzidine	---	---	0.007803	---	---	0.007803	0.007803	0.007803	0.01857	0.000044	0.000105	no
Hexachlorobenzene	---	---	0.011474	---	---	0.011474	0.011474	0.011474	0.027309	0.000065	0.000154	yes
Hexachlorabutadiene	3.994559	5.109118	5.048778	1.278259	2.707833	5.048778	1.278259	1.674519	3.975385	0.009473	0.022489	yes
PESTICIDES												
Aldrin	3.245579	---	0.018359	1.038585	---	0.018359	0.018359	0.018359	0.043695	0.000104	0.000247	no
Hexachlorocyclohexane (gamma BHC, Lindane)	0.399456	---	9.179597	0.127826	---	9.179597	0.127826	0.167452	0.397539	0.000947	0.002249	no
Chlordane	0.224694	0.063864	0.008721	0.071902	0.033848	0.008721	0.008721	0.008721	0.020755	0.000049	0.000117	no
4,4'-DDT	0.324558	0.015966	0.008721	0.103859	0.008462	0.008721	0.008462	0.011085	0.026317	0.000063	0.000149	no
4,4'-DDE	1.74762	2.235239	0.008721	0.559238	1.184677	0.008721	0.008721	0.008721	0.020755	0.000049	0.000117	no
4,4'-DDD	3.120749	3.991499	0.012392	0.99864	2.115494	0.012392	0.012392	0.012392	0.029494	0.00007	0.000167	no
Dieldrin	1.772586	0.030335	0.002295	0.567227	0.016078	0.002295	0.002295	0.002295	0.005462	0.000013	0.000031	no
Endosulfan	0.084884	0.138904	29.37471	0.027163	0.073619	29.37471	0.027163	0.035584	0.084477	0.000201	0.000478	no
Endrin	0.092374	0.036722	11.93348	0.02956	0.019463	11.93348	0.019463	0.025496	0.060529	0.000144	0.000342	no
Heptachlor	0.13232	0.057478	0.003213	0.042342	0.030463	0.003213	0.003213	0.003213	0.007647	0.000018	0.000043	no
Toxaphene	0.524286	0.003193	0.011016	0.167771	0.001692	0.011016	0.001692	0.002217	0.005263	0.000013	0.00003	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	32.45579	119.745	---	10.38585	63.46483	---	10.38585	13.60547	32.30001	0.076966	0.182722	no
Ammonia	---	63863.98	---	---	33847.91	---	33847.91	44340.76	105267	250.8367	595.4977	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 10:10 AM

Software: Lotus 4.0 LA0071382, AI9061

Revision date: 12/13/02

Water Quality Screen for Westlake Polymers LP / Poly I & II Polyethylene Production Facility

Input variables:

Receiving Water Characteristics:		Dilution:	
		ZID Fs =	0.1
Receiving Water Name=	Bayou D'Inde		
Critical flow (Qr)cfs[*1]	15.707	MZ Fs =	1
Harm. mean cfs [*1]=	47.121	Critical Qr (MGD)=	10.15143
Drinking Water=1 HHNPCR=2	0	Harm. Mean (MGD)=	30.4543
Marine, 1=y, 0=n	1	ZID Dilution =	0.400545
Rec. Water Hardness=	888.1	MZ Dilution =	0.062633
Rec. Water TSS=	9.65	HHnc Dilution=	0.021787
Fisch/Specific=1,Stream=0		HHc Dilution=	0.021787
Diffuser Ratio=		ZID Upstream =	1.496599
		MZ Upstream =	14.96599
Effluent Characteristics:		MZhhnc Upstream=	14.96599
Permittee=	Westlake Polymers LP / Poly I & II Polyethylene Producm		
Permit Number=	LA0071382, AI9061		
Outfallflow (Qef),MGD=	0.6783	MZhhc Upstream=	44.89798
		ZID Hardness=	---
Outfall Number =	Out. 007 Final	MZ Hardness=	---
Eff. data, 2=lbs/day	2	ZID TSS=	---
MQL, 2=lbs/day	2	MZ TSS=	---
Effluent Hardness=	N/A	Multipliers:	
Effluent TSS=	N/A	WLAa --> LTAa	0.32
WQBL ind. 0=y, 1=n		WLAc --> LTAc	0.53
Acute/Chr. ratio 0=n, 1=y	0	LTA a,c-->WQBL avg	1.31
Aquatic,acute only1=y,0=n		LTA a,c-->WQBL max	3.11
		LTA h --> WQBL max	2.38
Page Numbering/Labeling		WQBL-limit/report	2.13
Appendix	Revised Appendix B	WLA Fraction	1
Page Numbers 1=y, 0=n	1	WQBL Fraction	1
Input Page # 1=y, 0=n	1		
		Conversions:	
Fischer/Site Specific inputs:		ug/L-->lbs/day Qef	0.005657
Pipe=1,Canal=2,Specific=3		ug/L-->lbs/day Qeo	0
Pipe width, feet		ug/L-->lbs/day Qr	0.130996
ZID plume dist., feet		lbs/day-->ug/L Qeo	176.7715
MZ plume dist., feet		lbs/day-->ug/L Qef	176.7715
HHnc plume dist., feet		diss-->tot 1=y0=n	1
HHc plume dist., feet		Cu diss->tot1=y0=n	1
		cfs-->MGD	0.6463
Fischer/site specific dilutions:			
F/specific ZID Dilution =	---	Receiving Stream:	
F/specific MZ Dilution =	---	Default Hardness=	25
F/specific HHnc Dilution=	---	Default TSS=	10
F/specific HHc Dilution=	---	99 Crit., 1=y, 0=n	1

Partition Coefficients; Dissolved-->Total

METALS	MW
Total Arsenic	1
Total Cadmium	1
Chromium III	1
Chromium VI	1
Total Copper	1.136668
Total Lead	2.613166
Total Mercury	1
Total Nickel	1
Total Zinc	1.680101

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	69	36
Cadmium	45.34628	9.94
Chromium III	515	103
Chromium VI	1092.3	49.65
Copper	3.6271	3.6271
Lead	209.22	8.0835
Mercury	1.785	0.025
Nickel	74.25	8.217
Zinc	89.87	81.356

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] Overlapping mixing zones; Critical Flow, harmonic mean flow divided between Outfalls 007 and 010.

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent lbs/day	(*6) 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				0.028285			580	290	50	
3-Chlorophenol				0.05657						
4-Chlorophenol				0.05657			535	268		
2,3-Dichlorophenol				0.05657						
2,5-Dichlorophenol				0.05657						
2,6-Dichlorophenol				0.05657						
3,4-Dichlorophenol				0.05657						
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				0.05657			69	36		
Total Cadmium				0.005657			45.34628	9.94		
Chromium III				0.05657			515	103		
Chromium VI				0.05657			1092.3	49.65		
Total Copper [*2]				0.05657			4.122809	4.122809		
Total Lead		0.0254		0.028285	0	0.054102	546.7266	21.12353		
Total Mercury [*2]				0.001131			1.785	0.025		
Total Nickel				0.028285			74.25	8.217		
Total Zinc		0.081		0.11314	0	0.17253	150.9906	136.6863		
Total Cyanide				0.11314			1		12844	
DIOXIN										
2,3,7,8 TCDD: dioxin				5.7E-008					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene		0.093412	0.219601	0.05657	1		2700	1350	12.5	C
Bromoform [*2]				0.05657			1790	895	34.7	C
Bromodichloromethane				0.05657					3.3	C
Carbon Tetrachloride		0.232711	0.622748	0.05657	1		15000	7500	1.2	C
Chloroform		0.181908	0.532613	0.05657	1		8150	4075	70	C
Dibromochloromethane				0.05657					5.08	C
1,2-Dichloroethane		0.294986	0.940677	0.05657	1		11300	5650	6.8	C
1,1-Dichloroethylene		0.036054	0.098329	0.05657	1		22400	11200	0.58	C
1,3-Dichloropropylene		0.321207	1.301215	0.05657	1		79	39.5	162.79	
Ethylbenzene		0.232711	0.622748	0.05657	1		8760	4380	8100	
Methyl Chloride		0.180269	0.483449	0.282851	1		27000	13500		
Methylene Chloride		0.058997	0.278598	0.11314	1		25600	12800	87	C
1,1,2,2-Tetrachloro-ethane				0.05657			902	451	1.8	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 Out. 007	(*20) WQBL Max Out. 007	(*21) WQBL Avg Out. 007	(*22) WQBL Max Out. 007	(*23) Need WQBL? Final
	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)	1448.028	4630.138	2294.899	463.3689	2453.973	2294.899	463.3689	607.0132	1441.077	3.433887	8.152205	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	1335.681	4278.887	---	427.4178	2267.81	---	427.4178	559.9174	1329.269	3.167465	7.519706	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	172.2654	574.7758	---	55.12492	304.6312	---	55.12492	72.21364	171.4385	0.408514	0.969831	no
Total Cadmium	113.2115	158.702	---	36.22768	84.11205	---	36.22768	47.45826	112.6681	0.268472	0.637366	no
Chromium III	1285.749	1644.497	---	411.4396	871.5836	---	411.4396	538.9859	1279.577	3.049055	7.238596	no
Chromium VI	2727.036	792.7116	---	872.6514	420.1372	---	420.1372	550.3797	1306.627	3.11351	7.391615	no
Total Copper [*2]	---	---	---	---	---	---	---	---	---	0.12225	0.12225	yes
Total Lead	1364.957	337.2581	---	436.7864	178.7468	---	178.7468	234.1583	555.9026	1.324639	3.144753	no
Total Mercury [*2]	---	---	---	---	---	---	---	---	---	0.000841	0.000841	yes
Total Nickel	185.3725	131.1926	---	59.3192	69.53207	---	59.3192	77.70816	184.4827	0.439597	1.043623	no
Total Zinc	376.9631	2182.332	---	120.6282	1156.636	---	120.6282	158.0229	375.1537	0.893939	2.122253	no
Total Cyanide	2.496599	---	589513.7	0.798912	---	589513.7	0.798912	1.046574	2.484616	0.00592	0.014056	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000033	---	---	0.000033	0.000033	0.000033	0.000079	1.9E-007	4.4E-007	no
VOLATILE COMPOUNDS												
Benzene	6740.819	21554.09	573.7248	2157.062	11423.67	573.7248	573.7248	573.7248	1365.465	3.245574	7.724466	no
Bromoform [*2]	---	---	---	---	---	---	---	---	---	4.24	4.24	yes
Bromodichloromethane	---	---	151.4633	---	---	151.4633	151.4633	151.4633	360.4828	0.856831	2.039259	no
Carbon Tetrachloride	37448.99	119745	55.07758	11983.68	63464.83	55.07758	55.07758	55.07758	131.0846	0.311575	0.741549	no
Chloroform	20347.29	65061.43	3212.859	6511.131	34482.56	3212.859	3212.859	3212.859	7646.604	18.17521	43.25701	no
Dibromochloromethane	---	---	233.1618	---	---	233.1618	233.1618	233.1618	554.925	1.319001	3.139223	no
1,2-Dichloroethane	28211.57	90207.87	312.1063	9027.704	47810.17	312.1063	312.1063	312.1063	742.813	1.765592	4.202109	no
1,1-Dichloroethylene	55923.83	178819.1	26.62083	17895.62	94774.14	26.62083	26.62083	26.62083	63.35758	0.150595	0.358415	no
1,3-Dichloropropylene	197.2314	630.6568	7471.733	63.11403	334.2481	7471.733	63.11403	82.67938	196.2846	0.467719	1.110387	yes
Ethylbenzene	21870.21	69931.06	371773.7	6998.468	37063.46	371773.7	6998.468	9167.993	21765.23	51.86354	123.1264	no
Methyl Chloride	67408.19	215540.9	---	21570.62	114236.7	---	21570.62	28257.51	67084.63	159.8534	379.4992	no
Methylene Chloride	63912.95	204364.7	3993.125	20452.14	108313.3	3993.125	3993.125	3993.125	9503.636	22.58919	53.76228	no
1,1,2,2-Tetrachloro-ethane	2251.933	7200.664	82.61637	720.6185	3816.352	82.61637	82.61637	82.61637	196.627	0.467363	1.112323	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent 1=No 95% 0=95 % lbs/day	(*6) 95th % estimate Non-Tech lbs/day	(*7)	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.085218	0.268765	0.05657	1		1020	510	2.5	C
Toluene		0.045887	0.121272	0.05657	1		950	475	46200	
1,1,1-Trichloroethane		0.036054	0.09669	0.05657	1		3120	1560		
1,1,2-Trichloroethane		0.052442	0.208129	0.05657	1				6.9	C
Trichloroethylene		0.042609	0.113078	0.05657	1		200	100	21	C
Vinyl Chloride		0.158965	0.281875	0.05657	1				35.8	C
ACID COMPOUNDS										
2-Chlorophenol				0.05657					126.4	
2,4-Dichlorophenol				0.05657					232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine				0.282851					0.00017	C
Hexachlorobenzene [*2]		0.321207	1.301215	0.05657	1				0.00025	C
Hexachlorabutadiene [*2]		0.232711	0.622748	0.05657	1		1.6	0.32	0.11	C
PESTICIDES										
Aldrin				0.000283			1.3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.000283			0.16		0.2	C
Chlordane				0.001131			0.09	0.004	0.00019	C
4,4'-DDT				0.000566			0.13	0.001	0.00019	C
4,4'-DDE				0.000566			0.7	0.14	0.00019	C
4,4'-DDD				0.000566			1.25	0.25	0.00027	C
Dieldrin				0.000566			0.71	0.0019	0.00005	C
Endosulfan				0.000566			0.034	0.0087	0.64	
Endrin				0.000566			0.037	0.0023	0.26	
Heptachlor				0.000283			0.053	0.0036	0.00007	C
PCB 1254 [*2]										
Toxaphene				0.028285			0.21	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							13	7.5		
Ammonia								4000		
Chlorides		1575			0	3354.75				
Sulfates										
TDS		4902			0	10441.26				
1,1,2,2, Tetrachloroethane [*2]										

[*2] TMDL Parameter effective on June 13, 2008.

Outfalls 007 and 010 shall be reported as the sum of the combined loading (not to exceed the Daily Max Loading listed).

(*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 Out. 007	(*20) WQBL Max Out. 007	(*21) WQBL Avg Out. 007	(*22) WQBL MaxWQBL? Out. 007	(*23) Need Final
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	2546.531	8142.657	114.745	814.8901	4315.608	114.745	114.745	114.745	273.093	0.649115	1.544893	no
Toluene	2371.769	7583.847	2120487	758.9662	4019.439	2120487	758.9662	994.2458	2360.385	5.62447	13.35275	no
1,1,1-Trichloroethane	7789.39	24906.95	---	2492.605	13200.68	---	2492.605	3265.312	7752.001	18.47194	43.85324	no
1,1,2-Trichloroethane	---	---	316.6961	---	---	316.6961	316.6961	316.6961	753.7367	1.791557	4.263905	no
Trichloroethylene	499.3199	1596.599	963.8577	159.7824	846.1977	963.8577	159.7824	209.3149	496.9232	1.184099	2.811105	no
Vinyl Chloride	---	---	1643.148	---	---	1643.148	1643.148	1643.148	3910.692	9.295323	22.12287	no
ACID COMPOUNDS												
2-Chlorophenol	---	---	5801.505	---	---	5801.505	5801.505	5801.505	13807.58	32.81924	78.1098	no
2,4-Dichlorophenol	---	---	10675.87	---	---	10675.87	10675.87	10675.87	25408.57	60.39364	143.7369	no
BASE NEUTRAL COMPOUNDS												
Benzidine	---	---	0.007803	---	---	0.007803	0.007803	0.007803	0.01857	0.000044	0.000105	no
Hexachlorobenzene [*2]	---	---	---	---	---	---	---	---	---	0.000031	0.000031	yes
Hexachlorabutadiene [*2]	---	---	---	---	---	---	---	---	---	0.013	0.013	yes
PESTICIDES												
Aldrin	3.245579	---	0.018359	1.038585	---	0.018359	0.018359	0.018359	0.043695	0.000104	0.000247	no
Hexachlorocyclohexane (gamma BHC, Lindane)	0.399456	---	9.179597	0.127826	---	9.179597	0.127826	0.167452	0.397539	0.000947	0.002249	no
Chlordane	0.224694	0.063864	0.008721	0.071902	0.033848	0.008721	0.008721	0.008721	0.020755	0.000049	0.000117	no
4,4'-DDT	0.324558	0.015966	0.008721	0.103859	0.008462	0.008721	0.008462	0.011085	0.026317	0.000063	0.000149	no
4,4'-DDE	1.74762	2.235239	0.008721	0.559238	1.184677	0.008721	0.008721	0.008721	0.020755	0.000049	0.000117	no
4,4'-DDD	3.120749	3.991499	0.012392	0.99864	2.115494	0.012392	0.012392	0.012392	0.029494	0.00007	0.000167	no
Dieldrin	1.772586	0.030335	0.002295	0.567227	0.016078	0.002295	0.002295	0.002295	0.005462	0.000013	0.000031	no
Endosulfan	0.084884	0.138904	29.37471	0.027163	0.073619	29.37471	0.027163	0.035584	0.084477	0.000201	0.000478	no
Endrin	0.092374	0.036722	11.93348	0.02956	0.019463	11.93348	0.019463	0.025496	0.060529	0.000144	0.000342	no
Heptachlor	0.13232	0.057478	0.003213	0.042342	0.030463	0.003213	0.003213	0.003213	0.007647	0.000018	0.000043	no
PCB 1254 [*2]										0.000001	0.000001	yes
Toxaphene	0.524286	0.003193	0.011016	0.167771	0.001692	0.011016	0.001692	0.002217	0.005263	0.000013	0.00003	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	32.45579	119.745	---	10.38585	63.46483	---	10.38585	13.60547	32.30001	0.076966	0.182722	no
Ammonia	---	63863.98	---	---	33847.91	---	33847.91	44340.76	105267	250.8367	595.4977	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
1,1,2,2, Tetrachloroethane [*2]										0.22	0.22	yes
	---	---	---	---	---	---	---	---	---			
[*2] TMDL Parameter effe	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 10:14 AM

Software: Lotus 4.0 LA0071382, AI9061

Revision date: 12/13/02

Water Quality Screen for Westlake Polymers LP / Poly I & II Polyethylene Production Facility

Input variables:

Receiving Water Characteristics:		Dilution:	
		ZID Fs =	0.1
Receiving Water Name=	Bayou D'Inde		
Critical flow (Qr)cfs[*1]	15.443	MZ Fs =	1
Harm. mean cfs [*1]=	46.329	Critical Qr (MGD)=	9.980811
Drinking Water=1 HHNPCR=2	0	Harm. Mean (MGD)=	29.94243
Marine, 1=y, 0=n	1	ZID Dilution =	0.343705
Rec. Water Hardness=	888.1	MZ Dilution =	0.049764
Rec. Water TSS=	9.65	HHnc Dilution=	0.017157
Fisch/Specific=1,Stream=0		HHc Dilution=	0.017157
Diffuser Ratio=		ZID Upstream =	1.909472
		MZ Upstream =	19.09472
Effluent Characteristics:		MZhhnc Upstream=	19.09472
Permittee=	Westlake Polymers LP / Poly I & II Polyethylene Produc		
Permit Number=	LA0071382, AI9061		
Outfallflow (Qef),MGD=	0.5227	MZhhc Upstream=	57.28416
		ZID Hardness=	---
Outfall Number =	Out. 010 Interim	MZ Hardness=	---
Eff. data, 2=lbs/day	2	ZID TSS=	---
MQL, 2=lbs/day	2	MZ TSS=	---
Effluent Hardness=	N/A	Multipliers:	
Effluent TSS=	N/A	WLAa --> LTAa	0.32
WQBL ind. 0=y, 1=n		WLAc --> LTAc	0.53
Acute/Chr. ratio 0=n, 1=y	0	LTA a,c-->WQBL avg	1.31
Aquatic,acute only1=y,0=n		LTA a,c-->WQBL max	3.11
		LTA h --> WQBL max	2.38
Page Numbering/Labeling		WQBL-limit/report	2.13
Appendix	Revised Appendix B	WLA Fraction	1
Page Numbers 1=y, 0=n	1	WQBL Fraction	1
Input Page # 1=y, 0=n	1		
		Conversions:	
Fischer/Site Specific inputs:		ug/L-->lbs/day Qef	0.004359
Pipe=1,Canal=2,Specific=3		ug/L-->lbs/day Qeo	0
Pipe width, feet		ug/L-->lbs/day Qr	0.128795
ZID plume dist., feet		lbs/day-->ug/L Qeo	229.3937
MZ plume dist., feet		lbs/day-->ug/L Qef	229.3937
HHnc plume dist., feet		diss-->tot 1=y0=n	1
HHc plume dist., feet		Cu diss->tot1=y0=n	1
		cfs-->MGD	0.6463
Fischer/site specific dilutions:			
F/specific ZID Dilution =	---	Receiving Stream:	
F/specific MZ Dilution =	---	Default Hardness=	25
F/specific HHnc Dilution=	---	Default TSS=	10
F/specific HHc Dilution=	---	99 Crit., 1=y, 0=n	1

Partition Coefficients; Dissolved-->Total

METALS	MW
Total Arsenic	1
Total Cadmium	1
Chromium III	1
Chromium VI	1
Total Copper	1.136668
Total Lead	2.613166
Total Mercury	1
Total Nickel	1
Total Zinc	1.680101

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	69	36
Cadmium	45.34628	9.94
Chromium III	515	103
Chromium VI	1092.3	49.65
Copper	3.6271	3.6271
Lead	209.22	8.0835
Mercury	1.785	0.025
Nickel	74.25	8.217
Zinc	89.87	81.356

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] Overlapping mixing zones; Critical Flow, harmonic mean flow divided between Outfalls 007 and 010.

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent lbs/day	(*6) 1=No 95% 0=95 %	(*7) 95th % estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				0.021797			580	290	50	
3-Chlorophenol				0.043593						
4-Chlorophenol				0.043593			535	268		
2,3-Dichlorophenol				0.043593						
2,5-Dichlorophenol				0.043593						
2,6-Dichlorophenol				0.043593						
3,4-Dichlorophenol				0.043593						
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				0.043593			69	36		
Total Cadmium				0.004359			45.34628	9.94		
Chromium III				0.043593			515	103		
Chromium VI				0.043593			1092.3	49.65		
Total Copper		0.044		0.043593	0	0.09372	4.122809	4.122809		
Total Lead		0.0293		0.021797	0	0.062409	546.7266	21.12353		
Total Mercury				0.000872			1.785	0.025		
Total Nickel				0.021797			74.25	8.217		
Total Zinc		0.111		0.087186	0	0.23643	150.9906	136.6863		
Total Cyanide				0.087186			1		12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				4.4E-008					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene		0.106057	0.249328	0.043593	1		2700	1350	12.5	C
Bromoform				0.043593			1790	895	34.7	C
Bromodichloromethane				0.043593					3.3	C
Carbon Tetrachloride		0.264213	0.707049	0.043593	1		15000	7500	1.2	C
Chloroform		0.206533	0.604713	0.043593	1		8150	4075	70	C
Dibromochloromethane				0.043593					5.08	C
1,2-Dichloroethane		0.334918	1.068015	0.043593	1		11300	5650	6.8	C
1,1-Dichloroethylene		0.040934	0.111639	0.043593	1		22400	11200	0.58	C
1,3-Dichloropropylene		0.364688	1.477359	0.043593	1		79	39.5	162.79	
Ethylbenzene		0.264213	0.707049	0.043593	1		8760	4380	8100	
Methyl Chloride		0.204672	0.548893	0.217966	1		27000	13500		
Methylene Chloride		0.066984	0.316311	0.087186	1		25600	12800	87	C
1,1,2,2-Tetrachloro-ethane				0.043593			902	451	1.8	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 Out. 010	(*20) WQBL Max Out. 010	(*21) WQBL Avg Out. 010	(*22) WQBL MaxOut. 010	(*23) Need WQBL? Inter
	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)	1687.494	5827.469	2914.208	539.998	3088.559	2914.208	539.998	707.3974	1679.394	3.08377	7.321012	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	1556.568	5385.385	---	498.1016	2854.254	---	498.1016	652.5131	1549.096	2.844512	6.753002	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	200.7536	723.41	---	64.24114	383.4073	---	64.24114	84.1559	199.79	0.366862	0.870948	no
Total Cadmium	131.9337	199.7415	---	42.2188	105.863	---	42.2188	55.30662	131.3005	0.241099	0.57238	no
Chromium III	1498.378	2069.756	---	479.481	1096.971	---	479.481	628.1201	1491.186	2.738175	6.500554	no
Chromium VI	3178.016	997.7029	---	1016.965	528.7825	---	528.7825	692.7051	1644.514	3.019722	7.168958	no
Total Copper	11.9952	82.84671	---	3.838464	43.90875	---	3.838464	5.028387	11.93762	0.02192	0.05204	yes
Total Lead	1590.686	424.4714	---	509.0195	224.9699	---	224.9699	294.7105	699.6562	1.284737	3.050024	no
Total Mercury	5.193408	0.502368	---	1.66189	0.266255	---	0.266255	0.348794	0.828053	0.001521	0.00361	no
Total Nickel	216.0283	165.1183	---	69.12906	87.51271	---	69.12906	90.55907	214.9914	0.394776	0.937216	no
Total Zinc	439.303	2746.672	---	140.577	1455.736	---	140.577	184.1558	437.1944	0.802794	1.905869	no
Total Cyanide	2.909472	---	748601.8	0.931031	---	748601.8	0.931031	1.219651	2.895507	0.005317	0.012622	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000042	---	---	0.000042	0.000042	0.000042	0.0001	1.8E-007	4.4E-007	no
VOLATILE COMPOUNDS												
Benzene	7855.575	27127.87	728.5521	2513.784	14377.77	728.5521	728.5521	728.5521	1733.954	3.17599	7.558856	no
Bromoform	5207.955	17984.78	2022.461	1666.546	9531.931	2022.461	1666.546	2183.175	5182.957	9.517153	22.59416	no
Bromodichloromethane	---	---	192.3377	---	---	192.3377	192.3377	192.3377	457.7638	0.838461	1.995538	no
Carbon Tetrachloride	43642.08	150710.4	69.941	13965.47	79876.52	69.941	69.941	69.941	166.4596	0.304895	0.72565	no
Chloroform	23712.2	81885.99	4079.892	7587.903	43399.57	4079.892	4079.892	4079.892	9710.142	17.78554	42.3296	no
Dibromochloromethane	---	---	296.0836	---	---	296.0836	296.0836	296.0836	704.6789	1.290722	3.071919	no
1,2-Dichloroethane	32877.04	113535.2	396.3323	10520.65	60173.64	396.3323	396.3323	396.3323	943.2709	1.727739	4.112018	no
1,1-Dichloroethylene	65172.18	225060.9	33.80482	20855.1	119282.3	33.80482	33.80482	33.80482	80.45546	0.147366	0.350731	no
1,3-Dichloropropylene	229.8483	793.7415	9488.079	73.55146	420.683	9488.079	73.55146	96.35241	228.745	0.420031	0.997172	yes
Ethylbenzene	25486.98	88014.88	472101.7	8155.832	46647.89	472101.7	8155.832	10684.14	25364.64	46.57557	110.5725	no
Methyl Chloride	78555.75	271278.7	---	25137.84	143777.7	---	25137.84	32930.57	78178.68	143.5548	340.8057	no
Methylene Chloride	74482.49	257212.4	5070.722	23834.4	136322.6	5070.722	5070.722	5070.722	12068.32	22.10489	52.60964	no
1,1,2,2-Tetrachloro-ethane	2624.344	9062.719	104.9115	839.79	4803.241	104.9115	104.9115	104.9115	249.6894	0.457343	1.088475	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent lbs/day	(*6) 95th % 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.096754	0.305147	0.043593	1		1020	510	2.5	C
Toluene		0.052098	0.137688	0.043593	1		950	475	46200	
1,1,1-Trichloroethane		0.040934	0.109779	0.043593	1		3120	1560		
1,1,2-Trichloroethane		0.059541	0.236303	0.043593	1				6.9	C
Trichloroethylene		0.048377	0.128385	0.043593	1		200	100	21	C
Vinyl Chloride		0.180483	0.320032	0.043593	1				35.8	C
ACID COMPOUNDS										
2-Chlorophenol				0.043593					126.4	
2,4-Dichlorophenol				0.043593					232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine				0.217966					0.00017	C
Hexachlorobenzene		0.364688	1.477359	0.043593	1				0.00025	C
Hexachlorabutadiene		0.264213	0.707049	0.043593	1		1.6	0.32	0.11	C
PESTICIDES										
Aldrin				0.000218			1.3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.000218			0.16		0.2	C
Chlordane				0.000872			0.09	0.004	0.00019	C
4,4'-DDT				0.000436			0.13	0.001	0.00019	C
4,4'-DDE				0.000436			0.7	0.14	0.00019	C
4,4'-DDD				0.000436			1.25	0.25	0.00027	C
Dieldrin				0.000436			0.71	0.0019	0.00005	C
Endosulfan				0.000436			0.034	0.0087	0.64	
Endrin				0.000436			0.037	0.0023	0.26	
Heptachlor				0.000218			0.053	0.0036	0.00007	C
Toxaphene				0.021797			0.21	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							13	7.5		
Ammonia								4000		
Chlorides		384.1			0	818.133				
Sulfates										
TDS		2298			0	4894.74				

(*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 Out.	(*20) WQBL Max 010 Out.	(*21) WQBL Avg 010 Out.	(*22) WQBL Max 010 Out.	(*23) Need WQBL? Inter
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	2967.662	10248.31	145.7104	949.6517	5431.603	145.7104	145.7104	145.7104	346.7908	0.635198	1.511771	no
Toluene	2763.999	9544.993	2692728	884.4795	5058.846	2692728	884.4795	1158.668	2750.731	5.051003	11.99131	no
1,1,1-Trichloroethane	9077.553	31347.77	---	2904.817	16614.32	---	2904.817	3805.31	9033.981	16.58856	39.382	no
1,1,2-Trichloroethane	---	---	402.1607	---	---	402.1607	402.1607	402.1607	957.1425	1.753147	4.172489	no
Trichloroethylene	581.8944	2009.472	1223.967	186.2062	1065.02	1223.967	186.2062	243.9301	579.1013	1.063369	2.524487	no
Vinyl Chloride	---	---	2086.573	---	---	2086.573	2086.573	2086.573	4966.044	9.096036	21.64856	no
ACID COMPOUNDS												
2-Chlorophenol	---	---	7367.118	---	---	7367.118	7367.118	7367.118	17533.74	32.11561	76.43516	no
2,4-Dichlorophenol	---	---	13556.9	---	---	13556.9	13556.9	13556.9	32265.41	59.09882	140.6552	no
BASE NEUTRAL COMPOUNDS												
Benzidine	---	---	0.009908	---	---	0.009908	0.009908	0.009908	0.023582	0.000043	0.000103	no
Hexachlorobenzene	---	---	0.014571	---	---	0.014571	0.014571	0.014571	0.034679	0.000064	0.000151	yes
Hexachlorabutadiene	4.655155	6.430311	6.411258	1.48965	3.408065	6.411258	1.48965	1.951441	4.632811	0.008507	0.020196	yes
PESTICIDES												
Aldrin	3.782314	---	0.023314	1.21034	---	0.023314	0.023314	0.023314	0.055487	0.000102	0.000242	no
Hexachlorocyclohexane (gamma BHC, Lindane)	0.465516	---	11.65683	0.148965	---	11.65683	0.148965	0.195144	0.463281	0.000851	0.00202	no
Chlordane	0.261852	0.080379	0.011074	0.083793	0.042601	0.011074	0.011074	0.011074	0.026356	0.000048	0.000115	no
4,4'-DDT	0.378231	0.020095	0.011074	0.121034	0.01065	0.011074	0.01065	0.013952	0.033122	0.000061	0.000144	no
4,4'-DDE	2.036631	2.813261	0.011074	0.651722	1.491028	0.011074	0.011074	0.011074	0.026356	0.000048	0.000115	no
4,4'-DDD	3.63684	5.02368	0.015737	1.163789	2.662551	0.015737	0.015737	0.015737	0.037453	0.000069	0.000163	no
Dieldrin	2.065725	0.03818	0.002914	0.661032	0.020235	0.002914	0.002914	0.002914	0.006936	0.000013	0.00003	no
Endosulfan	0.098922	0.174824	37.30187	0.031655	0.092657	37.30187	0.031655	0.041468	0.098447	0.000181	0.000429	no
Endrin	0.10765	0.046218	15.15388	0.034448	0.024495	15.15388	0.024495	0.032089	0.076181	0.00014	0.000332	no
Heptachlor	0.154202	0.072341	0.00408	0.049345	0.038341	0.00408	0.00408	0.00408	0.00971	0.000018	0.000042	no
Toxaphene	0.610989	0.004019	0.013988	0.195517	0.00213	0.013988	0.00213	0.00279	0.006624	0.000012	0.000029	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	37.82314	150.7104	---	12.1034	79.87652	---	12.1034	15.85546	37.64159	0.069119	0.164092	no
Ammonia	---	80378.89	---	---	42600.81	---	42600.81	55807.06	132488.5	243.2807	577.5596	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

Developer: Bruce Fielding Time: 06:29 AM

Software: Lotus 4.0 LA0071382, AI9061

Revision date: 12/13/02

Water Quality Screen for Westlake Polymers LP / Poly I & II Polyethylene Production Facility

Input variables:

Receiving Water Characteristics:		Dilution:	
		ZID Fs =	0.1
Receiving Water Name=	*Bayou D'Inde*		
Critical flow (Qr)cfs[*1]	15.443	MZ Fs =	1
Harm. mean cfs [*1]=	46.329	Critical Qr (MGD)=	9.980811
Drinking Water=1 HHNPCR=2	0	Harm. Mean (MGD)=	29.94243
Marine, 1=y, 0=n	1	ZID Dilution =	0.343705
Rec. Water Hardness=	888.1	MZ Dilution =	0.049764
Rec. Water TSS=	9.65	HHnc Dilution=	0.017157
Fisch/Specific=1,Stream=0		HHc Dilution=	0.017157
Diffuser Ratio=		ZID Upstream =	1.909472
		MZ Upstream =	19.09472
Effluent Characteristics:		MZhhnc Upstream=	19.09472
Permittee=	Westlake Polymers LP / Poly I & II Polyethylene Produc		
Permit Number=	LA0071382, AI9061		
Outfallflow (Qef),MGD=	0.5227	MZhhc Upstream=	57.28416
		ZID Hardness=	---
Outfall Number =	Out. 010 Final	MZ Hardness=	---
Eff. data, 2=lbs/day	2	ZID TSS=	---
MQL, 2=lbs/day	2	MZ TSS=	---
Effluent Hardness=	N/A	Multipliers:	
Effluent TSS=	N/A	WLAa --> LTAa	0.32
WQBL ind. 0=y, 1=n		WLAc --> LTAc	0.53
Acute/Chr. ratio 0=n, 1=y	0	LTA a,c-->WQBL avg	1.31
Aquatic,acute only1=y,0=n		LTA a,c-->WQBL max	3.11
		LTA h --> WQBL max	2.38
Page Numbering/Labeling		WQBL-limit/report	2.13
Appendix	Revised Appendix B	WLA Fraction	1
Page Numbers 1=y, 0=n	1	WQBL Fraction	1
Input Page # 1=y, 0=n	1		
		Conversions:	
Fischer/Site Specific inputs:		ug/L-->lbs/day Qef	0.004359
Pipe=1,Canal=2,Specific=3		ug/L-->lbs/day Qeo	0
Pipe width, feet		ug/L-->lbs/day Qr	0.128795
ZID plume dist., feet		lbs/day-->ug/L Qeo	229.3937
MZ plume dist., feet		lbs/day-->ug/L Qef	229.3937
HHnc plume dist., feet		diss-->tot 1=y0=n	1
HHc plume dist., feet		Cu diss->tot1=y0=n	1
		cfs-->MGD	0.6463
Fischer/site specific dilutions:			
F/specific ZID Dilution =	---	Receiving Stream:	
F/specific MZ Dilution =	---	Default Hardness=	25
F/specific HHnc Dilution=	---	Default TSS=	10
F/specific HHc Dilution=	---	99 Crit., 1=y, 0=n	1

Partition Coefficients; Dissolved-->Total

METALS	MW
Total Arsenic	1
Total Cadmium	1
Chromium III	1
Chromium VI	1
Total Copper	1.136668
Total Lead	2.613166
Total Mercury	1
Total Nickel	1
Total Zinc	1.680101

Aquatic Life, Dissolved Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	69	36
Cadmium	45.34628	9.94
Chromium III	515	103
Chromium VI	1092.3	49.65
Copper	3.6271	3.6271
Lead	209.22	8.0835
Mercury	1.785	0.025
Nickel	74.25	8.217
Zinc	89.87	81.356

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] Overlapping mixing zones; Critical Flow, harmonic mean flow divided between Outfalls 007 and 010.

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent 95th % lbs/day	(*6) 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)				0.021797			580	290	50	
3-Chlorophenol				0.043593						
4-Chlorophenol				0.043593			535	268		
2,3-Dichlorophenol				0.043593						
2,5-Dichlorophenol				0.043593						
2,6-Dichlorophenol				0.043593						
3,4-Dichlorophenol				0.043593						
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				0.043593			69	36		
Total Cadmium				0.004359			45.34628	9.94		
Chromium III				0.043593			515	103		
Chromium VI				0.043593			1092.3	49.65		
Total Copper [*2]		0.044		0.043593	0	0.09372	4.122809	4.122809		
Total Lead		0.0293		0.021797	0	0.062409	546.7266	21.12353		
Total Mercury [*2]				0.000872			1.785	0.025		
Total Nickel				0.021797			74.25	8.217		
Total Zinc		0.111		0.087186	0	0.23643	150.9906	136.6863		
Total Cyanide				0.087186			1		12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				4.4E-008					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene		0.106057	0.249328	0.043593	1		2700	1350	12.5	C
Bromoform [*2]				0.043593			1790	895	34.7	C
Bromodichloromethane				0.043593					3.3	C
Carbon Tetrachloride		0.264213	0.707049	0.043593	1		15000	7500	1.2	C
Chloroform		0.206533	0.604713	0.043593	1		8150	4075	70	C
Dibromochloromethane				0.043593					5.08	C
1,2-Dichloroethane		0.334918	1.068015	0.043593	1		11300	5650	6.8	C
1,1-Dichloroethylene		0.040934	0.111639	0.043593	1		22400	11200	0.58	C
1,3-Dichloropropylene		0.364688	1.477359	0.043593	1		79	39.5	162.79	
Ethylbenzene		0.264213	0.707049	0.043593	1		8760	4380	8100	
Methyl Chloride		0.204672	0.548893	0.217966	1		27000	13500		
Methylene Chloride		0.066984	0.316311	0.087186	1		25600	12800	87	C
1,1,2,2-Tetrachloro-ethane				0.043593			902	451	1.8	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 Out. 010	(*20) WQBL Max Out. 010	(*21) WQBL Avg Out. 010	(*22) WQBL MaxFOut. 010	(*23) Need WQBL? Final
	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)	1687.494	5827.469	2914.208	539.998	3088.559	2914.208	539.998	707.3974	1679.394	3.0837703	7.3210119	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	1556.568	5385.385	---	498.1016	2854.254	---	498.1016	652.5131	1549.096	2.8445123	6.7530024	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	200.7536	723.41	---	64.24114	383.4073	---	64.24114	84.1559	199.79	0.3668623	0.870948	no
Total Cadmium	131.9337	199.7415	---	42.2188	105.863	---	42.2188	55.30662	131.3005	0.2410992	0.5723804	no
Chromium III	1498.378	2069.756	---	479.481	1096.971	---	479.481	628.1201	1491.186	2.7381754	6.5005537	no
Chromium VI	3178.016	997.7029	---	1016.965	528.7825	---	528.7825	692.7051	1644.514	3.019722	7.1689583	no
Total Copper [*2]	---	---	---	---	---	---	---	---	---	0.12225	0.12225	yes
Total Lead	1590.686	424.4714	---	509.0195	224.9699	---	224.9699	294.7105	699.6562	1.2847368	3.0500241	no
Total Mercury [*2]	---	---	---	---	---	---	---	---	---	0.000841	0.000841	yes
Total Nickel	216.0283	165.1183	---	69.12906	87.51271	---	69.12906	90.55907	214.9914	0.3947758	0.9372158	no
Total Zinc	439.303	2746.672	---	140.577	1455.736	---	140.577	184.1558	437.1944	0.8027939	1.9058694	no
Total Cyanide	2.909472	---	748601.8	0.931031	---	748601.8	0.931031	1.219651	2.895507	0.0053168	0.0126224	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000042	---	---	0.000042	0.000042	0.000042	0.0001	0.0000002	0.0000004	no
VOLATILE COMPOUNDS												
Benzene	7855.575	27127.87	728.5521	2513.784	14377.77	728.5521	728.5521	728.5521	1733.954	3.1759901	7.5588564	no
Bromoform [*2]	---	---	---	---	---	---	---	---	---	4.24	4.24	yes
Bromodichloromethane	---	---	192.3377	---	---	192.3377	192.3377	192.3377	457.7638	0.8384614	1.9955381	no
Carbon Tetrachloride	43642.08	150710.4	69.941	13965.47	79876.52	69.941	69.941	69.941	166.4596	0.304895	0.7256502	no
Chloroform	23712.2	81885.99	4079.892	7587.903	43399.57	4079.892	4079.892	4079.892	9710.142	17.785544	42.329596	no
Dibromochloromethane	---	---	296.0836	---	---	296.0836	296.0836	296.0836	704.6789	1.2907224	3.0719192	no
1,2-Dichloroethane	32877.04	113535.2	396.3323	10520.65	60173.64	396.3323	396.3323	396.3323	943.2709	1.7277386	4.1120179	no
1,1-Dichloroethylene	65172.18	225060.9	33.80482	20855.1	119282.3	33.80482	33.80482	33.80482	80.45546	0.1473659	0.3507309	no
1,3-Dichloropropylene	229.8483	793.7415	9488.079	73.55146	420.683	9488.079	73.55146	96.35241	228.745	0.4200308	0.9971723	yes
Ethylbenzene	25486.98	88014.88	472101.7	8155.832	46647.89	472101.7	8155.832	10684.14	25364.64	46.575565	110.57253	no
Methyl Chloride	78555.75	271278.7	---	25137.84	143777.7	---	25137.84	32930.57	78178.68	143.55482	340.80573	no
Methylene Chloride	74482.49	257212.4	5070.722	23834.4	136322.6	5070.722	5070.722	5070.722	12068.32	22.104891	52.609641	no
1,1,2,2-Tetrachloro-ethane	2624.344	9062.719	104.9115	839.79	4803.241	104.9115	104.9115	104.9115	249.6894	0.4573426	1.0884753	no

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent /Tech (Avg) lbs/day	(*4) Effluent /Tech (Max) lbs/day	(*5) MQLEffluent 95th % lbs/day	(*6) 1=No 95% 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria Acute MW ug/L	(*9) Chronic MW ug/L	(*10) HHNDW ug/L	(*11) HH Carcinogen Indicator "C"
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		0.096754	0.305147	0.043593	1		1020	510	2.5	C
Toluene		0.052098	0.137688	0.043593	1		950	475	46200	
1,1,1-Trichloroethane		0.040934	0.109779	0.043593	1		3120	1560		
1,1,2-Trichloroethane		0.059541	0.236303	0.043593	1				6.9	C
Trichloroethylene		0.048377	0.128385	0.043593	1		200	100	21	C
Vinyl Chloride		0.180483	0.320032	0.043593	1				35.8	C
ACID COMPOUNDS										
2-Chlorophenol				0.043593					126.4	
2,4-Dichlorophenol				0.043593					232.6	
BASE NEUTRAL COMPOUNDS										
Benzidine				0.217966					0.00017	C
Hexachlorobenzene [*2]		0.364688	1.477359	0.043593	1				0.00025	C
Hexachlorabutadiene [*2]		0.264213	0.707049	0.043593	1		1.6	0.32	0.11	C
PESTICIDES										
Aldrin				0.000218			1.3		0.0004	C
Hexachlorocyclohexane (gamma BHC, Lindane)				0.000218			0.16		0.2	C
Chlordane				0.000872			0.09	0.004	0.00019	C
4,4'-DDT				0.000436			0.13	0.001	0.00019	C
4,4'-DDE				0.000436			0.7	0.14	0.00019	C
4,4'-DDD				0.000436			1.25	0.25	0.00027	C
Dieldrin				0.000436			0.71	0.0019	0.00005	C
Endosulfan				0.000436			0.034	0.0087	0.64	
Endrin				0.000436			0.037	0.0023	0.26	
Heptachlor				0.000218			0.053	0.0036	0.00007	C
PCB - 1254 [*2]										
Toxaphene				0.021797			0.21	0.0002	0.00024	C
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine							13	7.5		
Ammonia								4000		
Chlorides		384.1			0	818.133				
Sulfates										
TDS		2298			0	4894.74				
1,1,2,2 Tetrachloroethane [*2]										

[*2] TMDL Parameter, effective on June 13, 2008.
Outfalls 007 and 010 shall be reported as the sum of the combined loading (not to exceed the Daily Max listed).

(*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 Out. 010	(*20) WQBL Max Out. 010	(*21) WQBL Avg Out. 010	(*22) WQBL MaxWQBL? FOut. 010	(*23) Need Final
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
Tetrachloroethylene	2967.662	10248.31	145.7104	949.6517	5431.603	145.7104	145.7104	145.7104	346.7908	0.635198	1.5117713	no
Toluene	2763.999	9544.993	2692728	884.4795	5058.846	2692728	884.4795	1158.668	2750.731	5.0510031	11.991313	no
1,1,1-Trichloroethane	9077.553	31347.77	---	2904.817	16614.32	---	2904.817	3805.31	9033.981	16.588557	39.381995	no
1,1,2-Trichloroethane	---	---	402.1607	---	---	402.1607	402.1607	402.1607	957.1425	1.7531465	4.1724887	no
Trichloroethylene	581.8944	2009.472	1223.967	186.2062	1065.02	1223.967	186.2062	243.9301	579.1013	1.0633691	2.5244869	no
Vinyl Chloride	---	---	2086.573	---	---	2086.573	2086.573	2086.573	4966.044	9.0960356	21.648565	no
ACID COMPOUNDS												
2-Chlorophenol	---	---	7367.118	---	---	7367.118	7367.118	7367.118	17533.74	32.115612	76.435156	no
2,4-Dichlorophenol	---	---	13556.9	---	---	13556.9	13556.9	13556.9	32265.41	59.098823	140.6552	no
BASE NEUTRAL COMPOUNDS												
Benzidine	---	---	0.009908	---	---	0.009908	0.009908	0.009908	0.023582	0.0000432	0.0001028	no
Hexachlorobenzene [*2]	---	---	---	---	---	---	---	---	---	0.0000305	0.0000305	yes
Hexachlorabutadiene [*2]	---	---	---	---	---	---	---	---	---	0.013	0.013	yes
PESTICIDES												
Aldrin	3.782314	---	0.023314	1.21034	---	0.023314	0.023314	0.023314	0.055487	0.0001016	0.0002419	no
Hexachlorocyclohexane (gamma BHC, Lindane)	0.465516	---	11.65683	0.148965	---	11.65683	0.148965	0.195144	0.463281	0.0008507	0.0020196	no
Chlordane	0.261852	0.080379	0.011074	0.083793	0.042601	0.011074	0.011074	0.011074	0.026356	0.0000483	0.0001149	no
4,4'-DDT	0.378231	0.020095	0.011074	0.121034	0.01065	0.011074	0.01065	0.013952	0.033122	0.0000608	0.0001444	no
4,4'-DDE	2.036631	2.813261	0.011074	0.651722	1.491028	0.011074	0.011074	0.011074	0.026356	0.0000483	0.0001149	no
4,4'-DDD	3.63684	5.02368	0.015737	1.163789	2.662551	0.015737	0.015737	0.015737	0.037453	0.0000686	0.0001633	no
Dieldrin	2.065725	0.03818	0.002914	0.661032	0.020235	0.002914	0.002914	0.002914	0.006936	0.0000127	0.0000302	no
Endosulfan	0.098922	0.174824	37.30187	0.031655	0.092657	37.30187	0.031655	0.041468	0.098447	0.0001808	0.0004292	no
Endrin	0.10765	0.046218	15.15388	0.034448	0.024495	15.15388	0.024495	0.032089	0.076181	0.0001399	0.0003321	no
Heptachlor	0.154202	0.072341	0.00408	0.049345	0.038341	0.00408	0.00408	0.00408	0.00971	0.0000178	0.0000423	no
PCB - 1254 [*2]										0.0000012	0.0000012	yes
Toxaphene	0.610989	0.004019	0.013988	0.195517	0.00213	0.013988	0.00213	0.00279	0.006624	0.0000122	0.0000289	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	37.82314	150.7104	---	12.1034	79.87652	---	12.1034	15.85546	37.64159	0.069119	0.1640916	no
Ammonia	---	80378.89	---	---	42600.81	---	42600.81	55807.06	132488.5	243.28072	577.55958	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
1,1,2,2 Tetrachloroethane [*2]										0.22	0.22	yes
	---	---	---	---	---	---	---	---	---	---	---	no
[*2] TMDL Parameter, eff	---	---	---	---	---	---	---	---	---	---	---	no

REVISED APPENDIX B-5 LA0071382, AI No. 9061

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: unnamed ditch, thence to Bayou D'Inde, thence to the Calcasieu River
Critical Flow, Qrc (cfs):31.15 [*1]
Harmonic Mean Flow, Qrh (cfs): 93.45 [*1]
Segment No.: 030901
Receiving Stream Hardness (mg/L): 888.1
Receiving Stream TSS (mg/L): 9.65
MZ Stream Factor, Fs: 1
Plume distance, Pf: N/A

[*1] The mixing zones of Outfalls 007 and 010 overlap, therefore, the critical flow and harmonic mean were divided on a flow weighted basis.

Outfall 007 - Harmonic Mean Flow, cfs: 47.121
Critical Flow, cfs: 15.707

Outfall 010 - Harmonic Mean Flow, cfs: 46.329
Critical Flow, cfs: 15.443

Effluent Characteristics:

Company: Westlake Polymers LP, Outfalls 007 and 010
Facility flow, Qe (MGD): 1.345
Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0071382

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:

Critical

Discharge from a canal:

Critical

$$\text{Dilution} = \frac{(2.8)\ Pw\ \pi^{1/2}}{Pf} \qquad \text{Dilution} = \frac{(2.38)(Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu)\ Pf^{*}}{(2.8)\ Pw\ \pi^{1/2}} \qquad WLA = \frac{(Cr-Cu)\ Pf^{1/2*}}{2.38\ Pw^{1/2}}$$

* 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

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

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 ($LTA_{limiting\ aquatic} \times 1.31 = WQBL_{monthly\ average}$). 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 ($LTA_{limiting\ aquatic} \times 3.11 = WQBL_{daily\ max}$). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{limiting\ aquatic} \times 2.38 = WQBL_{daily\ max}$). 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

EPA I.D. NUMBER LAD981322048

OUTFALL NUMBER 007

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

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)	30.00	105.07	<10.60	<39.58	<4.16	<18.85	105	mg/L	lbs/day	NA	NA	NA
b. Chemical Oxygen Demand (COD)	8.7	35.0	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
c. Total Organic Carbon (TOC)	4.3	17.3	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
d. Total Suspended Solids (TSS)	110.00	868.99	43.00	246.27	<13.29	<82.58	107	mg/L	lbs/day	NA	NA	NA
e. Ammonia (as N)	0.50	2.0	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
f. Flow	VALUE	1.0811	VALUE	0.8851	VALUE	0.5592	Cont. Record	MGD	NA	NA	NA	NA
g. Temperature (summer)	VALUE	29	VALUE	NA	VALUE	NA	1	°C	NA	NA	NA	NA
h. Temperature (winter)	VALUE	NA	VALUE	NA	VALUE	NA	NA	NA	NA	NA	NA	NA
	MINIMUM	MAXIMUM	[redacted]									
i. pH	5.63	9.82					Cont. Record	S.U.	NA	NA	NA	NA

Part B

3. POLLUTANT AND CAS NO.	2a. BELIEVED PRESENT	2b. 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		0.399	1.607	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
b. Chlorine, Total Residual	X		0.062	0.216	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
c. Color (True, Apparent)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d. Fecal Coliform		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
e. Fluoride (16984-48-8)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
f. Nitrate-Nitrite (as N)	X		0.045	0.181	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
g. Nitrogen, Total Organic (as N)		X	< 1.0	<4.0	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
h. Oil & Grease		X	<10.00	<67.46	<10.00	<52.35	<5.47	<25.50	107	mg/L	lbs/day	NA	NA	NA
i. Phosphorus (as P), Total (7723-14-0)	X		2.27	9.14	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
j. Radioactivity alpha, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
j. Radioactivity beta, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
j. Radioactivity Radium, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
j. Radioactivity Radium 226, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
k. Sulfate (as SO_4)(14808-79-8)	X		161	649	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
l. Sulfide (as S)		X	<2.00	<8.06	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
m. Sulfite (as SO_3)(14265-45-3)		X	<2.00	<8.06	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
n. Surfactants		X	<0.100	<0.403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
o. Aluminum, Total (7429-90-5)		X	<0.20	<0.81	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
p. Barium, Total (7440-33-3)	X		0.60	2.42	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
q. Boron, Total (7440-42-8)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
r. Cobalt, Total (7440-48-4)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
s. Iron, Total (7439-89-6)	X		3.71	14.94	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
t. Magnesium, Total (7439-95-4)	X		20.7	83.4	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
u. Molybdenum, Total (7439-98-7)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
v. Manganese, Total (7439-96-5)	X		0.56	2.26	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
w. Tin, Total (7440-31-5)		X	<0.025	<0.101	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
x. Titanium, Total (7440-32-6)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

EPA I.D. NUMBER LAD981522048

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	e. LC (1)
Part C-Metals, Cyanide, and Total Phenols													
1M. Antimony, Total (7440-36-0)	X		X	<0.060	<0.242	NA	NA	NA	NA	1	mg/L	lbs/day	
2M. Arsenic, Total (7440-38-2)	X		X	<0.010	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	
3M. Beryllium, Total (7440-41-7)	X		X	<0.0050	<0.0201	NA	NA	NA	NA	1	mg/L	lbs/day	
4M. Cadmium, Total (7440-43-9)	X		X	<0.0010	<0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	
5M. Chromium, Total (7440-47-3)	X		X	<0.010	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	
6M. Copper, Total (7440-50-8)	X		X	<0.0050	<0.0201	NA	NA	NA	NA	1	mg/L	lbs/day	
7M. Lead, Total (7439-92-1)	X	X		0.0063	0.0254	NA	NA	NA	NA	1	mg/L	lbs/day	
8M. Mercury, Total (7439-97-6)	X		X	<0.00020	<0.00081	NA	NA	NA	NA	1	mg/L	lbs/day	
9M. Nickel, Total (7440-02-0)	X		X	<0.040	<0.161	NA	NA	NA	NA	1	mg/L	lbs/day	
10M. Selenium, Total (7782-49-2)	X		X	<0.0050	<0.0201	NA	NA	NA	NA	1	mg/L	lbs/day	
11M. Silver, Total (7440-22-4)	X		X	<0.0020	<0.0081	NA	NA	NA	NA	1	mg/L	lbs/day	
12M. Thallium, Total (7440-28-0)	X		X	<0.010	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	
13M. Zinc, Total (7440-66-6)	X	X		0.020	0.081	NA	NA	NA	NA	1	mg/L	lbs/day	
14M. Cyanide, Total (57-12-5)	X		X	<0.005	<0.017	NA	NA	NA	NA	1	mg/L	lbs/day	
15A. Phenol, Total	X		X	<0.005	<0.017	NA	NA	NA	NA	1	mg/L	lbs/day	
Dioxin													
2,3,7,8-Tetrachlorodibenzo P-Dioxin (1764-01-6)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Part C-Volatile Compounds													
1V. Acrolein (107-02-8)	X		X	0.0350	0.1410	NA	NA	NA	NA	1	mg/L	lbs/day	
2V. Acrylonitrile (107-13-1)	X		X	<0.025	<0.107	<0.025	<0.107	<0.023	<0.101	3	mg/L	lbs/day	
3V. Benzene (71-43-2)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
4V. Bis (Chloromethyl) Ether (542-88-1)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5V. Bromoform (75-25-2)	X		X	<0.00500	<0.02014	NA	NA	NA	NA	1	mg/L	lbs/day	
6V. Carbon Tetrachloride (56-23-5)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
7V. Chlorobenzene (108-90-7)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
8V. Chlorodibromomethane (124-48-1)	X		X	<0.00500	<0.02014	NA	NA	NA	NA	1	mg/L	lbs/day	
9V. Chloroethane (75-00-3)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.017	3	mg/L	lbs/day	
10V. 2-Chloroethylvinyl Ether (110-75-8)	X		X	<0.00500	<0.02014	NA	NA	NA	NA	1	mg/L	lbs/day	
11V. Chloroform (67-66-3)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
12V. Dichlorobromomethane (75-27-4)	X		X	<0.00500	<0.02014	NA	NA	NA	NA	1	mg/L	lbs/day	
13V. Dichlorodifluoromethane (75-71-8)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	
14V. 1,1-Dichloroethane (75-34-3)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
15V. 1,2-Dichloroethane (107-06-2)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
16M. 1,1-Dichloroethylene (75-35-4)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
17V. 1,2-Dichloropropane (78-87-5)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
18V. 1,3-Dichloropropylene (542-75-6)	X		X	<0.010	<0.043	<0.010	<0.043	<0.007	<0.029	3	mg/L	lbs/day	
19V. Ethylbenzene (100-41-4)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	
20V. Methyl Bromide (74-83-9)	X		X	<0.00500	<0.02014	NA	NA	NA	NA	1	mg/L	lbs/day	
21V. Methyl Chloride (74-87-3)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.017	3	mg/L	lbs/day	
22V. Methylene Chloride (75-09-2)	X		X	<0.010	<0.043	<0.010	<0.043	<0.007	<0.029	3	mg/L	lbs/day	

				EPA I.D. NUMBER LAD981522048									OUTFALL NUMBER 007		
	2a.	2b	2c	3. EFFLUENT							4. UNITS		5. INTAKE (OPTIONAL)		
1. POLLUTANT	TESTING	BELIEVED	BELIEVED	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVERAGE		d. NO OF	a.	b.	a. LONG TERM AVERAGE VALUE		b. NO. OF
AND CAS NUMBER	REQUIRED	PRESENT	ABSENT	(1) CONC.	(2) MASS	(1) CONC.	(2) MASS	(1) CONC.	(2) MASS	ANALYSES	CONC.	MASS	(1) CONC.	(2) MASS	ANALYSES
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X		X	<0.00500	<0.02014	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
24V. Tetrachloroethylene (127-18-4)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
25V. Toluene (108-88-3)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
27V. 1,1,1-Trichloroethane (71-55-6)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
28V. 1,1,2-Trichloroethane (79-00-5)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
29V. Trichloroethylene (79-01-6)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
30V. Trichlorofluoromethane (75-69-4)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31V. Vinyl Chloride (75-01-4)	X		X	<0.005	<0.021	<0.005	<0.021	<0.004	<0.017	3	mg/L	lbs/day	NA	NA	NA
Part C - Acid Compounds															
1A. 2-Chlorophenol (95-57-8)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2A. 2,4-Dichlorophenol (120-83-2)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3A. 2,4-Dimethylphenol (105-67-9)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
4A. 4,6-Dinitro-o-Cresol (534-52-1)	X		X	<0.051	<0.240	<0.051	<0.240	<0.050	<0.219	3	mg/L	lbs/day	NA	NA	NA
5A. 2,4-Dinitrophenol (51-28-5)	X		X	<0.051	<0.240	<0.051	<0.240	<0.050	<0.219	3	mg/L	lbs/day	NA	NA	NA
6A. 2-Nitrophenol (88-75-5)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
7A. 4-Nitrophenol (100-02-7)	X		X	<0.051	<0.240	<0.051	<0.240	<0.050	<0.219	3	mg/L	lbs/day	NA	NA	NA
8A. p-Chloro-m-Cresol (59-50-7)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
9A. Pentachlorophenol (87-86-5)	X		X	<0.0500	<0.2014	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
10A. Phenol (108-95-2)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
11A. 2,4,6-Trichlorophenol (88-06-2)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Part C - Base/Neutral Compounds															
1B. Acenaphthene (83-32-9)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
2B. Acenaphthylene (208-96-8)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
3B. Anthracene (120-12-7)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
4B. Benzidine (92-87-5)	X		X	<0.0400	<0.1611	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
5B. Benzo (a) Anthracene (56-55-3)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
6B. Benzo (a) Pyrene (50-32-8)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
7B. 3,4-Benzofluoranthene (205-99-2)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
8B. Benzo (g,h,i) Perylene (191-24-2)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
9B. Benzo (k) Fluoranthene (207-08-9)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
10B. Bis(2-Chloroethoxy) Methane(111-91-1)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
11B. Bis(2-Chloroethyl) Ether (111-44-4)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
12B. Bis(2-Chloroisopropyl) Ether (102-60-1)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
13B. Bis(2-Ethylhexyl) Phthalate (117-81-7)	X	X		0.034	0.144	0.034	0.144	<0.018	<0.077	3	mg/L	lbs/day	NA	NA	NA
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
15B. Butyl Benzyl Phthalate (85-68-7)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
16B. 2-Chloronaphthalene (91-58-7)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
18B. Chrysene (218-01-9)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
19B. Dibenzo (a,h) Anthracene (53-70-3)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA

EPA I.D. NUMBER LAD981522048

OUTFALL NUMBER 007

1. POLLUTANT AND CAS NUMBER	2a. TESTING REQUIRED	2b. BELIEVED PRESENT	2c. 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.	5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (OPTIONAL) b. NO. OF ANALYSES
20B. 1,2-Dichlorobenzene (95-50-1)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
21B. 1,3-Dichlorobenzene (541-73-1)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
22B. 1,4-Dichlorobenzene (106-46-7)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
23B. 3,3-Dichlorobenzidine (91-94-1)	X		X	<0.0200	<0.0806	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
24B. Diethyl Phthalate (84-66-2)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
25B. Dimethyl Phthalate (131-11-3)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
26B. Di-n-Butyl Phthalate (84-74-2)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
27B. 2,4-Dinitrotoluene (121-14-2)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
28B. 2,6-Dinitrotoluene (606-20-2)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
29B. Di-n-Octyl Phthalate (117-84-0)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
30B. 1,2-Diphenylhydrazine (122-66-7)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
31B. Fluoranthene (206-44-0)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
32B. Fluorene (86-73-7)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
33B. Hexachlorobenzene (118-74-1)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
34B. Hexachlorobutadiene (87-68-3)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
35B. Hexachlorocyclopentadiene (77-47-4)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
36B. Hexachloroethane (67-72-1)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
38B. Isophorone (78-59-1)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
39B. Naphthalene (91-20-3)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
40B. Nitrobenzene (98-95-3)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
41B. N-Nitrosodimethylamine (62-75-9)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
42B. N-Nitrosodi-n-Propylamine (621-64-7)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
43B. N-Nitrosodiphenylamine (86-30-6)	X		X	<0.0100	<0.0403	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
44B. Phenanthrene (85-01-8)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
45B. Pyrene (129-00-0)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
46B. 1,2,4-Trichlorobenzene (120-82-1)	X		X	<0.010	<0.047	<0.010	<0.047	<0.010	<0.043	3	mg/L	lbs/day	NA	NA	NA
Part C - Pesticides															
1P. Aldrin (309-00-2)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2P. alpha-BHC (319-84-6)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3P. beta-BHC (319-85-7)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
4P. gamma-BHC (58-89-9)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
5P. delta BHC (319-86-8)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
6P. Chlordane (57-74-9)	X		X	<0.0002	<0.0081	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
7P. 4,4-DDT (50-29-3)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
8P. 4,4-DDE (72-55-9)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
9P. 4,4-DDD (72-54-8)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
10P. Dieldrin (60-57-1)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
11P. alpha-Endosulfan (115-29-7)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
12P. beta-Endosulfan (115-29-7)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
13P. Endosulfan Sulfate (1031-07-8)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA

1. POLLUTANT AND CAS NUMBER	2a. TESTING REQUIRED	2b. BELIEVED PRESENT	2c. BELIEVED ABSENT	EPA I.D. NUMBER LAD981522048 — 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	OUTFALL NUMBER 007 — 5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO OF ANALYSES
14P. Endrin (72-20-8)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
15P. Endrin Aldehyde (7421-93-4)	X		X	<0.0001	<0.00040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
16P. Heptachlor (76-44-8)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
17P. Heptachlor Epoxide (1024-57-3)	X		X	<0.00005	<0.00020	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
18P. PCB 1242 (53469-21-9)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
19P. PCB 1254 (11097-69-1)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
20P. PCB 1221 (11104-28-2)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
21P. PCB 1232 (11141-16-5)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
22P. PCB 1248 (12672-29-6)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
23P. PCB 1260 (11096-82-5)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
24P. PCB 1016 (12674-11-2)	X		X	<0.001	< 0.0040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
25P. Toxaphene (8001-35-2)	X		X	<0.005	<0.0201	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
[illegible]															
Chromium VI	X		X	<0.010	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Total Kjeldahl Nitrogen (TKN)	X		X	<1.0	<4.0	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3-Chlorophenol	(1)		X	<0.010 (2)	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
4-Chlorophenol	(1)		X	<0.010 (2)	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,3-Dichlorophenol	(1)		X	<0.010 (2)	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,5-Dichlorophenol	(1)		X	<0.010 (2)	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,6-Dichlorophenol	(1)		X	<0.010 (2)	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3,4-Dichlorophenol	(1)		X	<0.010 (2)	<0.040	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,4-Dichlorophenoxyacetic Acid (2,4-D)	(1)		X	<0.00150	<0.00604	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2-(2,4,5-Trichlorophenoxy) Propanoic Acid (2,4,5-TP or Silvex)	(1)		X	<0.000500	<0.002014	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Total Dissolved Solids	(1)	X		1217	4902	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Chloride	(1)	X		391	1575	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA

NOTES:

[illegible]

Historical analytical data from calendar years 2002 and 2003, as well as data collected from the May 26-27, 2004 sampling event, were used for those parameters with multiple laboratory analyses indicated above.

[illegible]

(1) Additional analytes required in accordance with LAC 33:IX.2707.D, and which may be included in the LDEQ Water Quality Standards screen. These parameters were analyzed for the purpose of the permit shield, although not specifically required per LAC 33:IX.2501.G.7.c, LAC 33:IX.2501.G.7.e, or LAC 33:IX.2501.G.7.f.

(2) The analytical laboratory, Gulf Coast, performed these analyses using a "library search." The lab reported each parameter as "not detected," although no method detection limit was specified. Therefore, Providence Engineering assumes that the parameters are not present at the respective Minimum Quantification Level (0.01 mg/L).

NA = Testing not required; not applicable.

mg/L = *milligrams per liter*

lbs/day = pounds per day

MGD = million gallons per day

°C = degrees Celsius

S.U. = standard units

EPA I.D. NUMBER LAD981322048

OUTFALL NUMBER 010

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

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)	11.20	37.28	<6.15	<20.22	<3.29	<13.38	105	mg/L	lbs/day	NA	NA	NA
b. Chemical Oxygen Demand (COD)	<5.0	<22.2	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
c. Total Organic Carbon (TOC)	3.0	13.3	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
d. Total Suspended Solids (TSS)	340.00	1877.82	105.25	488.29	<21.64	<92.27	107	mg/L	lbs/day	NA	NA	NA
e. Ammonia (as N)	0.42	1.87	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
f. Flow	VALUE	1.1244	VALUE	0.6669	VALUE	0.4953	Cont. Record	MGD	NA	NA	NA	NA
g. Temperature (summer)	VALUE	28	VALUE	NA	VALUE	NA	NA	°C	NA	NA	NA	NA
h. Temperature (winter)	VALUE	NA	VALUE	NA	VALUE	NA	NA	NA	NA	NA	NA	NA
i. pH	MINIMUM 8.30	MAXIMUM 8.30	[redacted]				Cont. Record	S.U.	NA	NA	NA	NA

Part B

3. POLLUTANT AND CAS NO.	2a. BELIEVED PRESENT	2b. 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	<0.200	<0.889	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
b. Chlorine, Total Residual		X	<0.050	<0.289	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
c. Color (True, Apparent)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
d. Fecal Coliform		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
e. Fluoride (16984-48-8)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
f. Nitrate-Nitrite (as N)	X		0.340	1.511	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
g. Nitrogen, Total Organic (as N)		X	<1.0	<4.4	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
h. Oil & Grease		X	<10.00	<57.96	<10.00	<41.62	<5.50	<22.82	107	mg/L	lbs/day	NA	NA	NA
i. Phosphorus (as P), Total (7723-14-0)	X		1.00	4.45	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
j. Radioactivity alpha, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
j. Radioactivity beta, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
j. Radioactivity Radium, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
j. Radioactivity Radium 226, Total		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
k. Sulfate (as SO_4)(14808-79-8)	X		93.0	413.4	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
l. Sulfide (as S)		X	<2.00	<8.89	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
m. Sulfite (as SO_3)(14265-45-3)		X	<2.00	<8.89	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
n. Surfactants	X		0.155	0.689	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
o. Aluminum, Total (7429-90-5)		X	<0.20	<0.89	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
p. Barium, Total (7440-33-3)	X		0.33	1.47	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
q. Boron, Total (7440-42-8)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
r. Cobalt, Total (7440-48-4)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
s. Iron, Total (7439-89-6)	X		2.19	9.74	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
t. Magnesium, Total (7439-95-4)	X		11.1	49.3	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
u. Molybdenum, Total (7439-98-7)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
v. Manganese, Total (7439-96-5)	X		0.33	1.47	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
w. Tin, Total (7440-31-5)		X	<0.025	<0.111	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
x. Titanium, Total (7440-32-6)		X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

EPA I.D. NUMBER LAD981522048

1. POLLUTANT AND CAS NUMBER	2a. TESTING REQUIRED	2b. BELIEVED PRESENT	2c. 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	e. LC (1)
Part C-Metals, Cyanide, and Total Phenols													
1M. Antimony, Total (7440-36-0)	X		X	<0.060	<0.267	NA	NA	NA	NA	1	mg/L	lbs/day	
2M. Arsenic, Total (7440-38-2)	X		X	<0.010	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	
3M. Beryllium, Total (7440-41-7)	X		X	<0.0050	<0.0222	NA	NA	NA	NA	1	mg/L	lbs/day	
4M. Cadmium, Total (7440-43-9)	X		X	<0.0010	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	
5M. Chromium, Total (7440-47-3)	X		X	<0.010	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	
6M. Copper, Total (7440-50-8)	X	X		0.010	0.044	NA	NA	NA	NA	1	mg/L	lbs/day	
7M. Lead, Total (7439-92-1)	X	X		0.0066	0.0293	NA	NA	NA	NA	1	mg/L	lbs/day	
8M. Mercury, Total (7439-97-6)	X		X	<0.00020	<0.00089	NA	NA	NA	NA	1	mg/L	lbs/day	
9M. Nickel, Total (7440-02-0)	X		X	<0.040	<0.178	NA	NA	NA	NA	1	mg/L	lbs/day	
10M. Selenium, Total (7782-49-2)	X		X	<0.0050	<0.0222	NA	NA	NA	NA	1	mg/L	lbs/day	
11M. Silver, Total (7440-22-4)	X		X	<0.0020	<0.0089	NA	NA	NA	NA	1	mg/L	lbs/day	
12M. Thallium, Total (7440-28-0)	X		X	<0.010	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	
13M. Zinc, Total (7440-66-6)	X	X		0.025	0.111	NA	NA	NA	NA	1	mg/L	lbs/day	
14M. Cyanide, Total (57-12-5)	X		X	<0.005	<0.029	NA	NA	NA	NA	1	mg/L	lbs/day	
15A. Phenol, Total	X		X	<0.005	<0.029	NA	NA	NA	NA	1	mg/L	lbs/day	
Dioxin													
2,3,7,8-Tetrachlorodibenzo P-Dioxin (1764-01-6)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Part C-Volatile Compounds													
1V. Acrolein (107-02-8)	X		X	<0.0250	<0.1111	NA	NA	NA	NA	1	mg/L	lbs/day	
2V. Acrylonitrile (107-13-1)	X		X	<0.025	<0.111	<0.025	<0.111	<0.023	<0.092	3	mg/L	lbs/day	
3V. Benzene (71-43-2)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
4V. Bis (Chloromethyl) Ether (542-88-1)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	
5V. Bromoform (75-25-2)	X		X	<0.00500	<0.02223	NA	NA	NA	NA	1	mg/L	lbs/day	
6V. Carbon Tetrachloride (56-23-5)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
7V. Chlorobenzene (108-90-7)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
8V. Chlorodibromomethane (124-48-1)	X		X	<0.00500	<0.02223	NA	NA	NA	NA	1	mg/L	lbs/day	
9V. Chloroethane (75-00-3)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.016	3	mg/L	lbs/day	
10V. 2-Chloroethylvinyl Ether (110-75-8)	X		X	<0.00500	<0.02223	NA	NA	NA	NA	1	mg/L	lbs/day	
11V. Chloroform (67-66-3)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
12V. Dichlorobromomethane (75-27-4)	X		X	<0.00500	<0.02223	NA	NA	NA	NA	1	mg/L	lbs/day	
13V. Dichlorodifluoromethane (75-71-8)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	
14V. 1,1-Dichloroethane (75-34-3)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
15V. 1,2-Dichloroethane (107-06-2)	X	X		0.007	0.028	0.007	0.028	<0.004	<0.018	3	mg/L	lbs/day	
16M. 1,1-Dichloroethylene (75-35-4)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
17V. 1,2-Dichloropropane (78-87-5)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
18V. 1,3-Dichloropropylene (542-75-6)	X		X	<0.010	<0.044	<0.010	<0.044	<0.007	<0.029	3	mg/L	lbs/day	
19V. Ethylbenzene (100-41-4)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	
20V. Methyl Bromide (74-83-9)	X		X	<0.00500	<0.02223	NA	NA	NA	NA	1	mg/L	lbs/day	
21V. Methyl Chloride (74-87-3)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.016	3	mg/L	lbs/day	
22V. Methylene Chloride (75-09-2)	X		X	<0.010	<0.044	<0.010	<0.044	<0.007	<0.029	3	mg/L	lbs/day	

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	OUTFALL NUMBER 010 5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. (2) MASS	b. NO. OF ANALYSES
EPA I.D. NUMBER LAD981522046															
23V 1,1,2,2-Tetrachloroethane (79-34-5)	X		X	<0.00500	<0.02223	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
24V Trichloroethylene (127-18-4)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
25V Toluene (108-88-3)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
26V 1,2-Trans-Dichloroethylene (156-60-5)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
27V 1,1,1-Trichloroethane (71-55-6)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
28V 1,1,2-Trichloroethane (79-00-5)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
29V Trichloroethylene (79-01-6)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.015	3	mg/L	lbs/day	NA	NA	NA
30V Trichlorofluoromethane (75-69-4)			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31V Vinyl Chloride (75-01-4)	X		X	<0.005	<0.022	<0.005	<0.022	<0.004	<0.018	3	mg/L	lbs/day	NA	NA	NA
Part C - Acid Compounds															
1A 2-Chlorophenol (95-57-8)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2A 2,4-Dichlorophenol (120-83-2)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3A 2,4-Dimethylphenol (105-67-9)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
4A 4,6-Dinitro-o-Cresol (534-52-1)	X		X	<0.052	<0.222	<0.052	<0.222	<0.051	<0.197	3	mg/L	lbs/day	NA	NA	NA
5A 2,4-Dinitrophenol (51-28-5)	X		X	<0.052	<0.222	<0.052	<0.222	<0.051	<0.197	3	mg/L	lbs/day	NA	NA	NA
6A 2-Nitrophenol (88-75-5)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
7A 4-Nitrophenol (100-02-7)	X		X	<0.052	<0.222	<0.052	<0.222	<0.051	<0.197	3	mg/L	lbs/day	NA	NA	NA
8A p-Chloro-m-Cresol (59-50-7)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
9A Pentachlorophenol (87-86-5)	X		X	<0.0500	<0.2223	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
10A Phenol (108-95-2)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
11A 2,4,6-Trichlorophenol (88-06-2)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Part C - Base/Neutral Compounds															
1B Acenaphthene (83-32-9)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
2B Acenaphthylene (208-96-8)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
3B Anthracene (120-12-7)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
4B Benzidine (92-87-5)	X		X	<0.0400	<0.1778	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
5B Benzo (a) Anthracene (56-55-3)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
6B Benzo (a) Pyrene (50-32-8)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
7B 3,4-Benzofluoranthene (205-99-2)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
8B Benzo (g,h,i) Perylene (191-24-2)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
9B Benzo (k) Fluoranthene (207-08-9)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
10B Bis(2-Chloroethoxy) Methane (111-91-1)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
11B Bis(2-Chloroethyl) Ether (111-44-4)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
12B Bis(2-Chloroisopropyl) Ether (102-80-1)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
13B Bis(2-Ethylhexyl) Phthalate (117-81-7)	X	X		0.018	0.073	0.018	0.073	<0.013	<0.050	3	mg/L	lbs/day	NA	NA	NA
14B 4-Bromophenyl Phenyl Ether (101-55-3)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
15B Butyl Benzyl Phthalate (85-68-7)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
16B 2-Chloronaphthalene (91-58-7)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
17B 4-Chlorophenyl Phenyl Ether (7005-72-3)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
18B Chrysene (218-01-9)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
19B Dibenzo (a,h) Anthracene (53-70-3)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA

				EPA I.D. NUMBER LAD981522048									OUTFALL NUMBER 010		
1. POLLUTANT AND CAS NUMBER	2a. TESTING REQUIRED	2b. BELIEVED PRESENT	2c. 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
20B. 1,2-Dichlorobenzene (95-50-1)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
21B. 1,3-Dichlorobenzene (541-73-1)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
22B. 1,4-Dichlorobenzene (106-46-7)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
23B. 3,3-Dichlorobenzidine (91-94-1)	X		X	<0.0200	<0.0889	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
24B. Diethyl Phthalate (84-66-2)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
25B. Dimethyl Phthalate (131-11-3)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
26B. Di-n-Butyl Phthalate (84-74-2)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
27B. 2,4-Dinitrotoluene (121-14-2)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
28B. 2,6-Dinitrotoluene (606-20-2)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
29B. Di-n-Octyl Phthalate (117-84-0)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
30B. 1,2-Diphenylhydrazine (122-66-7)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
31B. Fluoranthene (206-44-0)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
32B. Fluorene (86-73-7)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
33B. Hexachlorobenzene (118-74-1)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
34B. Hexachlorobutadiene (87-68-3)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
35B. Hexachlorocyclopentadiene (77-47-4)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
36B. Hexachloroethane (67-72-1)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
38B. Isophorone (78-59-1)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
39B. Naphthalene (91-20-3)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
40B. Nitrobenzene (98-95-3)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
41B. N-Nitrosodimethylamine (62-75-9)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
42B. N-Nitrosodi-n-Propylamine (621-64-7)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
43B. N-Nitrosodiphenylamine (86-30-6)	X		X	<0.0100	<0.0445	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
44B. Phenanthrene (85-01-8)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
45B. Pyrene (129-00-0)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
46B. 1,2,4-Trichlorobenzene (120-82-1)	X		X	<0.010	<0.044	<0.010	<0.044	<0.010	<0.039	3	mg/L	lbs/day	NA	NA	NA
Part C - Pesticides															
1P. Aldrin (309-00-2)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2P. alpha-BHC (319-84-6)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3P. beta-BHC (319-85-7)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
4P. gamma-BHC (58-89-9)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
5P. delta BHC (319-86-8)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
6P. Chlordane (57-74-9)	X		X	<0.0002	<0.00889	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
7P. 4,4-DDT (50-29-3)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
8P. 4,4-DDE (72-55-9)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
9P. 4,4-DDD (72-54-8)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
10P. Dieldrin (60-57-1)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
11P. alpha-Endosulfan (115-29-7)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
12P. beta-Endosulfan (115-29-7)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
13P. Endosulfan Sulfate (1031-07-8)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA

1. POLLUTANT AND CAS NUMBER	2a. TESTING REQUIRED	2b. BELIEVED PRESENT	2c. BELIEVED ABSENT	EPA I.D. NUMBER LAD081522048 — 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	OUTFALL NUMBER 010 — 5. INTAKE (OPTIONAL) a. LONG TERM AVERAGE VALUE (1) CONC.	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
14P. Endrin (72-20-8)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
15P. Endrin Aldehyde (7421-93-4)	X		X	<0.0001	<0.00044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
16P. Heptachlor (76-44-8)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
17P. Heptachlor Epoxide (1024-57-3)	X		X	<0.00005	<0.00022	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
18P. PCB 1242 (53469-21-9)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
19P. PCB 1254 (11097-69-1)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
20P. PCB 1221 (11104-28-2)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
21P. PCB 1232 (11141-16-5)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
22P. PCB 1248 (12672-29-6)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
23P. PCB 1260 (11096-82-5)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
24P. PCB 1016 (12674-11-2)	X		X	<0.001	<0.0044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
25P. Toxaphene (8001-35-2)	X		X	<0.005	<0.0222	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Other Parameters															
Chromium VI	X		X	<0.010	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Total Kjeldahl Nitrogen (TKN)	X		X	<1.0	<4.4	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3-Chlorophenol	(1)		X	<0.010 (2)	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
4-Chlorophenol	(1)		X	<0.010 (2)	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,3-Dichlorophenol	(1)		X	<0.010 (2)	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,5-Dichlorophenol	(1)		X	<0.010 (2)	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,6-Dichlorophenol	(1)		X	<0.010 (2)	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
3,4-Dichlorophenol	(1)		X	<0.010 (2)	<0.044	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2,4-Dichlorophenoxyacetic Acid (2,4-D)	(1)		X	<0.00150	<0.00667	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
2-(2,4,5-Trichlorophenoxy) Propanoic Acid (2,4,5-TP or Silvex)	(1)		X	<0.000500	<0.002223	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Total Dissolved Solids	(1)	X		517	2298	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA
Chloride	(1)	X		86.4	384.1	NA	NA	NA	NA	1	mg/L	lbs/day	NA	NA	NA

NOTES:

Samples for parameters which have only 1 analysis were collected during a 24-hour sampling event on May 26-27, 2004. *For the purpose of calculating mass*, a flow of 0.533 MGD was used for all parameters with the exception of oil and grease, total residual chlorine, total phenol, and total cyanide (which were collected as grab samples). A flow rate of 0.694 MGD was used for to calculate mass for these parameters.

Historical analytical data from calendar years 2002 and 2003, as well as data collected from the May 26-27, 2004 sampling event, were used for those parameters with multiple laboratory analyses *indicated above*.

All single analytical results reported with a "less-than" sign (<) were either (1) non-detected *in the effluent sample at or below* the analytical method detection limit (MDL) achieved by the applicable laboratory analytical method, or (2) non-detected and quantifiable at the practical quantitation limit (PQL) achieved by the applicable laboratory analytical method. For pollutants with multiple analyses, when an average was calculated, a less-than sign indicates that at least one analytical result was non-detected.

(1) Additional analytes required in accordance with LAC 33:IX.2707.D, and which may be included in the LDEQ Water Quality Standards screen. *These parameters were analyzed* for the purpose of the permit shield, although not specifically required per LAC 33:IX.2501.G.7.c.1, LAC 33:IX.2501.G.7.e, or LAC 33:IX.2501.G.7.f.

(2) The analytical laboratory, Gulf Coast, performed these analyses using a "library search." The lab reported each parameter as "not detected," although no method detection *limit was specified*. *Therefore*, Providence Engineering assumes that the parameters are not present at the respective Minimum Quantification Level (0.01 mg/L).

NA = Testing not required; not applicable

mg/L = milligrams per liter

lbs/day = pounds per day

MGD = million gallons per day

°C = degrees Celsius

S.U. = standard units

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

LAD981522048

Form Approved OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge Information (Continued from page 3 of Form 2F)

Outfall 011

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

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Oil and Grease	< 5.0 mg/L < 544.5 lbs/day	< 5.0 mg/L * < 410.2 lbs/day*	NA	NA	1	NA
Biological Oxygen Demand (BOD_5)	4 mg/L 436 lbs/day	< 3 mg/L < 349 lbs/day	NA	NA	1	(1), (2)
Chemical Oxygen Demand (COD)	22.2 mg/L 2417.4 lbs/day	< 5.0 mg/L < 581.0 lbs/day	NA	NA	1	(1), (2)
Total Organic Carbon (TOC)	5.9 mg/L 642.5 lbs/day	2.8 mg/L 325.3 lbs/day	NA	NA	1	(1), (2)
Total Suspended Solids (TSS)	111 mg/L 12087 lbs/day	13 mg/L 1511 lbs/day	NA	NA	1	(1), (2)
Total Kjeldahl Nitrogen	< 1.0 mg/L < 108.9 lbs/day	< 1.0 mg/L < 116.2 lbs/day	NA	NA	1	NA
Nitrate plus Nitrite Nitrogen	0.325 mg/L 35.390 lbs/day	0.250 mg/L 29.046 lbs/day	NA	NA	1	(1), (2)
Ammonia (as Nitrogen)	0.39 mg/L 42.47 lbs/day	0.33 mg/L 38.34 lbs/day	NA	NA	1	(1), (2)
Total Phosphorus	< 0.200 mg/L < 21.778 lbs/day	< 0.200 mg/L < 23.239 lbs/day	NA	NA	1	NA
Temperature	23 °C	23 °C	NA	NA	1	Ambient
pH (standard units)	Minimum 7.80 Maximum 7.80	Minimum 8.21 Maximum 8.35	NA	NA	1	(1), (2)

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Analytical data for all pollutants that are limited in an effluent guideline and/or that are listed in the facility's LPDES permit are provided in Parts A and C.						

Continued from the Front

Outfall 011

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS						
Aluminum, Total	0.71 mg/L 77.31 lbs/day	0.25 mg/L 26.72 lbs/day	NA	NA	1	(1), (2)
Iron, Total	1.35 mg/L 147.0 lbs/day	0.34 mg/L 39.6 lbs/day	NA	NA	1	(1), (2)
Magnesium, Total	1.30 mg/L 141.66 lbs/day	0.65 mg/L 76.63 lbs/day	NA	NA	1	(1), (2)
Manganese, Total	0.066 mg/L 7.187 lbs/day	0.024 mg/L 2.789 lbs/day	NA	NA	1	(1), (2)
Tin, Total	< 0.025 mg/L < 2.722 lbs/day	< 0.025 mg/L < 2.906 lbs/day	NA	NA	1	NA
Nitrogen, Total Organic	< 1.0 mg/L < 108.9 lbs/day	< 1.0 mg/L < 116.2 lbs/day	NA	NA		NA
Total Residual Chlorine	< 0.060 mg/L < 6.445 lbs/day	< 0.060 mg/L* < 4.102 lbs/day*	NA	NA	1	NA
Sulfate	< 10.0 mg/L < 1088.9 lbs/day	< 10.0 mg/L < 1161.9 lbs/day	NA	NA	1	NA
Sulfide	< 2.00 mg/L < 217.78 lbs/day	< 2.00 mg/L < 232.39 lbs/day	NA	NA	1	NA
Sulfite	< 2.00 mg/L < 217.78 lbs/day	< 2.00 mg/L < 232.39 lbs/day	NA	NA	1	NA
Surfactants	< 0.100 mg/L < 10.889 lbs/day	< 0.100 mg/L < 11.619 lbs/day	NA	NA	1	NA
PRIORITY POLLUTANT METALS, TOTAL CYANIDE AND TOTAL PHENOLS						
Antimony, Total	< 0.060 mg/L < 6.533 lbs/day	< 0.060 mg/L < 6.972 lbs/day	NA	NA	1	NA
Arsenic, Total	< 0.010 mg/L < 1.089 lbs/day	< 0.010 mg/L < 1.162 lbs/day	NA	NA	1	NA
Beryllium, Total	< 0.0050 mg/L < 0.5446 lbs/day	< 0.0050 mg/L < 0.5810 lbs/day	NA	NA	1	NA
Cadmium, Total	0.0037 mg/L 0.4029 lbs/day	0.0017 mg/L 0.1976 lbs/day	NA	NA	1	(1), (2)
Chromium, Total	< 0.010 mg/L < 1.089 lbs/day	< 0.010 mg/L < 1.162 lbs/day	NA	NA	1	NA
Chromium, Hexavalent	< 0.010 mg/L < 1.089 lbs/day	< 0.010 mg/L < 1.162 lbs/day	NA	NA	1	NA
Copper, Total	0.029 mg/L 3.158 lbs/day	0.0071 mg/L 0.8250 lbs/day	NA	NA	1	(1), (2)
Lead, Total	0.012 mg/L 1.307 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	(1), (2)
Mercury, Total	< 0.00020 mg/L < 0.02178 lbs/day	< 0.00020 mg/L < 0.02324 lbs/day	NA	NA	1	NA
Nickel, Total	< 0.040 mg/L < 4.356 lbs/day	< 0.040 mg/L < 4.648 lbs/day	NA	NA	1	NA
Selenium, Total	< 0.0050 mg/L < 0.5446 lbs/day	< 0.0050 mg/L < 0.5810 lbs/day	NA	NA	1	NA
Silver, Total	< 0.0020 mg/L < 0.2178 lbs/day	< 0.0020 mg/L < 0.2324 lbs/day	NA	NA	1	NA
Thallium, Total	< 0.010 mg/L < 1.089 lbs/day	< 0.010 mg/L < 1.162 lbs/day	NA	NA	1	NA
Zinc, Total	1.08 mg/L 117.60 lbs/day	0.52 mg/L 60.42 lbs/day	NA	NA	1	(1), (2)
Cyanide, Total	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L* < 0.410 lbs/day*	NA	NA	1	NA
Phenols, Total	0.005 mg/L 0.544 lbs/day	< 0.005 mg/L* < 0.410 lbs/day*	NA	NA	1	(1), (2)
VOLATILE ORGANIC COMPOUNDS						
Acrolein	< 0.025 mg/L < 2.722 lbs/day	< 0.025 mg/L < 2.906 lbs/day	NA	NA	1	NA
Acrylonitrile	< 0.025 mg/L < 2.722 lbs/day	< 0.025 mg/L < 2.906 lbs/day	NA	NA	1	NA
Benzene	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Bromoform (Tribromomethane)	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Carbon tetrachloride (Tetrachloromethane)	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Chlorobenzene	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Chlorodibromomethane (Dibromochloromethane)	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Chloroethane	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
2-chloroethylvinyl ether	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Chloroform (Trichloromethane)	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
Dichlorobromomethane	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
1,1-Dichloroethane	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA

Continued from the Front

Outfall 011

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units) Grab Sample Taken During First 30 Minutes	Maximum Values (include units) Flow-weighted Composite	Average Values (include units) Grab Sample Taken During First 30 Minutes	Average Values (include units) Flow-weighted Composite	Number of Storm Events Sampled	Sources of Pollutants
1,2-Dichloroethane (Ethylene Dichloride)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
1,1-Dichloroethylene (1,1-Dichloroethene)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
1,2-Dichloropropane	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
1,3-Dichloropropylene (1,3-Dichloropropene)	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Ethylbenzene	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Methyl bromide (Bromomethane)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Methyl chloride (Chloromethane)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Methylene chloride (Dichloromethane)	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
1,1,2,2-Tetrachloroethane	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Tetrachloroethylene (Tetrachloroethene)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Toluene	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
1,2-trans-Dichloroethylene (1,2-trans-Dichloroethene)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
1,1,1-Trichloroethane	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
1,1,2-Trichloroethane	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Trichloroethylene (Trichloroethene)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
Vinyl chloride (Chloroethylene)	< 0.005 mg/L < 0.644 lbs/day	< 0.005 mg/L < 0.681 lbs/day	NA	NA	1	NA
ACID EXTRACTABLE COMPOUNDS						
2-Chlorophenol	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
2,4-Dichlorophenol	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
2,4-Dimethylphenol	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
4,6-Dinitro-o-cresol (4,6-dinitro-2-ethylphenol)	< 0.05 mg/L < 5.44 lbs/day	< 0.05 mg/L < 5.81 lbs/day	NA	NA	1	NA
2,4-Dinitrophenol	< 0.05 mg/L < 5.44 lbs/day	< 0.05 mg/L < 5.81 lbs/day	NA	NA	1	NA
2-Nitrophenol	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
4-Nitrophenol	< 0.05 mg/L < 5.44 lbs/day	< 0.05 mg/L < 5.81 lbs/day	NA	NA	1	NA
p-Chloro-m-cresol (4-chloro-3-methylphenol)	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Pentachlorophenol	< 0.05 mg/L < 5.44 lbs/day	< 0.05 mg/L < 5.81 lbs/day	NA	NA	1	NA
Phenol	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
2,4,6-Trichlorophenol	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
BASE/NEUTRAL COMPOUNDS						
Acenaphthene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Acenaphthylene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Anthracene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Benzidine	< 0.04 mg/L < 4.36 lbs/day	< 0.04 mg/L < 4.66 lbs/day	NA	NA	1	NA
Benzo(a)anthracene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Benzo(a)pyrene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Benzo(ghi)perylene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Benzo(k)fluoranthene	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Bis(2-chloroethoxy)methane	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Bis(2-chloroethyl)ether	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA
Bis(2-chloroisopropyl)ether	< 0.01 mg/L < 1.09 lbs/day	< 0.01 mg/L < 1.16 lbs/day	NA	NA	1	NA

Continued from the Front

Outfall 011

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Bis(2-ethylhexyl)phthalate	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
4-Bromophenyl phenyl ether	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Butylbenzyl phthalate	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
2-Chloronaphthalene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
4-Chlorophenyl phenyl ether	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Chrysene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Dibenzo(a,h)anthracene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
1,2-Dichlorobenzene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
1,3-Dichlorobenzene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
1,4-Dichlorobenzene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
3,3'-Dichlorobenzidine	< 0.02 mg/l < 2.18 lbs/day	< 0.02 mg/l < 2.32 lbs/day	NA	NA	1	NA
Diethyl phthalate	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Dimethyl phthalate	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Di-n-butyl phthalate	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
2,4-Dinitrotoluene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
2,6-Dinitrotoluene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Di-n-octyl phthalate	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
1,2-Diphenylhydrazine (as azobenzene)	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Fluoranthene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Fluorene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Hexachlorobenzene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Hexachlorobutadiene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Hexachlorocyclopentadiene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Hexachloroethane	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Indeno(1,2,3-cd)pyrene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Isophorone	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Naphthalene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Nitrobenzene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
n-Nitrosodimethylamine	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
n-Nitrosodi-n-propylamine	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
n-Nitrosodiphenylamine	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Phenanthrene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
Pyrene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
1,2,4-Trichlorobenzene	< 0.01 mg/l < 1.09 lbs/day	< 0.01 mg/l < 1.16 lbs/day	NA	NA	1	NA
PESTICIDES, HERBICIDES, AND PCBs						
Aldrin	< 0.00005 mg/l < 0.00544 lbs/day	< 0.00005 mg/l < 0.00581 lbs/day	NA	NA	1	NA
Alpha-BHC	< 0.00005 mg/l < 0.00544 lbs/day	< 0.00005 mg/l < 0.00581 lbs/day	NA	NA	1	NA
Beta-BHC	< 0.00005 mg/l < 0.00544 lbs/day	< 0.00005 mg/l < 0.00581 lbs/day	NA	NA	1	NA
Delta-BHC	< 0.00005 mg/l < 0.00544 lbs/day	< 0.00005 mg/l < 0.00581 lbs/day	NA	NA	1	NA

Continued from the Front

Outfall 011

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units) Grab Sample Taken During First 30 Minutes	Maximum Values (include units) Flow-weighted Composite	Average Values (include units) Grab Sample Taken During First 30 Minutes	Average Values (include units) Flow-weighted Composite	Number of Storm Events Sampled	Sources of Pollutants
Gamma-BHC (Lindane)	< 0.00005 mg/L < 0.00544 lbs/day	< 0.00005 mg/L < 0.00581 lbs/day	NA	NA	1	NA
Chlordane	< 0.00025 mg/L < 0.02722 lbs/day	< 0.00025 mg/L < 0.02905 lbs/day	NA	NA	1	NA
4,4'-DDT	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
4,4'-DDE	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
4,4'-DDD	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
Dieldrin	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
Alpha-endosulfan (Endosulfan I)	< 0.00005 mg/L < 0.00544 lbs/day	< 0.00005 mg/L < 0.00581 lbs/day	NA	NA	1	NA
Beta-endosulfan (Endosulfan II)	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
Endosulfan sulfate	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
Endrin	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
Endrin aldehyde	< 0.0001 mg/L < 0.0109 lbs/day	< 0.0001 mg/L < 0.0116 lbs/day	NA	NA	1	NA
Heptachlor	< 0.00005 mg/L < 0.00544 lbs/day	< 0.00005 mg/L < 0.00581 lbs/day	NA	NA	1	NA
Heptachlor epoxide	< 0.00005 mg/L < 0.00544 lbs/day	< 0.00005 mg/L < 0.00581 lbs/day	NA	NA	1	NA
PCB-1242	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
PCB-1254	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
PCB-1221	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
PCB-1232	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
PCB-1248	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
PCB-1260	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
PCB-1016	< 0.001 mg/L < 0.109 lbs/day	< 0.001 mg/L < 0.116 lbs/day	NA	NA	1	NA
Toxaphene	< 0.005 mg/L < 0.544 lbs/day	< 0.005 mg/L < 0.581 lbs/day	NA	NA	1	NA
OTHER PARAMETERS						
Total Dissolved Solids	54 mg/L 5880 lbs/day	45 mg/L 5229 lbs/day	NA	NA	1	(1), (2)
Chloride	9.4 mg/L 1023.6 lbs/day	7.5 mg/L 871.4 lbs/day	NA	NA	1	(1), (2)

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow-weighted composite sample.

1. Date of Storm Event	2. Duration of Storm (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
6/16/2004	> 180	2.60	> 72 Hours	18.671 MGD	> 18 million gallons

7. Provide a description of the method of flow measurement or estimate.

The flow rates were estimated by multiplying the time it took for an object to travel a known distance [feet per second (ft/sec)] by the width and depth of the discharge channel [feet squared (ft^2)] to derive flow rates in cubic feet per second (cfs). The flows measured in cfs were converted to million gallons per day (MGD).

NOTES:

* These parameters cannot be composited. Therefore, they were collected as grab samples immediately after the composite sampling period.

Mass values for the first flush grab samples were calculated using the following flow rate in million gallons per day measured during the sampling event: 13.056
Mass values for the flow-weighted composite samples were calculated using the average of the flow rates in million gallons per day measured during the composite sampling event: 13.932
Mass values for the grab samples for parameters that cannot be composited were calculated using the following flow rate in million gallons per day measured during the sampling event: 9.837

NA = Not Applicable
< = Indicates parameters analyzed were not detected at or above the respective analytical method detection limit.
°C = Degrees Celsius
MGD = million gallons per day

FOOTNOTES:

(1) Particulate deposition from sources associated with raw material, by-product, and/or final product handling, transfer, processing and/or storage and storm water runoff (contact with facility roads and
(2) Incidental to industrial activity.

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

LAD981522048

Form Approved OMB No. 2040-0086
Approval expires 5-31-97

VII. Discharge Information *(Continued from page 3 of Form 2F)*	Outfall 012

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

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Oil and Grease	< 5.6 mg/L < 637.1 lbs/day	< 5.2 mg/L * < 422.3 lbs/day*	NA	NA	1	NA
Biological Oxygen Demand (BOD_5)	< 3 mg/L < 341.3 lbs/day	< 3 mg/L < 469.6 lbs/day	NA	NA	1	NA
Chemical Oxygen Demand (COD)	< 5.0 mg/L < 566.8 lbs/day	< 5.0 mg/L < 782.6 lbs/day	NA	NA	1	NA
Total Organic Carbon (TOC)	3.2 mg/L 364.1 lbs/day	4.3 mg/L 673.0 lbs/day	NA	NA	1	(1), (2)
Total Suspended Solids (TSS)	185 mg/L 21047 lbs/day	45 mg/L 7044 lbs/day	NA	NA	1	(1), (2)
Total Kjeldahl Nitrogen	< 1.0 mg/L < 113.8 lbs/day	< 1.0 mg/L < 156.5 lbs/day	NA	NA	1	NA
Nitrate plus Nitrite Nitrogen	0.554 mg/L 63.027 lbs/day	0.235 mg/L 36.783 lbs/day	NA	NA	1	(1), (2)
Ammonia (as Nitrogen)	0.87 mg/L 98.96 lbs/day	0.62 mg/L 97.04 lbs/day	NA	NA	1	(1), (2)
Total Phosphorus	0.334 mg/L 38.0 lbs/day	< 0.200 mg/L < 31.3 lbs/day	NA	NA	1	(1), (2)
Temperature	24 °C	25 °F	NA	NA	1	Ambient
pH (standard units)	Minimum 8.23 Maximum 8.23	Minimum 7.39 Maximum 8.50	NA	NA	1	(1), (2)

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Analytical data for all pollutants that are limited in an effluent guideline and/or that are listed in the facility's LPDES permit are provided in Parts A and C.						

Continued from the Front

Outfall 012

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units) Grab Sample Taken During First 30 Minutes	Maximum Values (include units) Flow-weighted Composite	Average Values (include units) Grab Sample Taken During First 30 Minutes	Average Values (include units) Flow-weighted Composite	Number of Storm Events Sampled	Sources of Pollutants
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS						
Aluminum, Total	1.86 mg/L 211.61 lbs/day	0.66 mg/L 106.44 lbs/day	NA	NA	1	(1), (2)
Iron, Total	2.46 mg/L 279.87 lbs/day	1.07 mg/L 167.42 lbs/day	NA	NA	1	(1), (2)
Magnesium, Total	4.11 mg/L 467.68 lbs/day	2.05 mg/L 320.87 lbs/day	NA	NA	1	(1), (2)
Manganese, Total	0.24 mg/L 27.30 lbs/day	0.13 mg/L 20.36 lbs/day	NA	NA	1	(1), (2)
Tin, Total	< 0.025 mg/L < 2.844 lbs/day	< 0.025 mg/L < 3.913 lbs/day	NA	NA	1	NA
Nitrogen, Total Organic	< 1.0 mg/L < 113.8 lbs/day	< 1.0 mg/L < 156.6 lbs/day	NA	NA	1	NA
Total Residual Chlorine	< 0.050 mg/L < 5.688 lbs/day	< 0.050 mg/L* < 4.060 lbs/day*	NA	NA	1	NA
Sulfate	30.3 mg/L 3447.1 lbs/day	10.3 mg/L 1612.2 lbs/day	NA	NA	1	(1), (2)
Sulfide	< 2.00 mg/L < 227.63 lbs/day	< 2.00 mg/L < 313.04 lbs/day	NA	NA	1	NA
Sulfite	< 2.00 mg/L < 227.63 lbs/day	< 2.00 mg/L < 313.04 lbs/day	NA	NA	1	NA
Surfactants	< 0.100 mg/L < 11.377 lbs/day	< 0.100 mg/L < 15.652 lbs/day	NA	NA	1	NA
PRIORITY POLLUTANT METALS, TOTAL CYANIDE AND TOTAL PHENOLS						
Antimony, Total	< 0.060 mg/L < 6.826 lbs/day	< 0.060 mg/L < 9.391 lbs/day	NA	NA	1	NA
Arsenic, Total	< 0.010 mg/L < 1.138 lbs/day	< 0.010 mg/L < 1.566 lbs/day	NA	NA	1	NA
Beryllium, Total	< 0.0050 mg/L < 0.5688 lbs/day	< 0.0050 mg/L < 0.7826 lbs/day	NA	NA	1	NA
Cadmium, Total	< 0.0010 mg/L < 0.1138 lbs/day	< 0.0010 mg/L < 0.1566 lbs/day	NA	NA	1	NA
Chromium, Total	< 0.010 mg/L < 1.138 lbs/day	< 0.010 mg/L < 1.566 lbs/day	NA	NA	1	NA
Chromium, Hexavalent	< 0.010 mg/L < 1.138 lbs/day	< 0.010 mg/L < 1.566 lbs/day	NA	NA	1	NA
Copper, Total	0.016 mg/L 1.820 lbs/day	0.0076 mg/L 1.1896 lbs/day	NA	NA	1	(1), (2)
Lead, Total	0.0082 mg/L 0.9329 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	(1), (2)
Mercury, Total	< 0.00020 mg/L < 0.02276 lbs/day	< 0.00020 mg/L < 0.03130 lbs/day	NA	NA	1	NA
Nickel, Total	< 0.040 mg/L < 4.551 lbs/day	< 0.040 mg/L < 6.261 lbs/day	NA	NA	1	NA
Selenium, Total	< 0.0050 mg/L < 0.5688 lbs/day	< 0.0050 mg/L < 0.7826 lbs/day	NA	NA	1	NA
Silver, Total	< 0.0020 mg/L < 0.2276 lbs/day	< 0.0020 mg/L < 0.3130 lbs/day	NA	NA	1	NA
Thallium, Total	< 0.010 mg/L < 1.138 lbs/day	< 0.010 mg/L < 1.566 lbs/day	NA	NA	1	NA
Zinc, Total	0.31 mg/L 35.27 lbs/day	0.24 mg/L 37.67 lbs/day	NA	NA	1	(1), (2)
Cyanide, Total	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L* < 0.406 lbs/day*	NA	NA	1	NA
Phenols, Total	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L* < 0.406 lbs/day*	NA	NA	1	NA
VOLATILE ORGANIC COMPOUNDS						
Acrolein	< 0.025 mg/L < 2.844 lbs/day	< 0.025 mg/L < 3.913 lbs/day	NA	NA	1	NA
Acrylonitrile	< 0.025 mg/L < 2.844 lbs/day	< 0.025 mg/L < 3.913 lbs/day	NA	NA	1	NA
Benzene	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Bromoform (Tribromomethane)	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Carbon tetrachloride (Tetrachloromethane)	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Chlorobenzene	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Chlorodibromomethane (Dibromochloromethane)	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Chloroethane	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
2-chloroethyvinyl ether	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Chloroform (Trichloromethane)	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
Dichlorobromomethane	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
1,1-Dichloroethane	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA

Continued from the Front

Outfall 012

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units) Grab Sample Taken During First 30 Minutes	Maximum Values (include units) Flow-weighted Composite	Average Values (include units) Grab Sample Taken During First 30 Minutes	Average Values (include units) Flow-weighted Composite	Number of Storm Events Sampled	Sources of Pollutants
1,2-Dichloroethane (Ethylene Dichloride)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
1,1-Dichloroethylene (1,1-Dichloroethene)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
1,2-Dichloropropane	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
1,3-Dichloropropylene (1,3-Dichloropropene)	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Ethylbenzene	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Methyl bromide (Bromomethane)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Methyl chloride (Chloromethane)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Methylene chloride (Dichloromethane)	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
1,1,2,2-Tetrachloroethane	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Tetrachloroethylene (Tetrachloroethene)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Toluene	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
1,2-trans-Dichloroethylene (1,2-trans-Dichloroethene)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
1,1,1-Trichloroethane	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
1,1,2-Trichloroethane	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Trichloroethylene (Trichloroethene)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
Vinyl chloride (Chloroethylene)	< 0.005 mg/l < 0.669 lbs/day	< 0.005 mg/l < 0.783 lbs/day	NA	NA	1	NA
ACID EXTRACTABLE COMPOUNDS						
2-Chlorophenol	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
2,4-Dichlorophenol	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
2,4-Dimethylphenol	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
4,6-Dinitro-o-cresol (4,6-dinitro-2-methylphenol)	< 0.05 mg/l < 5.69 lbs/day	< 0.05 mg/l < 7.83 lbs/day	NA	NA	1	NA
2,4-Dinitrophenol	< 0.05 mg/l < 5.69 lbs/day	< 0.05 mg/l < 7.83 lbs/day	NA	NA	1	NA
2-Nitrophenol	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
4-Nitrophenol	< 0.05 mg/l < 5.69 lbs/day	< 0.05 mg/l < 7.83 lbs/day	NA	NA	1	NA
p-Chloro-m-cresol (4-chloro-3-methylphenol)	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Pentachlorophenol	< 0.05 mg/l < 5.69 lbs/day	< 0.05 mg/l < 7.83 lbs/day	NA	NA	1	NA
Phenol	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
2,4,6-Trichlorophenol	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
BASE/NEUTRAL COMPOUNDS						
Acenaphthene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Acenaphthylene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Anthracene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Benzidine	< 0.04 mg/l < 4.55 lbs/day	< 0.04 mg/l < 6.26 lbs/day	NA	NA	1	NA
Benzo(a)anthracene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Benzo(a)pyrene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
3,4-Benzofluoranthene (Benzo(b)fluoranthene)	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Benzo(ghi)perylene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Benzo(k)fluoranthene	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Bis(2-chloroethoxy)methane	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Bis(2-chloroethyl)ether	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA
Bis(2-chloroisopropyl)ether	< 0.01 mg/l < 1.14 lbs/day	< 0.01 mg/l < 1.67 lbs/day	NA	NA	1	NA

Continued from the Front

Outfall 012

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Bis(2-ethylhexyl)phthalate	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
4-Bromophenyl phenyl ether	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Butylbenzyl phthalate	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
2-Chloronaphthalene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
4-Chlorophenyl phenyl ether	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Chrysene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Dibenzo(a,h)anthracene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
1,2-Dichlorobenzene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
1,3-Dichlorobenzene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
1,4-Dichlorobenzene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
3,3'-Dichlorobenzidine	< 0.02 mg/L < 2.28 lbs/day	< 0.02 mg/L < 3.13 lbs/day	NA	NA	1	NA
Diethyl phthalate	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Dimethyl phthalate	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Di-n-butyl phthalate	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
2,4-Dinitrotoluene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
2,6-Dinitrotoluene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Di-n-octyl phthalate	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
1,2-Diphenylhydrazine (as azobenzene)	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Fluoranthene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Fluorene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Hexachlorobenzene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Hexachlorobutadiene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Hexachlorocyclopentadiene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Hexachloroethane	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Indeno(1,2,3-cd)pyrene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Isophorone	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Naphthalene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Nitrobenzene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
n-Nitrosodimethylamine	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
n-Nitrosodi-n-propylamine	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
n-Nitrosodiphenylamine	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Phenanthrene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
Pyrene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
1,2,4-Trichlorobenzene	< 0.01 mg/L < 1.14 lbs/day	< 0.01 mg/L < 1.67 lbs/day	NA	NA	1	NA
PESTICIDES, HERBICIDES, AND PCBs						
Aldrin	< 0.00005 mg/L < 0.00569 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
Alpha-BHC	< 0.00005 mg/L < 0.00569 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
Beta-BHC	< 0.00005 mg/L < 0.00569 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
Delta-BHC	< 0.00005 mg/L < 0.00569 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA

Continued from the Front

Outfall 012

Part C - List each pollutant shown in Tables 2F-2, 2F-3 and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-weighted Composite		
Gamma-BHC (Lindane)	< 0.00005 mg/L < 0.00669 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
Chlordane	< 0.00025 mg/L < 0.02844 lbs/day	< 0.00025 mg/L < 0.03913 lbs/day	NA	NA	1	NA
4,4-DDT	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
4,4-DDE	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
4,4-DDD	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
Dieldrin	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
Alpha-endosulfan (Endosulfan I)	< 0.00005 mg/L < 0.00669 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
Beta-endosulfan (Endosulfan II)	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
Endosulfan sulfate	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
Endrin	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
Endrin aldehyde	< 0.0001 mg/L < 0.0114 lbs/day	< 0.0001 mg/L < 0.0167 lbs/day	NA	NA	1	NA
Heptachlor	< 0.00005 mg/L < 0.00669 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
Heptachlor epoxide	< 0.00005 mg/L < 0.00669 lbs/day	< 0.00005 mg/L < 0.00783 lbs/day	NA	NA	1	NA
PCB-1242	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
PCB-1254	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
PCB-1221	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
PCB-1232	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
PCB-1248	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
PCB-1260	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
PCB-1016	< 0.001 mg/L < 0.114 lbs/day	< 0.001 mg/L < 0.167 lbs/day	NA	NA	1	NA
Toxaphene	< 0.005 mg/L < 0.569 lbs/day	< 0.005 mg/L < 0.783 lbs/day	NA	NA	1	NA
OTHER PARAMETERS						
Total Dissolved Solids	171 mg/L 19464 lbs/day	118 mg/L 18470 lbs/day	NA	NA	1	(1), (2)
Chloride	26.4 mg/L 3003.4 lbs/day	22.9 mg/L 3584.4 lbs/day	NA	NA	1	(1), (2)

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow-weighted composite sample.

1. Date of Storm Event	2. Duration of Storm (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
6/16/2004	> 180	2.60	> 72 Hours	27.920 MGD	> 28 million gallons

7. Provide a description of the method of flow measurement or estimate

The flow rates were estimated by multiplying the time it took for an object to travel a known distance [feet per second (ft/sec)] by the width and depth of the discharge channel [feet squared (ft^2)] to derive flow rates in cubic feet per second (cfs). The flows measured in cfs were converted to million gallons per day (MGD).

NOTES:

* These parameters cannot be composited. Therefore, they were collected as grab samples immediately after the composite sampling period.

Mass values for the first flush grab samples were calculated using the following flow rate in million gallons per day measured during the sampling event: 13.641
Mass values for the flow-weighted composite samples were calculated using the average of the flow rates in million gallons per day measured during the composite sampling event: 18.768
Mass values for the grab samples for parameters that cannot be composited were calculated using the following flow rate in million gallons per day measured during the sampling event: 9.737

NA = Not Applicable
< = Indicates parameters analyzed were not detected at or above the respective analytical method detection limit.
°C = Degrees Celsius
MGD = million gallons per day

FOOTNOTES:

(1) Particulate deposition from sources associated with raw material, by-product, and/or final product handling, transfer, processing and/or storage and storm water runoff (contact with facility roads and properties)
(2) Incidental to industrial activity.

Appendix D

METHODOLOGY

Pollutants of Concern Assessment

Pollutants of concern (POCs) are pollutants that, because of their concentration in water or sediments, are toxic to aquatic life or pose a threat to human health. Several sources of information were used to determine POCs for each subsegment:

- EPA's court-ordered 303(d) List, which identifies pollutants that have degraded water quality;
- Pollutants identified in a fish advisory;
- Pollutant concentrations in water compared to Louisiana's water quality standards and EPA's Water Quality Criteria;
- Pollutant concentrations in sediments compared to EPA's draft Equilibrium Partitioning Sediment Guidelines (ESGs) and the National Oceanic and Atmospheric Administration's Effects Range Median screening levels (ERMs);
- Pollutant concentrations in fish tissue compared to values derived based on Louisiana's policy for setting fish advisories; and
- Results of a sediment toxicity identification evaluation (TIE) for parts of the estuary.

303(D) LIST

The 303(d) List (Table 1) identifies specific pollutants (e.g., copper, 1,2-dichloroethane) and categories of pollutants (priority organics, nonpriority organics, metals, toxicity) that cause impairment of the water or sediments of one or more subsegments of the Calcasieu Estuary. Specific pollutants identified on the 303(d) List were selected as pollutants of concern.

Pollutants of concern within categories of pollutants on the 303(d) List were identified by assessment of all existing and readily available water and sediment quality data (40 CFR 130.7(b)(5)).

FISH CONSUMPTION AND SWIMMING ADVISORIES

The Louisiana Department of Health and Hospitals (LDHH), in conjunction with the LDEQ, has issued a fish consumption and swimming advisory for Bayou D'Inde because of fish and sediment contamination with hexachlorobenzene, hexachlorobutadiene, and PCBs (http://www.deq.state.la.us/surveillance/mercury/fishadvi.htm). There is also a fish advisory for Bayou Olson, a tributary to Moss Lake. There is an informational advisory on fish contamination for the remainder of the estuary. These pollutants were selected as pollutants of concern for Bayou D'Inde. For other subsegments of the estuary, these pollutants were selected as pollutants of concern based on water, sediment, and fish tissue data. Methodologies are described in the sections Water and Sediment Data Sources and Methodology and Fish Tissue Data Sources and Methodology, below.

WATER AND SEDIMENT DATA SOURCES AND METHODOLOGY

This section describes the sources of data used to characterize pollutants in the water column and the methodology used to summarize the data.

EPA Superfund Data

CDM, under contract to EPA, took and analyzed a number of water samples for a variety of organic compounds and metals in several subsegments of the estuary as part of a Superfund RI/FS. These data are contained in a Microsoft Access database that was obtained from Region 6. The database contains over 150,000 records of pollutant-specific concentrations in water and sediments. To use this data for this study, each sample location (identified by latitude and longitude) was allocated to the appropriate subsegment of the estuary (See Appendix Figure C-2 for station locations). Data for stations in any of the subsegments of the Calcasieu Estuary covered by this document were extracted from the database.

For this study, the water and sediment data from the Microsoft Access database were analyzed separately. The water data contain results for both the dissolved fraction of metals and the total metal concentration. Dissolved data were used for evaluation of water quality exceedances, and total data were used for evaluating possible impacts on sediments.

Similarly, many sediment samples contain both pollutant concentrations and total organic carbon concentrations. Where possible, sediment pollutant concentrations were converted to concentration per gram organic carbon. The unconverted and converted sediment datasets were then analyzed separately. Note that the dataset with unconverted data contain all reported results—the underlying data for both the converted and unconverted datasets are the same.

For each subsegment and each pollutant, the number of samples, the number of detected values, the maximum detected value, and the mean of detected values were determined. These data are summarized in Appendix B.

LDEQ Ambient Water Quality Network Data

LDEQ maintains a database of monitoring data for a large number of waterbodies in Louisiana (http://www.deq.state.la.us/surveillance/wqdata/wqnsites.stm). All "general" and "metals" data from the website were downloaded for all subsegments of the Calcasieu Estuary, and the records were extracted into a Microsoft Access database. The Ambient Water Quality Network data is organized by subsegment, so there was no need to allocate sample locations to subsegments.

An individual record was created in the Microsoft Access database for each observation, and each record was marked as detected or nondetected (signified by a "K" in the Louisiana database). All records containing only blanks or zeros were then deleted from the database.

For each subsegment and each metal, the number of samples, the number of detected values, the maximum detected value, and the mean of detected values were determined.

The number of times a detected value of a pollutant in water exceeded its acute or chronic aquatic life dissolved criterion was also determined, and it was determined whether the mean of detected values exceeded its human health criterion.

Within each subsegment of the estuary, all metals with more than one detected value greater than an aquatic life dissolved criterion were selected as pollutants of concern. This approach is consistent with the approach taken by LDEQ for recent assessments sent to EPA (LDEQ 2001d). Similarly, all pollutants in a subsegment with means of detected values greater than a human health criterion were selected as POCs provided that the pollutant was detected more than once.

Data Submitted in Comments on the Draft TMDL

PPG Industries submitted a copy of a report that compares water column copper concentrations analyzed by conventional methods and concentrations analyzed by clean techniques.

LDEQ submitted an assessment of water quality for some of the subsegments based on water column samples analyzed with clean techniques.

National Oceanic and Atmospheric Administration's Calcasieu Data

NOAA's Office of Response and Restoration has compiled an environmental database covering several coastal waterbodies nationwide. Data for the Calcasieu Estuary were downloaded from NOAA's website (http://response.restoration.noaa.gov/cpr/qm/windowsqm.html) and imported into a Microsoft Access database. The data were filtered to obtain the results for only three studies (the database contains a version of the EPA Superfund data described above): 1996 EPA Bayou D'Inde Focused Site Invs, 1993-94 PPG B.Verdine/Coon Is/Ship Chan, 1994 PPG B.d'Inde/PPG Canal/Ship Chan. No other studies had data covering the relevant portions of the Calcasieu for recent years except for the 1999-2000 Superfund data.

Each result record was examined to determine if the reported value was detected or not. It was assumed that each record containing a "U" or a "B" as part of the QUAL_CODE field was not detected. All other values were assumed to be detected.

Each sample location (identified by latitude and longitude) was allocated to the appropriate subsegment of the estuary.

For each subsegment and each pollutant, the number of samples, the number of detected values, the maximum detected value, and the mean of detected values was determined.

If 10% or more of detected values of a pollutant in a subsegment exceeded an ERM, the pollutant was selected as a pollutant of concern. This rule of thumb identified those pollutants that were likely to cause sediment toxicity over relatively large areas. Since ERMs are based on sediment toxicity, this approach is consistent with Louisiana's narrative toxicity standard (LAC 33:IX.1113.A.5).

Fish Tissue Data

PPG Industries, Inc., the Louisiana Department of Health and Hospitals, and LDEQ participate in the Calcasieu Estuary Biological Monitoring Program. This program analyses and reports on concentrations of a range of organic pollutants in fish species throughout the estuary. The Year 12 Annual Report 2000 - 2001 was obtained from PPG and the data for hexachlorobenzene, hexachlorobutadiene, and Aroclor 1254 extracted and summarized. Results appear in Appendix D.

During the 1990s, several small studies on mercury contamination in fish were conducted in Bayou D'Inde and the upper Calcasieu Estuary and Ship Channel. The data were compiled into a database by NOAA's Office of Response and Restoration. These data were downloaded from NOAA's website (http://response.restoration.noaa.gov/cpr/qm/windowsqm.html), and the data summarized by species and subsegment. Results appear in Appendix D.

Water-based Pollutants of Concern

For each pollutant on Attachment A of the consent decree and for categories of pollutants on the court-ordered 303(d) List, water column data (Appendix B) were compared against pollutant-specific criteria contained in Louisiana Numerical Criteria for Specific Toxic Substances (LAC 33.IX.1113.C.6) (hereafter referred to as criteria). If Louisiana standards contain no criteria for a pollutant, EPA's recommended Water Quality Criteria (http://www.epa.gov/ost/pc/revcom.pdf) were used as water quality criteria based on Louisiana's narrative toxicity standard (LAC 33:IX.1113.A.5). Criteria are presented in Appendix A.

The number of times a detected value of a pollutant exceeded an acute or chronic aquatic life dissolved criterion was determined. It was determined whether the mean of detected values exceeded a human health criterion.

Within each subsegment of the estuary, all pollutants with more than one detected value greater than an aquatic life dissolved criterion were selected as pollutants of concern. Similarly, all pollutants in a subsegment with means of detected values greater than a human health criterion were selected as POCs provided that the pollutant was detected more than once. These approaches are consistent with section 305(b) guidelines, and current practices in assessing human health water quality criteria.

LDEQ provided an assessment of subsegments based on concentrations of a few pollutants analyzed by clean techniques. The assessment indicated that nickel exceeds applicable marine criteria in Bayou Verdine, so nickel was selected as a pollutant of concern.

Sediment-based Pollutants of Concern

For pollutant categories identified on the court-ordered 303(d) List, pollutants of concern based on sediment data were identified in one of two ways. The converted dataset (units of µg/g organic carbon) was compared to EPA's draft Equilibrium Partitioning Sediment Guidelines (ESGs, see Appendix A). If 10% or more of detected values of a pollutant in a subsegment exceeded its ESG, it was selected as a pollutant of concern based on Louisiana's narrative toxicity standard (LAC 33:IX.1113.A.5). Similarly, the unconverted dataset (units of µg/kg) was compared to NOAA's Effects Range Median screening levels (ERMs, see Appendix A). If 10% or more of detected values of a pollutant in a subsegment exceeded an ERM, it was selected as a pollutant of concern.

The location of pollutants of concern that exceeded either water quality criteria or sediment quality guidelines were plotted on a map of the estuary as an aid in understanding sources of pollutants with exceedances. These maps appear in Appendix C.

Source Assessment

Upstream and Tributary Sources

Upstream and tributary sources were estimated by multiplying the average water concentration of a pollutant in the nearest upstream or tributary subsegment times the upstream or tributary low flow. Upstream concentration data were generally limited to metals for which the low flow assumption is appropriate. Also, there are few data for organic pollutants or concentrations of organic compounds of interest in upstream or tributary waters. When no data were available or the great majority of upstream samples were not detected, a zero load was assumed.

Point Sources

Information about all facilities in the Calcasieu Estuary were obtained from EPA's Permit Compliance System (PCS) and, many comments were received on the Draft TMDL. For facilities identified in comments on the Draft TMDL by LDEQ, facility NPDES permits, fact sheets, and in some cases, permit applications and the most recent year's discharge monitoring reports (DMRs) were evaluated.

General information about all facilities in Calcasieu and Cameron Parishes was downloaded from EPA's Permit Compliance System (PCS) database to establish a full list of discharges to the upper Calcasieu Estuary (www.epa.gov/enviro/html/pcs/pcs_query_java.html). These facilities are listed in Appendix E. Discharge data for all facilities that discharge to the Calcasieu Estuary (Hydrologic Unit Code [HUC] 08080206) were then downloaded. Those facilities in Calcasieu and Cameron Parishes that had no entry for HUC were searched facility-by-facility to determine whether PCS contains discharge data for them.

Locations of discharges were taken from facility NPDES permits and fact sheets.

All facilities with latitude and longitude data appear in Appendix Figure C-1. Facilities with discharge information appear in Appendix Figure C-2.

Appendix Table E-1 presents all facilities evaluated.

Appendix Table E-3 presents reported average and maximum flows for each facility for each outfall.

Appendix Table E-4 presents the average flows recorded in permit fact sheets for facilities that have no flow data in PCS. Some facilities have no flow data in the fact sheets, either, but none of these facilities are located on subsegments that are subject to TMDLs.

Permit limits for pollutants of concern for each facility were downloaded from the PCS database. These limits were checked against limits in the most recently issued permit for each facility and modified as appropriate. Where no permit limits were identified in PCS, limits were taken from the most recently issued permit.

Appendix Table E-6 presents the effluent limits for pollutants of concern, by facility, outfall, and pollutant.

PCS reports average monthly and maximum daily loads by outfall. Many of the outfalls listed are stormwater outfalls, and larger facilities often have a number of process, nonprocess, and

stormwater outfalls. All data by facility by outfall were downloaded, and the average load of each pollutant for each outfall (the average of the reported average loads) and the maximum load of each pollutant for each outfall (the maximum reported load) were determined.

Where concentrations or loads appear as "<" values (nondetects), a value of 1/2 of the detection limit was assumed in calculating loads. Some facilities, however, reported nondetects as zeros. These values were not included in the calculations of average and maximum daily loads, but the number of nondetects are recorded to allow interpretation of the reported loads.

Calculated loads by facility by outfall appear in Appendix Table E-7.

Nonpoint Sources

Nonpoint source estimates were developed for all subsegments for four pollutants: copper, lead, nickel, and ammonia. These are the pollutants for which there are substantial data on pollutant concentrations in urban runoff, the major nonpoint source for these pollutants.

Several documents were examined for appropriate methodologies to use to estimate nonpoint source loads. These included Modeling of Nonpoint Source Water Quality in Urban and Non-urban Areas (EPA 1991), Water Quality Assessment: A Screening Procedure for Toxic and *Conventional Pollutants in Surface and Ground Water--Part I (Revised--1985)(EPA 1985), and* Principles of Surface Water Quality Monitoring and Control (Thoman and Mueller, 1987). All of the models in these documents that were considered appropriate to use required substantially more detailed information than is available for the Calcasieu Estuary. Consequently, a more simple approach was adopted.

Nonpoint source loads were estimated based on a model downloaded from the Center for Watershed Protection website at: www.stormwatercenter.net/monitoring%20and%20assessment/simple%20meth/simple.htm. The model uses land use areas, annual rainfall, percent imperviousness, and average concentrations of pollutants to predict annual loads.

Land use data was obtained from the Louisiana GIS (http://atlas.lsu.edu/search/searchAtlas.htm), which is based on 1980 USGS land use data. No more recent land use data are available. All industrial, commercial, residential, and infrastructure land uses were grouped into an urban land category, and an average percent imperviousness of 60% was applied uniformly across the urban land category. Annual average rainfall of 54 inches was used, and concentrations of zinc, lead, and copper were taken from the median event, median concentrations reported in the Results of the Nationwide Urban Runoff Program (EPA 1983) for all sites (copper, 0.047 mg/L; lead, 0.18 mg/L, and zinc, 0.176 mg/L). The ammonia concentration was taken from the storm water center website listed above (1.1 mg/L). No other national or local databases that could be used to estimate stormwater concentrations for other pollutants were found.

Output from the model is an average annual nonpoint source load, but for assessing the significance of nonpoint sources during low flow conditions, the loads need to be adjusted. This was done by multiplying the annual load times the ratio of the mean flow for a subsegment to its 7Q10 flow. The resulting loads were then divided by 365 to obtain daily low flow urban nonpoint source loads.

Estimated average and low-flow nonpoint source loads appear in Appendix Table F-1.

Atmospheric Sources

There are limited sources of data for emissions and deposition of atmospheric sources in either Calcasieu or Cameron Parishes. Data were obtained in two forms: air releases and air deposition. Procedures employed to access and manipulate the data are described in the following paragraphs.

To gain an appreciation of total releases of pollutants of concern, Toxic Release Inventory System (TRIS) data were obtained from both EPA and Louisiana. The data in the two versions were essentially identical. Data were extracted from the database for the years 1996 - 1999 for Calcasieu, Cameron, Beaurgard, and Allen Parishes. The great majority of facilities reporting releases, however, were in Calcasieu Parish.

Once the data were downloaded, they were summed by pollutant across all years and divided by the number of days in four years. This resulted in an average daily release of each pollutant in pounds per day. The resulting release data appear in Appendix Table F-5. These data were used to determine if appreciable atmospheric loads might occur for a variety of pollutants, although it was not possible to estimate atmospheric loads for any pollutant from the available data.

Air deposition data are available for only one pollutant of concern, mercury. The annual deposition of mercury at National Atmospheric Deposition Program station LA05 near Lake Charles, Louisiana is 10.6 $\mu g/m^2$ (Christina Laurin, FTN Associates[2], personal communication). This value was used to estimate atmospheric mercury loads to each subsegment by multiplying by the subsegment surface area in square meters and dividing by 365 to get an average daily atmospheric load. The load was then converted to pounds per day to make it comparable with other load estimates for the estuary. The resulting loads appear in Appendix Table F-4. The accuracy of the estimate is best in the Lake Charles area, but atmospheric loads are likely overestimated in more downstream parts of the estuary. Overestimation would be highest for large, open waterbodies considerably south of the monitoring station—areas such as Calcasieu Lake—because, with the absence of significant sources in the Gulf of Mexico and the predominantly southern winds, deposition over coastal areas would tend to be lower than deposition over the Lake Charles area.

Total Maximum Daily Load Calculation

A total maximum daily load (TMDL) is a written plan established to ensure that a waterbody will attain and maintain water quality standards. It includes consideration of existing pollutant loads and reasonably foreseeable increases in pollutant loads. It is intended to provide an opportunity to compare relative contributions from all sources and consider technical and economic trade-offs between point and non-point sources. The following steps comprise the process for establishing a TMDL for a pollutant of concern:

- Estimate waterbody assimilative capacity
- Estimate loads from all sources to the waterbody
- Determine total allowable load

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[2] FTN Associates is developing the mercury TMDL for the Gulf Coastal Waters and Estuaries.

- Allocate (with a margin of safety) the allowable load among sources.

A TMDL is the maximum daily load of a pollutant that can be discharged to a waterbody that ensures applicable water quality criteria will be met, such that water quality standards are achieved. Ideally, TMDLs should be based on the results of a water quality analysis that estimates the fate of a pollutant in a waterbody based on known and quantified sources of pollutants and known and quantifiable natural processes. Accurate predictions, however, require site-specific data for a variety of parameters that are not routinely measured. Nevertheless, data from other locations can be used to estimate the importance of those natural processes for which there are no site-specific data. While there are extensive data for the Calcasieu Estuary for some parameters (concentrations of pollutants in sediments, for example), there are limited data on a variety of parameters that can affect the fate and effects of discharged pollutants. The most significant limitation is with freshwater and tidal flows, particularly for tributaries to the Calcasieu Estuary and Ship Channel, loops, and lakes.

In any water body, the major natural processes that affect the fate of pollutants are:

- Advective flow (water flow from upstream to downstream),
- Tidal dispersion (upstream and downstream flow caused by tides),
- Settling of pollutants attached to suspended solids in the water column and resuspension of pollutants attached to sediments,
- Transport of sediments upstream and downstream through advective and tidal water movement, and
- Diffusion of dissolved pollutants from the water column to sediment pore water and diffusion of dissolved pollutants in the sediment pore water to the water column.

Water Quality Modeling Data Sources

The Water Quality Analysis Simulation Program-6 (WASP6, Wool et al, 2001) was initially selected for modeling the Calcasieu Estuary because it has the capability of handling all of these processes. WASP6 is a dynamic compartment modeling program for aquatic systems that includes both the water column and the underlying sediments.

Although the WASP6 modeling system provides an excellent general tool to model the natural processes that determine the fate of various pollutants in the Calcasieu Estuary, data that can be used to estimate these processes in the Calcasieu Estuary are extremely limited. Because of these limitations, model results varied over a large range, depending on assumptions made about parameters for which there were no data. As a result, the use of the model as a quantitative tool to estimate allowable loads was not deemed appropriate. Nevertheless, the model was used to explore the importance of the processes that affect the fate of pollutants in the estuary.

Advective Flow

While there are advective flow data for various time periods for some subsegments, there are no flow data for other time periods or subsegments. Generally, flow data are available for the main

channels of the estuary, but not available for Lake Charles, Prien Lake, Calcasieu Lake, Clooney Island, and Coon Island Loops. Similarly, there are no flow data for Contraband Bayou, Bayou Verdine, and all other tributary sources to the estuary except Bayou D'Inde. When attempts were made to estimate runoff from tributary sources, resulting flows were inconsistent with other data that were available.

Tidal Dispersion

Tidal dispersion has the effect of distributing specific discharges of pollutants upstream and downstream. The incorporation of tidal dispersion in a model thus results in a lower predicted concentration in a receiving waterbody than if dispersion was not included. Information on tidal dispersion is lacking for much of the estuary.

In developing NPDES permits for facilities, Louisiana calculates the flow over a tidal cycle by estimating the volume of water that enters a waterbody over a tidal cycle and dividing by the tidal period as a method to incorporate the effects of tidal dispersion (as specified in LDEQ 2001e). While this procedure results in a considerably higher flow than the advective flow, and higher flows result in greater dilution, it is a maximum estimate of the dilution capacity of a given waterbody at a given point. Nevertheless, these are the only consistent estimates of tidal flows and they are available for each subsegment for which TMDLs are calculated. The maximum tidal flows for each of the subsegments for which TMDLs are calculated appear in Table 4.

Table 4. Maximum Tidal Flows by Subsegment

Subsegment	*Waterbody*	Harmonic Mean Flow *(cfs)*	Critical Low Flow *(cfs)*
030301	Upper Calcasieu Estuary	9,010	3,003
030305	Contraband Bayou	96	32
030306	Bayou Verdine	10.4	3.46
030401	Lower Calcasieu Estuary	2,880	960
030901	Bayou D'Inde	363	121

Source: NPDES Permit Fact Sheets

While these are the only consistently estimated tidal flows, there is concern that these estimates are not sufficiently accurate to ensure the waterbodies would be protected if effluent dilutions are calculated using them. At low flow, for example, with essentially no downstream movement of pollutants (as is the case with Bayou Verdine), a facility would discharge into essentially the same volume of water on consecutive tides. Although there would be some mixing of the receiving water volume with presumably more dilute water downstream during each tidal cycle, the mixing would be far from complete. There are, however, no data that allow the estimation of the extent of mixing at any point in the estuary.

Particulate Deposition and Resuspension

Many toxic pollutants, including most metals and those pollutants with elevated concentrations in sediments, attach strongly to particles and behave more as if they were particles than if they were dissolved in the water column. With low flows (and low turbulence), any particles (with attached pollutants) tend to settle out of the water column to the sediments. At higher flows (and higher turbulence), some settled particles are resuspended into the water column and transported downstream. However, there are no data on the fraction of organic pollutants that are attached to particles or the particles to which they may be attached.

The rate at which particles settle and their propensity to be resuspended depends primarily on their density. If particles have a density greater than that of water, their tendency is to settle out of the water column. The greater the differential between the density of water and the density of the particle, the greater the tendency for particles to settle to and remain in the sediments.

Although the amount of metallic pollutants (e.g., copper, mercury, and lead) that are attached to particles in various subsegments of the Calcasieu Estuary can be estimated as the difference between the total and dissolved form of pollutant, the density of the particles to which they are attached is unknown. Given that most point source facilities have settling as part of their treatment train, particles derived from point sources tend to be less dense than particles associated with other sources, such as nonpoint sources. But this does not change the fact that the density of the source particles and the density of the particles in the receiving water is not known.

In running the water quality model under a variety of assumptions related to source and instream particulate densities, the net effect of including particle settling and resuspension is to reduce the predicted receiving water concentration for a given load, particularly at low flow. In other words, when particle settling and resuspension are addressed in the model, a greater total maximum daily load results. The increased loading, however, results in increased sedimentation, an undesirable result where contaminated sediments are an issue. Therefore, in the absence of data (as well as to prevent overestimating the allowable load that increases sediment loadings) particle settling and resuspension were not included when estimating waterbody assimilative capacity.

Water Column/Sediment Pore Water Interaction

Pollutants in the water surrounding sediment particles (sediment pore water) diffuse into or from the water column based on the relative concentrations of pollutants in the water column and pore water. Given the sediment concentrations of some pollutants in sediments, it was suspected that the sediments could be supplying significant amounts of pollutants to the water column. If this were true, then the assimilative capacity of the waterbody should be reduced by the amount of a pollutant that diffuses from the sediment to the water column.

Diffusion is a very slow process, and diffusion from the sediments to the water column is most significant with high sediment concentrations, low water column concentrations, and low flows. Using a variety of diffusion rates from the literature, the relative contribution of diffusion from pore water to the water column was examined in three model runs for copper in Bayou D'Inde and three model runs for benzo (a) pyrene in Bayou Verdine using loads expected to result in the most stringent water quality criterion for the pollutant. The highest sediment copper

concentration occurs in Bayou D'Inde, and the highest sediment benzo (a) pyrene concentration occurs in Bayou Verdine. The model runs showed that sources of copper and benzo (a) pyrene other than sediment contribute more than 99.99% of the load to the water column. For this reason, sediment concentrations were ruled out as a potential source of pollutants to the water column.

Total Maximum Daily Load Estimates

Two approaches were taken to determine appropriate TMDLs for the Calcasieu Estuary. They are a mass-balance approach (to ensure that the total load to a waterbody does not exceed its assimilative capacity) and the procedures used by LDEQ in developing water quality-based effluent limits (to ensure each discharge does not cause a localized water quality problem). Both are necessary to adequately protect each waterbody. Wasteload allocations are calculated for each pollutant of concern in a subsegment for each facility that is reasonably expected to discharge the pollutant. The smallest of the two allocations for each facility is then selected as the wasteload allocation.

Pollutants that are reasonably expected to be discharged by a facility are based on each facility's Standard Industrial Classification (SIC). The pollutants are identified based on EPA's Effluent Guidelines, an inspection of existing facility permit limits, comments on the Draft TMDL, and best professional judgment (where existing information is limited). Each facility's primary SIC is presented in Appendix Table E-1. Appendix Table E-2 presents those pollutants reasonably expected to be discharged by each SIC.

The assimilative capacity wasteload allocations are calculated as follows:

1. The assimilative capacity load of a pollutant is determined as the most stringent water quality criterion times a conversion factor times the sum of the maximum appropriate waterbody tidal flow (Table 4) plus the sum of average process flows for each facility that is reasonably expected to discharge the pollutant to the subsegment. For acute and chronic aquatic life criteria, critical low flows are used; for human health criteria, harmonic mean flows are used. Facility process flows for each subsegment are presented in Appendix Tables E-3 and E-4. The summed process flows for each facility in each subsegment are presented in Appendix Table E-5. (Note that the 20% margin of safety is subtracted at this point.)

2. Upstream and tributary loads are subtracted from the assimilative capacity. (Note that the only appreciable upstream plus tributary load is for copper to the Upper Calcasieu Estuary.)

3. An allowable load per mgd of facility process flows that are reasonably expected to discharge the pollutant is calculated by dividing the assimilative capacity by the sum of process flows for each subsegment for each pollutant (Appendix Table E-10).

4. Assimilative capacity-based wasteload allocations are calculated by multiplying the assimilative capacity per mgd times each facility's process flows (Appendix Table E-12).

The LDEQ wasteload allocations are calculated as follows:

1. The dilution factor is calculated as the effluent flow (Qe) divided by the product of the appropriate tidal flow (Qr) times the appropriate mixing zone fraction (Fs) plus the effluent flow, with all flows converted to the same units.
2. The wasteload allocation is the criterion (Cr) times the effluent flow (Qe) times a conversion factor divided by the dilution factor. Calculations and results appear in Appendix Table E-13)

The applicable wasteload allocation is selection as the lesser of the assimilative capacity and LDEQ wasteload allocations (Appendix Table E-14).

Monitoring

For each pollutant of concern in each subsegment, an appropriate monitoring program was developed based on the level of available information. In each case, an ambient monitoring program was deemed appropriate for at least two reasons: to determine whether water quality criterion values are exceeded in the waterbody and to assess trends in water quality. For pollutants that exceed sediment quality guidelines, an ambient monitoring program was deemed appropriate to determine trends in sediment concentrations. With appropriate controls, sediment concentrations should decline over time. With inadequate controls, however, sediment concentrations would increase.

TMDLS FOR SUBSEGMENT 030901, BAYOU D'INDE

Bayou D'Inde, subsegment 030901 of the Calcasieu River Basin, lies in Calcasieu Parish, in the northern portion of the Calcasieu Estuary, southwest of the city of Lake Charles. Bayou D'Inde's headwaters originate in the western part of Sulphur, Louisiana and flow 9 miles primarily east-southeast through heavy commercial and industrialized areas. It empties into the Calcasieu Ship Channel just west of Prien Lake. See Figure 3 for the location of subsegment 030901.

The Bayou D'Inde watershed covers approximately 21,000 acres. The surface elevation in the area of the bayou averages about 10 feet above mean sea level (msl). The area surrounding Bayou D'Inde lies within the 100-year flood plain of the Calcasieu River Basin (PRC 1994). The bayou ranges from 80 to 150 feet wide and up to 16 feet deep. Floodwater frequently covers soils surrounding the bayou to depths of 1 to 6 feet for periods of up to 10 days, mostly in winter and spring (PRC 1993). Its headwaters are fresh and mix with brackish water of the Calcasieu Estuary to the south.

According to the USFWS National Wetland Inventory Map, the upper reaches of Bayou D'Inde are riverine and permanently flooded. This portion of the bayou has water depths ranging from 1.2 to 2.1 meters (m) (approximately 4 to 7 feet) and is not tidally influenced. The lower reaches of the bayou are tidally influenced, with up to three inches of daily water level fluctuation. Channel depths range up to 5 m (16 feet).

The land around Bayou D'Inde includes undeveloped wooded marsh land, rural residential, commercial, and heavy industrial property. Rural residential and undeveloped woodland areas border the bayou northwest upstream of the industrial area. Heavy industry dominates the middle and southern reaches of Bayou D'Inde on both sides.

Subsegment 030901 incorporates only a portion of the Bayou D'Inde AOC because the confluence of Bayou D'Inde with the Calcasieu Ship Channel, adjacent to the Lower Calcasieu River AOC, has been incorporated by subsegment 030301 of the Calcasieu River Basin. This report includes the submerged areas and bayou channel up to the boundary of the ship channel as part of Bayou D'Inde.

Designated Uses

LDEQ has designated Bayou D'Inde for primary contact recreation, secondary contact recreation, and propagation of fish and wildlife (LAC 33:IX.1123.A, Table 3). It is not a drinking water source. Bayou D'Inde currently supports recreational fishing and has several delineated wetlands that are considered sensitive environments.

Pollutants of Concern

EPA's court-ordered 303(d) List identifies priority organics, nonpriority organics, other inorganics, and contaminated sediments for Bayou D'Inde. Four priority organic compounds are listed (tetrachloroethane, hexachlorobutadiene, bromoform, and PCBs), and copper is also listed.

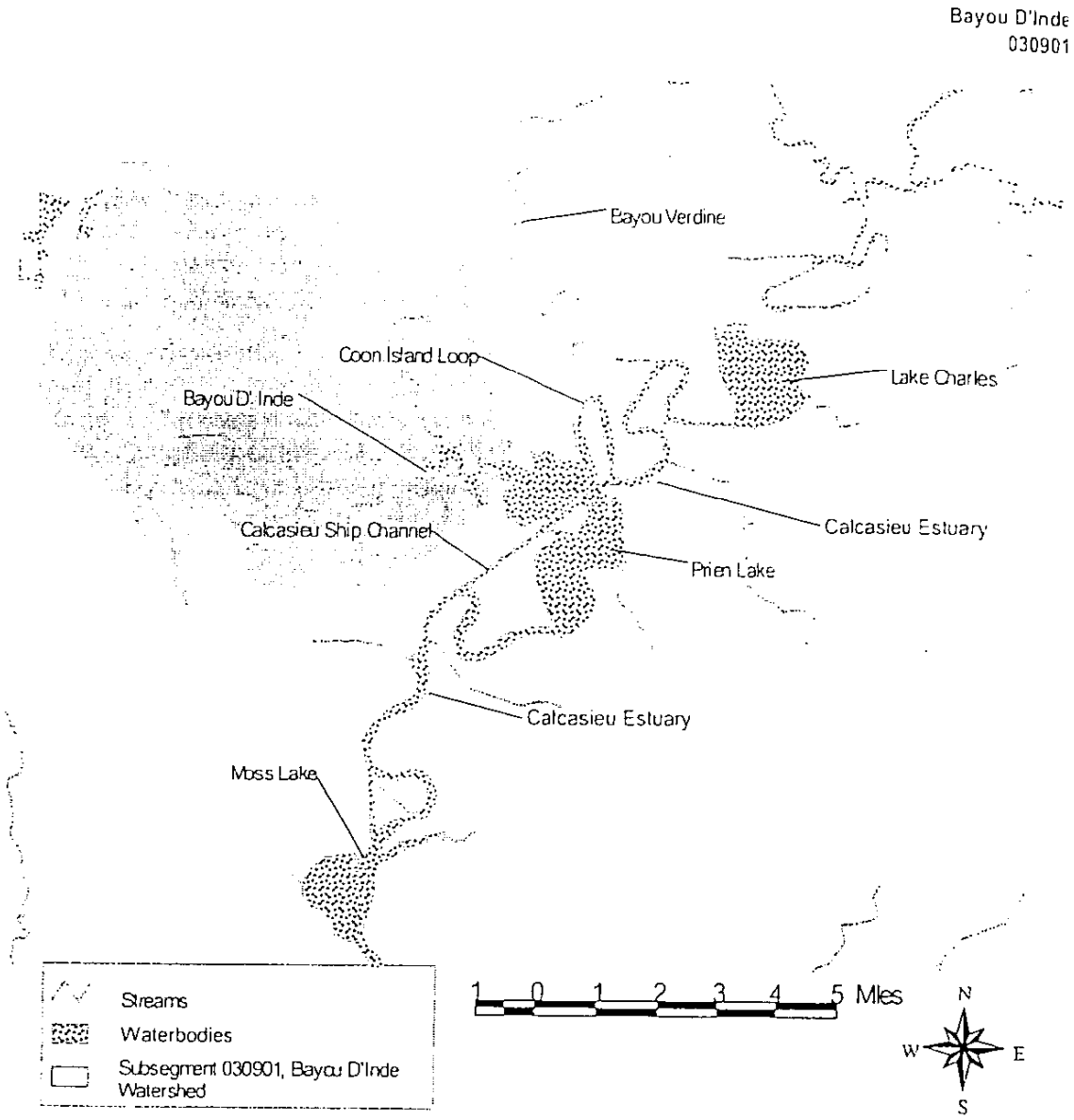

Figure 3. Location of Subsegment 030901, Bayou D'Inde

Using the procedures described in the Methodology section, there are seven pollutants and four pollutant groups of concern for Bayou D'Inde (Table 7). Five are identified on EPA's court-ordered 303(d) List (Table 1), and two of these pollutants are the subject of a fish consumption and swimming advisory in the bayou. An additional pollutant that is the subject of a fish advisory is not identified on the 303(d) List. One additional pollutants are pollutants of concern because of sediment quality guideline exceedances.

Table 7. Pollutants of Concern for Bayou D'Inde

Pollutant	Medium	Basis for Selection
Priority Organics	Water	On 303(d) List
Nonpriority Organics	Water	On 303(d) List
Hexachlorobutadiene	Fish tissue	On 303(d) List, Fish Advisory
PCBs	Fish tissue	On 303(d) List, Fish Advisory
Tetrachloroethane	Water	On 303(d) List
Bromoform	Water	On 303(d) List
Copper	Water	On 303(d) List, Water quality dissolved criterion exceedances
Other Inorganics	Water	On 303(d) List
Contaminated sediments	Sediment	On 303(d) List
Hexachlorobenzene	Water	Fish Advisory
Mercury	Water & Sediment	ERM exceedances

TMDLs for these pollutants are developed in the following subsections. The subsections are organized by the basis for selection as pollutants of concern.

303(D) LIST

Priority Organics

Hexachlorobutadiene, PCBs, tetrachloroethane, and bromoform are priority organic pollutants specifically identified on EPA's 303(d) List, and TMDLs for these pollutants are developed below. Using the procedures described in the Methodology section, pollutants of concern within general categories are determined using concentration data. No other priority organic pollutants exceed water quality criteria (Appendix Table B-35).

MONITORING AND FOLLOW UP. Consistent with EPA Region 6's Policy for Third Round NPDES Permitting (EPA 1992a) and Post Third Round Permit Implementation Strategy (EPA 1992b) or the most recent revisions thereof, all major and significant minor dischargers to Bayou D'Inde should test effluents for chronic toxicity at least quarterly to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing instream toxicity.

Bayou D'Inde should be monitored for priority organic compounds quarterly for one year. Samples should be taken in the bayou at four stations: above Firestone Polymers, at the mouth, and at two stations equidistant between these stations.

Should any other priority organic pollutants exceed applicable criteria, then TMDLs should be developed for those pollutants.

Nonpriority Organics

Sediment data indicate that no nonpriority organic chemicals exceed applicable sediment quality guidelines in more than 10% of samples in Bayou D'Inde (Appendix Tables B-39, B-40, and B-41), and recent data (Appendix Table B-40) show fewer exceedances than older data (Appendix Table B-41). Therefore, there is no evidence that continuing discharges of nonpriority organics

are contributing to impairment in this subsegment, and the subsegment should be delisted for nonpriority organics. Any possible future contribution of nonpriority organics to this subsegment would be prevented by controlling the effluent toxicity of major and significant minor dischargers to Bayou D'Inde.

Hexachlorobutadiene

Hexachlorobutadiene is a pollutant of concern because it is listed on EPA's court-ordered 303(d) List and is identified in a fish consumption and swimming advisory for Bayou D'Inde. Hexachlorobutadiene is not detected in Bayou D'Inde water, but the minimum detection level for the 6 water samples is 9 µg/L, well above Louisiana's human health criterion for hexachlorobutadiene of 0.11 µg/L (Appendix Table A-1). Hexachlorobutadiene has no ESG or ERM, so available sediment data are not analyzed for this document. The most recent fish tissue data for Bayou D'Inde appear in Appendix Table D-4.

POINT SOURCES. Four of the facilities that discharge to Bayou D'Inde and are reasonably expected to discharge hexachlorobutadiene (Appendix Table E-5) have permit limits for the pollutant (Appendix Table E-6). Of these facilities, only PPG Industries has detected hexachlorobutadiene in effluents (Appendix Table E-7, Table 8). Stormwater is a possible source of hexachlorobutadiene, but there are no data for the pollutant at any stormwater outfall.

Table 8. Existing and Permitted Loads of Hexachlorobutadiene, Bayou D'Inde

Facility	NPDES Number	Mean Load (pounds/day)	Maximum Load (pounds/day)	Average Permitted Load (pounds/day)	Maximum Permitted Load (pounds/day)
PPG Industries, Inc.	LA0000761	0.0339	0.475	0.0675	0.203
Certainteed Corporation	LA0041025	ND	ND	0.600	1.610
Equistar Chemical	LA0069850	ND	ND	0.017	0.042
Westlake Polymers-Lake Charles	LA0071382	ND	ND	0.010	0.023
Total		0.0339	0.475	0.6945	1.878

ND = no data or not detected and reported as zero

NONPOINT SOURCES. Although hexachlorobutadiene has the potential to enter the bayou as an industrial nonpoint source load, there are no data on urban nonpoint source loads of the pollutant or data that allow estimation of an urban nonpoint source load.

ATMOSPHERIC DEPOSITION. TRIS data indicate an average daily air release of 1.72 pounds of hexachlorobutadiene in the four parishes surrounding the Calcasieu Estuary (Appendix Table F-5). This release is probably widely dispersed, and a very small portion of the release is likely deposited in Bayou D'Inde.

TMDL. Using the procedures described in the Methodology section, the assimilative capacity of Bayou D'Inde (less a 20% margin of error) is 0.166 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 9. PPG Industries and Westlake Polymers-Lake Charles have a calculated wasteload allocation that is higher than their existing permit limits, so the existing limits would apply. Certainteed Corporation and Equistar

Chemical both have wasteload allocations that are more stringent than their existing permit limits.

Table 9. TMDL for Hexachlorobutadiene, Bayou D'Inde

Facility	Wasteload Allocation (pounds per day)	Load Allocation (pounds per day)	Margin of Safety (pounds per day)	TMDL (pounds per day)
PPG Industries, Inc.	0.13200	-	-	-
Certainteed Corporation	0.00851	-	-	-
Equistar Chemical	0.01240	-	-	-
West Lake Polymers-Lake Charles	0.01300	-	-	-
Total	0.16591	0.00009	0.04150	0.20750

Note: The wasteload allocation is an average monthly allocation

MONITORING. Each facility should monitor process effluents at least quarterly, using the most sensitive approved analytical methods, to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls for detectable levels of hexachlorobutadiene at least quarterly.

Fish tissues should continue to be monitored for hexachlorobutadiene on at least a biennial basis to ensure hexachlorobutadiene concentrations remain low as a result of this TMDL.

PCBs

PCBs are pollutants of concern because they are identified on the 303(d) List and are the subject of a fish consumption and swimming advisory in Bayou D'Inde. Concentrations of Aroclor 1254 are higher in red drum from Bayou D'Inde than in other parts of the estuary (Tables D-7 and D-8). High concentrations of PCBs in fish tissue appear sporadically throughout the estuary. PCBs are detected once in the water column (out of 27 samples), but the detection level used is considerably higher than Louisiana's human health criterion for PCBs of 0.00001 µg/L. It is expected that average PCB concentrations in the water would exceed the criterion, although it is not possible to measure PCBs at such low concentrations with conventional methods. PCBs are not detected in sediments in 21 samples (Appendix Table B-41).

POINT SOURCES. Four facilities that discharge to Bayou D'Inde are reasonably expected to discharge PCBs (Appendix Table E-5), but none have permit limits for the pollutant (Appendix Table E-6). Stormwater is a possible source of PCBs, but there are no data for the pollutant at any process or stormwater outfall.

NONPOINT SOURCES. There is a possibility that PCBs are discharged in stormwater or other urban nonpoint source runoff as a result of previous spills or accidents involving PCBs.

ATMOSPHERIC DEPOSITION. TRIS does not contain any data that PCBs have been released to air in the vicinity of Bayou D'Inde (Appendix Table F-5). Unreported releases may have occurred as the result of accidents. The atmosphere is not a likely source of PCBs to the bayou.

TMDL. Using the procedures described in the Methodology section, the assimilative capacity load for Bayou D'Inde (less a 20% margin of error) is 0.0000156 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 10

Table 10. TMDL for PCBs, Bayou D'Inde

Facility	Wasteload Allocation (pounds per day)	Load Allocation (pounds per day)	Margin of Safety (pounds per day)	TMDL (pounds per day)
PPG Industries, Inc.	0.000012400	-	-	-
Certainteed Corporation	0.000000799	-	-	-
Equistar Chemical	0.000001170	-	-	-
West Lake Polymers-Lake Charles	0.000001220	-	-	-
Total	0.000015589	0.000000017	0.000003880	0.000019486

Note: The wasteload allocation is an average monthly allocation

MONITORING AND FOLLOW UP. All dischargers should monitor process effluents, using the most sensitive approved methods, at least quarterly to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls for detectable levels of PCBs at least quarterly.

Fish tissues should continue to be monitored for PCBs on at least a biennial basis to ensure PCB concentrations decline as a result of this TMDL.

Fish tissue data appear to be the most reliable method of determining potential sources of PCBs. Water and sediment concentrations of PCBs are sufficiently low that conventional analytical methods cannot detect them. Fish data, however, suggest that there is either contaminated sediment or contaminated runoff in lower Bayou D'Inde. A spatially intense monitoring program for PCB concentrations in fish in lower Bayou D'Inde should be undertaken in an effort to isolate sources. Once sources are identified, appropriate actions (e.g., remediation, nonpoint source controls, revised wasteload allocations) should be taken to reduce the sources to acceptable levels.

Tetrachloroethane

Tetrachloroethane is a pollutant of concern because it is on EPA's 303(d) List (Table 1). 1,1,2,2-tetrachloroethane is not detected in water (Appendix Table B-35) although the minimum detection level is greater than Louisiana's human health criterion of 1.8 µg/L (the detection limit is sufficiently low, however, to determine exceedances of the acute and chronic aquatic life criteria). Similarly, tetrachloroethane is not detected in sediments (Appendix Table B-39).

POINT SOURCES. None of the four facilities that are reasonably expected to discharge tetrachloroethane to Bayou D'Inde (Appendix Table E-5) are permitted to discharge the pollutant (Appendix Table E-6), and there are no discharge data for any outfall in the waterbody (Appendix Table E-7).

NONPOINT SOURCES. Although tetrachloroethane has the potential to enter the bayou as an industrial nonpoint source load, there are no data on urban nonpoint source loads of the pollutant and no data that allow calculation of an urban nonpoint source load.

ATMOSPHERIC DEPOSITION. TRIS data indicate an average daily air release of 12.6 pounds of tetrachloroethane in the four parishes surrounding the Calcasieu Estuary (Appendix Table F-5). This release is probably widely dispersed, and a very small portion of the release is likely deposited in Bayou D'Inde.

TMDL. Using the procedures described in the Methodology section, the assimilative capacity of Bayou D'Inde (less a 20% margin of error) is 2.81 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 11.

Table 11. TMDL for Tetrachloroethane, Bayou D'Inde

Facility	Wasteload Allocation (pounds per day)	Load Allocation (pounds per day)	Margin of Safety (pounds per day)	TMDL (pounds per day)
PPG Industries, Inc.	2.230	-	-	-
Certainteed Corporation	0.144	-	-	-
Equistar Chemical	0.210			
West Lake Polymers-Lake Charles	0.220			
Total	2.804	0.006	0.703	3.513

Note: The wasteload allocation is an average monthly allocation

MONITORING. Each facility should monitor process effluents at least quarterly, using the most sensitive approved analytical methods, to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls for detectable levels of tetrachloroethane at least quarterly.

Tetrachloroethane should be monitored in Bayou D'Inde water at least quarterly for one year, and quarterly at five-year intervals thereafter, to ensure detectable levels of tetrachloroethane are not occurring. Samples should be taken in the bayou at four stations: one station above the Firestone Polymers discharge, one station at the mouth, and at two stations equidistant between these stations.

Bromoform

Bromoform is a pollutant of concern because it is on EPA's court-ordered 303(d) List (Table 1). Bromoform is detected in water (Appendix Table B-35), but concentrations do not exceed Louisiana's human health water quality criterion of 34.7 μg/L. Bromoform is not detected in sediments (Appendix Table B-39).

POINT SOURCES. One facility of the four that are reasonably expected to discharge bromoform to the bayou is permitted to discharge bromoform (Appendix Table E-5, Table 12).

Table 12. Existing and Permitted Loads of Bromoform, Bayou D'Inde

Facility	NPDES Number	Mean Load (pounds/day)	Maximum Load (pounds/day)	Average Permitted Load (pounds/day)	Maximum Permitted Load (pounds/day)
PPG Industries, Inc.	LA0000761	10	32	41	81
Certainteed Corporation	LA0041025	-	-	-	-
Equistar Chemical	LA0069850	-	-	-	-
West Lake Polymers-Lake Charles	LA0071382	-	-	-	
Total		10	32	41	81

NONPOINT SOURCES. Although bromoform has the potential to enter the bayou as a nonpoint source load from industrial sources, there are no data on urban nonpoint source loads of the pollutant or data that allow estimation of an urban nonpoint source load.

ATMOSPHERIC DEPOSITION. TRIS data indicate bromoform has not been released to air in the four parishes surrounding the Calcasieu Estuary (Appendix Table F-5).

TMDL. Using the procedures described in the Methodology section, the assimilative capacity of Bayou D'Inde (less a 20% margin of error) is 54.1 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 13. PPG Industries' existing limit is more stringent than the wasteload allocation, so the existing limit still applies.

Table 13. TMDL for Bromoform, Bayou D'Inde

Facility	Wasteload Allocation (pounds per day)	Load Allocation (pounds per day)	Margin of Safety (pounds per day)	TMDL (pounds per day)
PPG Industries, Inc.	43.00	-	-	-
Certainteed Corporation	2.77	-	-	-
Equistar Chemical	4.05			
West Lake Polymers-Lake Charles	4.24			
Total	54.06	0.04	13.53	67.63

Note: The wasteload allocation is an average monthly allocation

MONITORING. Each facility should monitor process effluents at least quarterly, using the most sensitive approved analytical methods, to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls for detectable levels of tetrachloroethane at least quarterly.

Bromoform in water should be monitored at least quarterly over one year and quarterly over one year at five year increments thereafter. Samples should be taken in the lower bayou at four stations: above the Firestone discharge, at the mouth, and at two stations equidistant between these stations. The purpose of the monitoring is to ensure that Louisiana's human health criterion for bromoform is being attained as a result of this TMDL.

Copper

Copper is a pollutant of concern because it is identified on EPA's 303(d) List and water concentrations exceed Louisiana's acute dissolved copper aquatic life criterion 26 times in 36 samples (Appendix Table B-35). Sediment concentrations of copper exceed the copper ERM in 24 out of 292 samples (Appendix Tables B-40 and B-41), less than 10% of all samples. See Appendix Figure C-4 for the location of all copper exceedances.

POINT SOURCES. Only one of the eleven facilities that are reasonably expected to discharge copper to the bayou are permitted to discharge copper (Appendix Table E-17, Table 14).

Table 14. Existing and Permitted Loads of Copper, Bayou D'Inde

Facility	NPDES Number	Mean Load (pounds/day)	Maximum Load (pounds/day)	Average Permitted Load (pounds/day)	Maximum Permitted Load (pounds/day)
PPG Industries, Inc.	LA0000761	5.8	100.7	28	73.2
Firestone Polymers	LA0003824	-	-	-	-
Citgo Petroleum Corporation	LA0005941	-	-	-	-
Certainteed Corporation	LA0041025	-	-	-	-
Air Liquide	LA0053708	-	-	-	-
Equistar Chemical	LA0069850	-	-	-	-
West Lake Polymers-Lake Charles	LA0071382	-	-	-	-
Praxair Inc.	LA0100099	-	-	-	-
Cetco	LA0101869	-	-	-	-
W-H Holdings Inc.	LA0105155	-	-	-	-
Denmar Enterprises	LA0108596	-	-	-	-
Total		5.8	100.7	28	73.2

NONPOINT SOURCES. The low-flow urban nonpoint source load for copper is estimated to be 0.00637 pounds per day (Appendix Table F-1).

ATMOSPHERIC DEPOSITION. TRIS data indicate an average daily air release of 0.00137 pounds of copper and 1.39 pounds of copper compounds in the four parishes surrounding the Calcasieu Estuary (Appendix Table F-5). The behavior of copper in the atmosphere depends on the form in which it was released, and this is not known. It is likely, however, that atmospheric copper would not contribute an appreciable load to Bayou D'Inde.

TMDL. Using the procedures described in the Methodology section, the assimilative capacity of Bayou D'Inde (less a 20% margin of error) is 1.89 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 15. PPG Industries' existing limit is less stringent than the wasteload allocation, so the wasteload allocation applies.

Table 15. TMDL for Copper, Bayou D'Inde

Facility	Wasteload Allocation (pounds/day)	Load Allocation (pounds/day)	Margin of Safety (pounds/day)	TMDL (pounds/day)
PPG Industries, Inc.	0.7300000			
Firestone Polymers	0.0968000			
Citgo Petroleum Corporation	0.1530000			
Certainteed Corporation	0.0800000			
Air Liquide	0.0022900			
Equistar Chemical	0.1090000			
West Lake Polymers-Lake Charles	0.1100000			
Praxair Inc.	0.0037300			
Celco	0.0000396			
W-H Holdings Inc.	0.0001910			
Denmar Enterprises	0.0000305			
Total	1.285081	0.604919	0.472500	2.362500

Note: The wasteload allocation is a maximum daily allocation

MONITORING. Each facility should monitor process effluents for copper at least quarterly, using clean techniques, to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls, using clean techniques, for detectable levels of copper at least quarterly.

Copper concentrations in Bayou D'Inde should be monitored using clean techniques monthly for one year and monthly for one year at a five year interval thereafter. Sediment concentrations of copper should be monitored once in each year water samples are taken. Samples should be taken at four stations: above Firestone Polymers, at the mouth, and at two stations equidistant between these stations. The purpose of the monitoring is to determine whether this TMDL is resulting in compliance with water quality criteria and protecting sediments.

Other Inorganics

Other inorganics are on EPA's 303(d) List. Based on Louisiana Water Quality Network Data and EPA Superfund data, there are no other inorganic toxic pollutants with concentrations outside the normal range of concentrations for estuarine waters. Similarly, no facility discharges other inorganic toxic pollutants in concentrations expected to cause concentrations in receiving water in concentrations outside the normal range of concentrations for estuarine waters. Other inorganics would also be protected by whole effluent toxicity testing for major and significant minor discharges to this subsegment. Therefore, other inorganics should be delisted for Bayou D'Inde.

Contaminated Sediments

Sediment concentrations of one metal, mercury, exceed sediment quality guidelines in more than 10% of samples. Mercury may contribute to observed sediment toxicity in Bayou D'Inde. Mercury is addressed below under Water Quality Criteria.

A number of PAHs exceed ERMs in this subsegment, but all exceed these guidelines in less than 10% of samples, and the more recent Superfund data indicate fewer exceedances (Appendix Table B-40) than the older NOAA data (Appendix Table B-41). No other organic compounds exceed ERMs in more than 10% of samples. So no sediment organic contaminants of concern are identified for Bayou D'Inde.

MONITORING AND FOLLOW UP. The contaminated sediment TMDL calculated below assume that the pollutant identified as a pollutant of concern is responsible for observed sediment toxicity. The identified pollutant, however, may not be the only sources of sediment toxicity. To ensure that the TMDLs for Bayou D'Inde protect sediments, Louisiana should monitor sediment toxicity (using methodologies specified in EPA (1995) at least once every five years at four stations: one above all dischargers, one near the mouth of the bayou, and two equidistant between the upstream and downstream stations.

Should sediment toxicity remain after the TMDLs have been implemented, a toxicity identification evaluation (TIE) should be done to determine the pollutant or pollutants responsible for sediment toxicity. Once pollutants have been identified, appropriate point source or nonpoint source controls should be implemented to reduce sediment toxicity.

FISH ADVISORY

Hexachlorobenzene

Hexachlorobenzene is a pollutant of concern because it is listed on EPA's court-ordered 303(d) List (Table 1) and is listed for a fish consumption and swimming advisory for Bayou D'Inde. Hexachlorobenzene has no ESG or ERM, so available sediment data are not analyzed for this document. The most recent fish tissue data (Appendix Tables D-1 and D-2) indicate the pollutant has the highest concentrations in blue crab and white shrimp taken from Bayou D'Inde, but concentrations are at or near acceptable levels.

POINT SOURCES. Four of the facilities that discharge to Bayou D'Inde and are reasonably expected to discharge hexachlorobutadiene (Appendix Table E-5) have permit limits for the pollutant (Appendix Table E-6). Of these facilities, only PPG Industries has detected hexachlorobutadiene in effluents (Appendix Table E-7, Table 16). Stormwater is a possible source of hexachlorobutadiene, but there are no data for the pollutant at any stormwater outfall.

Table 16. Existing and Permitted Loads of Hexachlorobenzene, Bayou D'Inde

Facility	NPDES Number	Mean Load (pounds/day)	Maximum Load (pounds/day)	Average Permitted Load (pounds/day)	Maximum Permitted Load (pounds/day)
PPG Industries, Inc.	LA0000761	0.001232	0.044	0.0001	0.00034
Certainteed Corporation	LA0041025	ND	ND	0.6	1.61
Equistar Chemical	LA0069850	ND	ND	0.0001	0.0003
Westlake Polymers-Lake Charles	LA0071382	ND	ND	0.00007	0.00016
Total		0.001232	0.044	0.60027	1.6108

NONPOINT SOURCES. Although hexachlorobenzene has the potential to enter the bayou as an industrial nonpoint source load, there are no data on urban nonpoint source loads of the pollutant or data that allow calculation of an urban nonpoint source load.

ATMOSPHERIC DEPOSITION. TRIS data indicate an average daily air release of 0.13 pounds of hexachlorobenzene in the four parishes surrounding the Calcasieu Estuary (Appendix Table F-5). This release is probably widely dispersed, and a very small portion of the release is likely deposited in Bayou D'Inde.

TMDL. Using the procedures described in the Methodology section, the assimilative capacity of Bayou D'Inde (less a 20% margin of error) is 0.00039 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 17. All facilities have permit limits that are less stringent than the wasteload allocation, so the wasteload allocations apply.

Table 17. TMDL for Hexachlorobenzene, Bayou D'Inde

Facility	Wasteload Allocation (pounds per day)	Load Allocation (pounds per day)	Margin of Safety (pounds per day)	TMDL (pounds per day)
PPG Industries, Inc.	0.000310			
Certainteed Corporation	0.0000200			
Equistar Chemical	0.0000291			
West Lake Polymers-Lake Charles	0.0000305			
Total	0.000390	0.000001	0.000097	0.000488

Note: The wasteload allocation is an average monthly allocation

MONITORING. Each facility should monitor process effluents at least quarterly, using the most sensitive approved analytical methods, to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls for detectable levels of hexachlorobenzene at least quarterly.

Fish tissues should continue to be monitored for hexachlorobenzene on at least a biennial basis to ensure hexachlorobenzene concentrations decline as a result of this TMDL.

SEDIMENT QUALITY

Mercury

Mercury is a pollutant of concern because sediment metals are on the court-ordered 303(d) List and 63 of 139 sediment concentrations (45%) exceed the mercury ERM (Appendix Table B-40). 2 of 12 samples for dissolved mercury also exceed Louisiana's chronic aquatic life criterion (Appendix Table B-35). See Appendix Figure C-3 for the location of all mercury exceedances. Fish tissue mercury concentrations are generally higher in Bayou D'Inde for all species than in the Calcasieu Estuary and Ship Channel (Appendix Tables D-10 and D-11).

SAIC (2001) conducted a Toxicity Identification Evaluation for Bayou D'Inde sediments. In the study, sediment toxicity was evaluated after various treatments that removed or inactivated certain classes of pollutant compounds to determine what compounds are responsible for observed toxicity. Both samples taken from Bayou D'Inde had initial toxicity reduced by filtration, suggesting that toxicity is associated with pollutants attached to particles. The middle bayou sample had a greater reduction than the lower bayou sample. Both samples also had reduced toxicity with thiosulfate addition, suggesting that metals such as mercury, copper, cadmium, and silver might be responsible for toxicity. Organics removal had a small effect on the toxicity of both samples. These results are consistent with a sediment that is contaminated with a metal such as mercury, but other pollutants that cause toxicity cannot be ruled out.

POINT SOURCES. Only one of the eleven facilities that are reasonably expected to discharge mercury to the bayou (Appendix Table E-5) is permitted to discharge mercury (Table 30, Appendix Table E-6). All of the other facilities are expected to discharge mercury at low levels. PPG Industries is the only facility with mercury load data (Appendix Table E-7, Table 18).

Table 18. Existing and Permitted Loads of Mercury, Bayou D'Inde

Facility	NPDES Number	Mean Load (pounds/day)	Maximum Load (pounds/day)	Average Permitted Load (pounds/day)	Maximum Permitted Load (pounds/day)
PPG Industries, Inc.	LA0000761	0.0219	0.56	0.13	0.30
Firestone Polymers	LA0003824	-	-	-	-
Citgo Petroleum Corporation	LA0005941	-	-	-	-
Certainteed Corporation	LA0041025	-	-	-	-
Air Liquide	LA0053708	-	-	-	-
Equistar Chemical	LA0069850	-	-	-	-
West Lake Polymers-Lake Charles	LA0071382	-	-	-	-
Praxair Inc.	LA0100099	-	-	-	-
Cetco	LA0101869	-	-	-	-
W-H Holdings Inc.	LA0105155	-	-	-	-
Denmar Enterprises	LA0108596	-	-	-	-
Total		0.0219	0.56	0.13	0.30

NONPOINT SOURCES. Although mercury has the potential to enter the bayou as a nonpoint source load, there are no data on urban nonpoint source loads of the pollutant or data that allow calculation of an urban nonpoint source load.

ATMOSPHERIC DEPOSITION. TRIS data indicate an average daily air release of 0.0151 pounds of mercury in the four parishes surrounding the Calcasieu Estuary (Appendix Table F-5). This load is based on an annual release from PPG Industries in 1996.

Based on atmospheric deposition monitoring data at Lake Charles and the surface area of the bayou, the daily load of mercury from the atmosphere is 0.0000174 pounds of mercury per day (Appendix Table F-4).

TMDL. Using the procedures described in the Methodology section, the assimilative capacity of Bayou D'Inde (less a 20% margin of error) is 0.013 pounds per day (Table E-11). Wasteload allocations for each facility appear in Appendix Table E-14 and Table 19.

Table 19. TMDL for Mercury, Bayou D'Inde

Facility	Wasteload Allocation (pounds/day)	Load Allocation (pounds/day)	Margin of Safety (pounds/day)	TMDL (pounds/day)
PPG Industries, Inc.	0.00854			
Firestone Polymers	0.000665			
Citgo Petroleum Corporation	0.00157			
Certainteed Corporation	0.00055			
Air Liquide	0.0000157			
Equistar Chemical	0.000804			
West Lake Polymers-Lake Charles	0.000841			
Praxair Inc.	0.0000257			
Cetco	0.000000272			
W-H Holdings Inc.	0.00000131			
Denmar Enterprises	0.00000021			
Total	0.0130	0.0000168	0.00322	0.0163

Note: The wasteload allocation is a maximum daily allocation.

MONITORING. Each facility should monitor dissolved and total mercury in process effluents at least quarterly, using clean techniques, to demonstrate compliance with these wasteload allocations. Each facility should monitor stormwater outfalls for detectable levels of mercury at least quarterly.

Total and dissolved mercury concentrations should be monitored in Bayou D'Inde, using clean techniques, monthly for one year and monthly for one year at a five year interval thereafter. Sediment concentrations of mercury should be monitored once in each year water samples are taken. Samples should be taken at four stations: above Firestone Polymers, at the mouth, and at two stations equidistant between these stations. The purpose of the monitoring is to determine whether this TMDL is allowing water quality criteria to be achieved and is protecting sediments.

Appendix E

Table E-1. Significant Facilities Discharging to Calcasieu Estuary and SIC

NPDES	Facility	SIC	Description
LA0000761	PPG Industries, Inc.	2869	Industrial Organic Chemicals
LA0001333	WR Grace & Co	2819	Industrial Inorganic Chemicals
LA0003026	Conoco Lake Charles Refinery	2911	Petroleum Refining
LA0003336	Sasol North America Inc.	2869	Industrial Organic Chemicals
LA0003689	Basell USA Inc Lake Charles Plant	2821	Plastic Materials and Resins
LA0003735	Reynolds Metals	2999	Petroleum and Coal Products
LA0003824	Firestone Polymers	2822	Synthetic Rubber
LA0003956	Holnam Inc., FKA Ideal Cement	5032	Brick, Stone, and Related Construction Materials
LA0005347	Lyondell Chemical World Wide Inc	2869	Industrial Organic Chemicals
LA0005941	Citgo Petroleum Corporation	2911	Petroleum Refining
LA0036340	City of Lake Charles WWTP	4952	Sewerage Systems
LA0036366	City of Lake Charles WWTP "B" & "C"	4952	Sewerage Systems
LA0039136	Cameron Parish Sewerage District	4952	Sewerage Systems
LA0041025	Certainteed Corporation	2821	Plastic Materials and Resins
LA0047058	Tessenderlo Kerley Inc.	2813	Industrial Gases
LA0051730	Air Liquide	2813	Industrial Gases
LA0052370	Calcasieu Refining Company	2911	Petroleum Refining
LA0053708	Air Liquide	2813	Industrial Gases
LA0055522	Trunkline LNG	4491	Marine Cargo Handling
LA0067083	City of Sulphur WWTP	4952	Sewerage Systems
LA0069850	Equistar Chemical	2869	Industrial Organic Chemicals
LA0071382	West Lake Polymers-Lake Charles	2821	Plastic Materials and Resins
LA0080829	Louisiana Pigment Company L.P	2819	Industrial Inorganic Chemicals
LA0082511	Westlake Petrochemicals Corporation	2869	Industrial Organic Chemicals
LA0087157	Westlake Styrene Corporation	2869	Industrial Organic Chemicals
LA0100099	Praxair Inc.	2813	Industrial Gases
LA0101869	Cetco	3443	Fabricated Plate Works (Boiler Shops)
LA0103004	Westlake Polymers Corporation	2821	Plastic Materials and Resins
LA0104850	McNeese Univ. Farm Labs	8221	Colleges, Universities, and Professional Schools
LA0105155	W-H Holdings Inc.	7359	Equipment Rental and Leasing
LA0108596	Denmar Enterprises	5082	Construction and Mining Machinery
LAG380006	City of Lake Charles Center St East WTP	9999	Water Treatment Plants
LAG380008	City of Lake Charles Center St West WTP	9999	Water Treatment Plants
LAG380009	City of Lake Charles Chennault WTP	9999	Water Treatment Plants
LAG380009	City of Lake Charles McNeese St WTP	9999	Water Treatment Plants

Table E-2. Pollutants of Concern Reasonably Expected to be Discharged by Facilities by SIC

SIC	Description	1,2-Dichloroethane	Ammonia	Bromoform	Calcium	Copper	DDT	Hexachlorobenzene	Hexachlorobutadiene	Mercury	Methoxychlor	PAHs	PCBs	Phenol	Tetrachloroethane	Zinc
2813	Industrial Gases					Yes				Yes						
2819	Industrial Inorganic Chemicals		Yes			Yes				Yes						Yes
2821	Plastic Materials and Resins	Yes	Yes	Yes		Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
2822	Synthetic Rubber		Yes			Yes				Yes		Yes		Yes		Yes
2869	Industrial Organic Chemicals	Yes	Yes	Yes		Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
2911	Petroleum Refining		Yes			Yes				Yes		Yes		Yes		Yes
2999	Petroleum and Coal Products		Yes			Yes				Yes		Yes		Yes		Yes
3443	Fabricated Plate Works (Boiler Shops)		Yes			Yes				Yes						Yes
4491	Marine Cargo Handling		Yes			Yes				Yes						Yes
4952	Sewerage Systems		Yes			Yes				Yes						
5032	Brick, Stone, and Related Materials					Yes				Yes						
5082	Construction and Mining Machinery		Yes			Yes				Yes						Yes
7359	Equipment Rental and Leasing		Yes			Yes				Yes						Yes
8221	Colleges, and Universities		Yes			Yes				Yes						
9999	Water Treatment Plants															Yes

Table E-3. Facility Flows by Outfall from PCS

Sub-segment	NPDES	Facility	Outfall	Process Outfall	Internal Outfall	Average Flow (mgd)	Maximum Flow (mgd)
030301	LA0000761	PPG Industries, Inc.	002				6.59
			003				0.54
	LA0001333	WR Grace & Co	001	Yes		2.32	4.4
			002			0.1	0.24
			101		Yes	0.0072	0.0144
	LA0003026	Conoco Lake Charles Refinery	SUM	Yes		3.86	10.8
	LA0003336	Sasol North America Inc.	001	Yes		1.78	3.91
	LA0003689	Basell USA Inc Lake Charles Plant	001	Yes		0.949	1.95
			002			1.35	8.1
	LA0003956	Holnam Inc., FKA Ideal Cement	002			0.0005	
	LA0005347	Lyondell Chemical World Wide Inc	001			0.387	3.6
			008			1.3	2.08
			010			2.81	4
			016			0.35	0.82
			019			0.658	1.78
			020			0.445	1.73
			022			0.507	1.8
			028			0.0535	0.1
			029			0.163	7.28
			032			0.0883	0.3
			SUM	Yes		3.35	13.5
	LA0005941	Citgo Petroleum Corporation	003	Yes		8.27	19.4
			004			40.7	624
			006			0.0704	2.75
			008			0.1	0.1
			009			0.0166	0.05
			010			0.285	7.7
	LA0036340	City of Lake Charles WWTP	001	Yes		4.6	19.3
	LA0052370	Calcasieu Refining Company	001	Yes		1.14	50.4
			002			0.00216	0.0281
			003			0.00116	0.352
			004			0.0026	0.0828
			104		Yes	0.00072	0.00072
	LA0067083	City of Sulphur WWTP	001	Yes		5.55	11.6
	LA0080829	Louisiana Pigment Company L.P	001	Yes		0.531	0.843
			002	Yes		0.6	1.11
			003			1.67	47.6
			004			0.911	1.74

Table E-3. Facility Flows by Outfall from PCS

Sub-segment	NPDES	Facility	Outfall	Process Outfall	Internal Outfall	Average Flow (mgd)	Maximum Flow (mgd)
030301 (cont)	LA0080829 (cont)	Louisiana Pigment Company L.P (cont)	005			0.0153	1.72
			101		Yes	0.468	0.759
			201		Yes	0.00597	0.0528
	LA0082511	Westlake Petrochemicals Corporation	001	Yes		0.944	1.55
			002			5.51	20.7
			003			0.147	1.17
			004			0.102	0.384
			101		Yes	0.00525	0.03
			201		Yes	0.468	0.89
			301		Yes	0.475	0.84
	LA0087157	Westlake Styrene Corporation	001	Yes		0.166	0.3
			101		Yes	0.0547	0.09
			102		Yes	0.129	0.22
			103		Yes	0.004	
	LA0103004	Westlake Polymers Corporation	001	Yes		0.135	0.929
			002			0.0025	0.0025
030305	LA0036366	City of Lake Charles WWTP "B" & "C"	001	Yes		3.32	12.9
	LAG380008	City of Lake Charles Center St West WTP	001	Yes		0.05	
030306	LA0000761	PPG Industries, Inc.	004			29.4	46.2
	LA0005347	Lyondell Chemical World Wide Inc	025			0.368	1.37
			026			1.27	4.72
030401	LA0003735	Reynolds Metals	002			0.895	18.6
			006			0.00274	0.0064
			007			0.709	0.89
			009			0.946	7.55
			011			0.946	7.55
			012			0.946	7.55
			013			0.482	2.87
			014			0.473	3.77
			016	Yes		0.0119	0.0428
			017			0.0538	1.3
			A14	Yes		0.002	0.002
030901	LA0000761	PPG Industries, Inc.	001			178	355
			101	Yes	Yes	3.08	5.1
			201	Yes	Yes	13.1	17.3
			401	Yes	Yes	0.117	38.3
	LA0003824	Firestone Polymers	001	Yes		1.27	2.43
			003			0.844	2.56
			004			1	3.35

Table E-3. Facility Flows by Outfall from PCS

Sub-segment	NPDES	Facility	Outfall	Process Outfall	Internal Outfall	Average Flow (mgd)	Maximum Flow (mgd)
030901 (cont)	LA0005941	Citgo Petroleum Corporation	001	Yes		2.99	4.49
			002			0.11	1.44
	LA0041025	Certainteed Corporation	001	Yes		1.05	2.21
			003				0.694
	LA0069850	Equistar Chemical	001	Yes		0.95	1.418
			002	Yes		0.584	17.5
			003			0.0233	0.859
			102		Yes	0.0293	0.051
	LA0071382	West Lake Polymers-Lake Charles	004			1.17	34.2
			005			6.84	197
			006			1.2	34.2
			007	Yes		0.67536	
			010	Yes		0.929	1.79
			011			2.13	55.8

Table E-4. Facility Flows by Outfall from Permit Fact Sheets

Sub-segment	NPDES	Facility	Outfall	Process Outfall	Internal Outfall	Average Flow (mgd)
30301	LA0003956	Holnam Inc., FKA Ideal Cement	002			0.0005
30305	LAG380008	City of Lake Charles Center St West WTP	001	Yes		0.05
30401	LA0039136	Cameron Parish Sewerage District	001	Yes		0.405
	LA0055522	Trunkline LNG	001	Yes		0.072
			002			0.008
			003			0.467
			102		Yes	0.0115
			202		Yes	0.008113
30901	LA0047058	Tessenderlo Kerley Inc	001			0.03
	LA0051730	Air Liquide	001			0.04
			101		Yes	0.0002
	LA0053708	Air Liquide	001	Yes		0.03
			201		Yes	0.001
			301		Yes	0.00025
			401		Yes	0.01
	LA0100099	Praxair Inc.	001	Yes		0.04896
			002			0.000135
			003			0.0071
	LA0101869	Cetco	001	Yes		0.00052
			101		Yes	0.0002
	LA0105155	W-H Holdings Inc.	001	Yes		0.0025
			002			0.00005
	LA0108596	Denmar Enterprises	001			0.0002
			002	Yes		0.0004

Table E-5. Facility Process Flows by Subsegment

Sub-segment	NPDES	Facility	Process Flow (mgd)
030301	LA0001333	WR Grace & Co	2.32
	LA0003026	Conoco Lake Charles Refinery	3.86
	LA0003336	Sasol North America Inc.	1.78
	LA0003689	Basell USA Inc Lake Charles Plant	0.949
	LA0003956	Holnam Inc., FKA Ideal Cement	
	LA0005347	Lyondell Chemical World Wide Inc	3.35
	LA0005941	Citgo Petroleum Corporation	8.27
	LA0036340	City of Lake Charles WWTP	4.6
	LA0052370	Calcasieu Refining Company	1.14
	LA0067083	City of Sulphur WWTP	5.55
	LA0080829	Louisiana Pigment Company L.P	1.131
	LA0082511	Westlake Petrochemicals Corporation	0.944
	LA0087157	Westlake Styrene Corporation	0.166
	LA0103004	Westlake Polymers Corporation	0.135
030305	LA0036366	City of Lake Charles WWTP "B" & "C"	3.32
	LA0104850	McNeese Univ. Farm Labs	
	LAG380006	City of Lake Charles Center St East WTP	
	LAG380008	City of Lake Charles Center St West WTP	0.05
	LAG380009	City of Lake Charles Chennault WTP	
	LAG380009	City of Lake Charles McNeese St WTP	
030401	LA0003735	Reynolds Metals	0.0139
	LA0039136	Cameron Parish Sewerage District	0.405
	LA0055522	Trunkline LNG	0.072
030901	LA0000761	PPG Industries, Inc.	16.297
	LA0003824	Firestone Polymers	1.27
	LA0005941	Citgo Petroleum Corporation	2.99
	LA0041025	Certainteed Corporation	1.05
	LA0051730	Air Liquide	
	LA0053708	Air Liquide	0.03
	LA0069850	Equistar Chemical	1.534
	LA0071382	West Lake Polymers-Lake Charles	1.60436
	LA0100099	Praxair Inc.	0.04896
	LA0101869	Cetco	0.00052
	LA0105155	W-H Holdings Inc.	0.0025
	LA0108596	Denmar Enterprises	0.0004

Table E-5. Pollutants of Concern by Facility and Subsegment

Sub-segment	NPDES	Facility	Pollutant
030301	LA0001333	WR Grace & Co	Ammonia Copper Mercury
	LA0003026	Conoco Lake Charles Refinery	Ammonia Copper Mercury PAHs
	LA0003336	Sasol North America Inc.	Ammonia Copper Mercury PAHs
	LA0003689	Basell USA Inc Lake Charles Plant	Ammonia Copper Mercury PAHs
	LA0005347	Lyondell Chemical World Wide Inc	Ammonia Copper Mercury PAHs
	LA0005941	Citgo Petroleum Corporation	Ammonia Copper Mercury PAHs
	LA0036340	City of Lake Charles WWTP	Ammonia Copper Mercury
	LA0052370	Calcasieu Refining Company	Ammonia Copper Mercury PAHs
	LA0067083	City of Sulphur WWTP	Ammonia Copper Mercury
	LA0080829	Louisiana Pigment Company L.P	Ammonia Copper Mercury
	LA0082511	Westlake Petrochemicals Corporation	Ammonia Copper Mercury PAHs

Table E-5. Pollutants of Concern by Facility and Subsegment

Sub-segment	NPDES	Facility	Pollutant
030301 (cont)	LA0087157	Westlake Styrene Corporation	Ammonia Copper Mercury PAHs
	LA0103004	Westlake Polymers Corporation	Ammonia Copper Mercury PAHs
030901	LA0000761	PPG Industries, Inc.	Bromoform Copper Hexachlorobenzene Hexachlorobutadiene Mercury PCBs Tetrachloroethane
	LA0003824	Firestone Polymers	Copper Mercury
	LA0005941	Citgo Petroleum Corporation	Copper Mercury
	LA0041025	Certainteed Corporation	Bromoform Copper Hexachlorobenzene Hexachlorobutadiene Mercury PCBs Tetrachloroethane
	LA0053708	Air Liquide	Copper Mercury
	LA0069850	Equistar Chemical	Bromoform Copper Hexachlorobenzene Hexachlorobutadiene Mercury PCBs Tetrachloroethane
	LA0071382	West Lake Polymers-Lake Charles	Bromoform Copper Hexachlorobenzene Hexachlorobutadiene Mercury

Table E-5. Pollutants of Concern by Facility and Subsegment

Sub-segment	NPDES	Facility	Pollutant
030901 (cont)	LA0071382 (cont)	West Lake Polymers-Lake Charles	PCBs Tetrachloroethane
	LA0100099	Praxair Inc.	Copper Mercury
	LA0101869	Cetco	Copper Mercury
	LA0105155	W-H Holdings Inc.	Copper Mercury
	LA0108596	Denmar Enterprises	Copper Mercury

Table E-6. Facility Limits for Pollutants of Concern by Outfall and Subsegment

Sub-segment	NPDES	Facility	Outfall	Parameter	Average Concen-tration (mg/L)	Maximum Concen-tration (mg/L)	Average Load Limit (ppd)	Maximum Load Limit (ppd)
030301	LA0001333	WR Grace & Co	001	Ammonia			1850	3700
	LA0003026	Conoco Lake Charles Refinery	SUM	Ammonia			531	1062
	LA0003336	Sasol North America Inc.	001	Ammonia			41	88
			001	PAHs			0.2	0.53
	LA0003689	Basell USA Inc Lake Charles Plant	001	Ammonia			15	20
			001	PAHs			0.22	0.58
	LA0005347	Lyondell Chemical World Wide Inc	010	PAHs			0.14	0.38
			016	Ammonia		30		
			019	Ammonia		30		
			020	Ammonia		30		
			022	Ammonia		30		
			028	Ammonia			42	104
			032	Ammonia		30		
			SUM	Ammonia			1417	3325
	LA0005941	Citgo Petroleum Corporation	001	Ammonia			486	1061
			003	Ammonia			1209	2640
	LA0036340	City of Lake Charles WWTP	001	Ammonia	5	10	279	
			001	Mercury			0.016	0.038
	LA0052370	Calcasieu Refining Company	001	Ammonia			4	8
	LA0067083	City of Sulphur WWTP	001	Copper			0.73	1.73
	LA0080829	Louisiana Pigment Company L.P	001	Copper			0.342	0.812
			001	Mercury			0.0319	0.0758
			002	Copper			0.305	0.724
			004	Copper	0.035	0.071		
	LA0082511	Westlake Petrochemicals Corporation	001	PAHs			0.11	0.29
			101	PAHs			0.01	0.02
			001	PAHs			0.04	0.1
030901	LA0000761	PPG Industries, Inc.	001	Bromoform	24	48	41	81
			001	Hexachlorobenzene	0.00006	0.00026	0.0001	0.00034
			001	Hexachlorobutadiene	0.04	0.12	0.06752	0.20256
			101	Copper			9.8	23.9
			101	Mercury			0.13	0.3
			101	Nickel			7.4	19.3
			201	Copper			18.2	49.3
			201	Nickel			10.2	26.8
	LA0041025	Certainteed Corporation	001	Hexachlorobenzene			0.83	3.36
			001	Hexachlorobutadiene			0.6	1.61
	LA0069850	Equistar Chemical	001	Hexachlorobenzene			0.0001	0.0003
			001	Hexachlorobutadiene			0.017	0.042

Table E-6. Facility Limits for Pollutants of Concern by Outfall and Subsegment

Sub-segment	NPDES	Facility	Outfall	Parameter	Average Concen-tration (mg/L)	Maximum Concen-tration (mg/L)	Average Load Limit (ppd)	Maximum Load Limit (ppd)
030901 (cont)	LA0071382	West Lake Polymers-Lake Charles	010	Hexachlorobenzene			0.00007	0.00016
			010	Hexachlorobutadiene			0.01	0.023

Table E-7. Facility Loads for Pollutants of Concern by Outfall

NPDES	Facility	Outfall	Pollutant	Number of Samples	Number of Detects	Average Load (ppd)	Number of Samples	Number of Detects	Maximum Load (ppd)
LA0001333	WR Grace & Co	001	Ammonia	12	12	446	12	12	860
LA0003026	Conoco Lake Charles Refinery	SUM	Ammonia	35	35	45.9	35	35	697
LA0003336	Sasol North America Inc.	001	Ammonia	91	90	5.42	90	89	85
LA0003689	Basell USA Inc Lake Charles Plant	001	Ammonia	36	36	0.941	36	36	3.73
		001	PAHs	1	0				
LA0005347	Lyondell Chemical World Wide Inc	010	PAHs	1	0				
		028	Ammonia	5	1	0.625	4	2	2
		SUM	Ammonia	36	36	228	36	36	1650
LA0005941	Citgo Petroleum Corporation	003	Ammonia	36	36	254	36	36	2250
LA0036340	City of Lake Charles WWTP	001	Ammonia	36	36	100			
LA0052370	Calcasieu Refining Company	001	Ammonia	29	20	0.34	29	23	2.7
LA0067083	City of Sulphur WWTP	001	Copper	3	3	0.785	3	3	1.08
		001	Mercury	2	1	0.012	1	0	0.012
LA0080829	Louisiana Pigment Company L.P	001	Copper				36	25	0.498
		001	Mercury				22	4	0.0161
		002	Copper				36	17	0.424
LA0082511	Westlake Petrochemicals Corporation	001	PAHs	1	0				
		201	PAHs	1	0				
		301	PAHs	1	0				
LA0087157	Westlake Styrene Corporation	101	PAHs	1	0				
LA0103004	Westlake Polymers Corporation	001	PAHs	1	0				
LA0000761	PPG Industries, Inc.	001	Bromoform	32	32	10	32	32	104
		001	Hexachlorobenzene	1	0				
		001	Hexachlorobutadiene	2	1	0.0339	1	0	0.475
		101	Copper	34	34	1	34	34	7.9
		101	Mercury	13	12	0.0219	13	13	0.56
		201	Copper	36	36	4.8	36	36	92.8
		201	Hexachlorobenzene	3	2	0.000775	2	1	0.012
		201	Hexachlorobutadiene	3	2	0.000535	2	1	0.00848
		401	Hexachlorobenzene	9	4	0.000457	8	7	0.032
		401	Hexachlorobutadiene	2	1	0.00003	1	0	0.00031
LA0041025	Certainteed Corporation	001	Hexachlorobenzene	1	0				
		001	Hexachlorobutadiene	1	0				
LA0069850	Equistar Chemical	001	Hexachlorobenzene	1	0				
		001	Hexachlorobutadiene	1	0				
LA0071382	West Lake Polymers-Lake Charles	010	Hexachlorobenzene	1	0				
		010	Hexachlorobutadiene	1	0				

Table E-8. Facility Receiving Water Tidal Flows by Subsegment

Sub-segment	NPDES	Facility	Harmonic Mean Flow (cfs)	Critical Low Flow (cfs)	Mixing Zone Fraction
030301	LA0001333	WR Grace & Co	9010	3003	0.33333
	LA0003026	Conoco Lake Charles Refinery	3542	1181	0.33333
	LA0003336	Sasol North America Inc.	3542	1181	0.33333
	LA0003689	Basell USA Inc Lake Charles Plant	5000	1667	0.33333
	LA0005347	Lyondell Chemical World Wide Inc	4971	1657	0.33333
	LA0005941	Citgo Petroleum Corporation	8694	2898	0.33333
	LA0036340	City of Lake Charles WWTP	369	123	0.33333
	LA0052370	Calcasieu Refining Company	1026	342	0.33333
	LA0067083	City of Sulphur WWTP	5000	1667	0.33333
	LA0080829	Louisiana Pigment Company L.P	5750	1917	0.33333
	LA0082511	Westlake Petrochemicals Corporation	8622	2874	0.33333
	LA0087157	Westlake Styrene Corporation	8694	2898	0.33333
	LA0103004	Westlake Polymers Corporation	8622	2874	0.33333
030305	LA0036366	City of Lake Charles WWTP "B" & "C"	96	32	1
030401	LA0003735	Reynolds Metals	505	168	0.33333
	LA0039136	Cameron Parish Sewerage District	2880	960	0.33333
030901	LA0000761	PPG Industries, Inc.	363	121	1
	LA0003824	Firestone Polymers	103	34.4	1
	LA0005941	Citgo Petroleum Corporation	96.4	32.1	1
	LA0041025	Certainteed Corporation	363	121	1
	LA0053708	Air Liquide	363	121	1
	LA0069850	Equistar Chemical	96.4	32.1	1
	LA0071382	West Lake Polymers-Lake Charles	93.5	31.2	1
	LA0100099	Praxair Inc.	103	34.4	1
	LA0101869	Cetco	93.5	31.2	1
	LA0105155	W-H Holdings Inc.	93.5	31.2	1
	LA0108596	Denmar Enterprises	93.5	31.2	1

Table E-9. Maximum Tidal Flows by Subsegment

Subsegment	Harmonic Mean Flow (cfs)	Critical Low Flow (cfs)
030301	9010	3003
030305	96	32
030306	10.4	3.46
030401	2880	960
030901	363	121

Table E-10. Total Process Flows by Pollutant of Concern and Subsegment

Sub-segment	Pollutant	Effluent Flow (mgd)
030301	Ammonia	44.3
	PAHs	20.6
	Copper	34.2
	Mercury	34.2
030901	Tetrachloroethane	20.5
	Bromoform	20.5
	Copper	24.9
	Hexachlorobenzene	20.5
	Hexachlorobutadiene	20.5
	Mercury	24.9
	Nickel	24.7
	PCBs	20.5

Table E-11. Assimilative Capacity Loads and Loads per Process Flows by Subsegment and Pollutant

Sub-segment	Pollutant	Cr (µg/L)	Qr (cfs)	Qe (mgd)	Qt (cfs)	Assimilative Capacity Load (ppd)	Assimilative Capacity Load per mgd Process Flow (ppd/mgd)
030301	Ammonia	4400	3003	44.3	3070	56800	1280
	PAHs	0.049	9010	20.6	9040	1.9	0.0922
	Copper	3.63	3003	34.2	3060	46.8	1.37
	Mercury	0.025	3003	34.2	3060	0.323	0.00944
030306	1,2-Dichloroethane	6.8	10.4	0	10.4	0.304	N/A
	4,4'-DDT	0.00019	10.4	0	10.4	0.00000849	N/A
	PAHs	0.049	10.4	0	10.4	0.00219	N/A
	Calcium	320000	3.46	0	3.46	4760	N/A
	Copper	3.63	3.46	0	3.46	0.054	N/A
	Mercury	0.025	3.46	0	3.46	0.000372	N/A
	Methoxychlor	0.03	3.46	0	3.46	0.000446	N/A
	Nickel	8.2	3.46	0	3.46	0.122	N/A
	Phenol	290	3.46	0	3.46	4.31	N/A
	Zinc	81	3.46	0	3.46	1.2	N/A
030901	Tetrachloroethane	1.8	363	20.5	395	2.81	0.137
	Bromoform	34.7	363	20.5	395	54.1	2.64
	Copper	3.63	121	24.8	159	1.89	0.0762
	Hexachlorobenzene	0.00025	363	20.5	395	0.00039	0.000019
	Hexachlorobutadiene	0.32	121	20.5	153	0.166	0.0081
	Mercury	0.025	121	24.8	159	0.013	0.000524
	PCBs	0.0001	363	20.5	395	0.0000156	7.61E-7

Table E-12. Facility Wasteload Allocations (Assimilative Capacity Load) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Facility Process Flow (mgd)	Assimilative Capacity Load per mgd Process Flow (ppd/mgd)	Assimilative Capacity Wasteload Allocation (ppd)
030301	Ammonia	LA0001333	WR Grace & Co	2.32	1280	2970
		LA0003026	Conoco Lake Charles Refinery	3.86	1280	4940
		LA0003336	Sasol North America Inc.	1.78	1280	2280
		LA0003689	Basell USA Inc Lake Charles Plant	0.949	1280	1210
		LA0005347	Lyondell Chemical World Wide Inc	3.35	1280	4290
		LA0005941	Citgo Petroleum Corporation	8.27	1280	10600
		LA0036340	City of Lake Charles WWTP	9.2	1280	11800
		LA0052370	Calcasieu Refining Company	1.14	1280	1460
		LA0067083	City of Sulphur WWTP	11.1	1280	14200
		LA0080829	Louisiana Pigment Company L.P	1.131	1280	1450
		LA0082511	Westlake Petrochemicals Corporation	0.944	1280	1210
		LA0087157	Westlake Styrene Corporation	0.166	1280	212
		LA0103004	Westlake Polymers Corporation	0.135	1280	173
	PAHs	LA0003026	Conoco Lake Charles Refinery	3.86	0.0922	0.356
		LA0003336	Sasol North America Inc.	1.78	0.0922	0.164
		LA0003689	Basell USA Inc Lake Charles Plant	0.949	0.0922	0.0875
		LA0005347	Lyondell Chemical World Wide Inc	3.35	0.0922	0.309
		LA0005941	Citgo Petroleum Corporation	8.27	0.0922	0.762
		LA0052370	Calcasieu Refining Company	1.14	0.0922	0.105
		LA0082511	Westlake Petrochemicals Corporation	0.944	0.0922	0.087
		LA0087157	Westlake Styrene Corporation	0.166	0.0922	0.0153
		LA0103004	Westlake Polymers Corporation	0.135	0.0922	0.0124
	Copper	LA0001333	WR Grace & Co	2.32	1.37	3.18
		LA0003026	Conoco Lake Charles Refinery	3.86	1.37	5.29
		LA0003336	Sasol North America Inc.	1.78	1.37	2.44
		LA0003689	Basell USA Inc Lake Charles Plant	0.949	1.37	1.3
		LA0005347	Lyondell Chemical World Wide Inc	3.35	1.37	4.59
		LA0005941	Citgo Petroleum Corporation	8.27	1.37	11.3
		LA0036340	City of Lake Charles WWTP	4.6	1.37	6.3
		LA0052370	Calcasieu Refining Company	1.14	1.37	1.56
		LA0067083	City of Sulphur WWTP	5.55	1.37	7.6
		LA0080829	Louisiana Pigment Company L.P	1.131	1.37	1.55
		LA0082511	Westlake Petrochemicals Corporation	0.944	1.37	1.29
		LA0087157	Westlake Styrene Corporation	0.166	1.37	0.227
		LA0103004	Westlake Polymers Corporation	0.135	1.37	0.185
	Mercury	LA0001333	WR Grace & Co	2.32	0.00944	0.0219

Table E-12. Facility Wasteload Allocations (Assimilative Capacity Load) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Facility Process Flow (mgd)	Assimilative Capacity Load per mgd Process Flow (ppd/mgd)	Assimilative Capacity Wasteload Allocation (ppd)
030301	Mercury	LA0003026	Conoco Lake Charles Refinery	3.86	0.00944	0.0364
		LA0003336	Sasol North America Inc.	1.78	0.00944	0.0168
		LA0003689	Basell USA Inc Lake Charles Plant	0.949	0.00944	0.00896
		LA0005347	Lyondell Chemical World Wide Inc	3.35	0.00944	0.0316
		LA0005941	Citgo Petroleum Corporation	8.27	0.00944	0.0781
		LA0036340	City of Lake Charles WWTP	4.6	0.00944	0.0434
		LA0052370	Calcasieu Refining Company	1.14	0.00944	0.0108
		LA0067083	City of Sulphur WWTP	5.55	0.00944	0.0524
		LA0080829	Louisiana Pigment Company L.P	1.131	0.00944	0.0107
		LA0082511	Westlake Petrochemicals Corporation	0.944	0.00944	0.00891
		LA0087157	Westlake Styrene Corporation	0.166	0.00944	0.00157
		LA0103004	Westlake Polymers Corporation	0.135	0.00944	0.00127
030901	Tetrachloroethane	LA0000761	PPG Industries, Inc.	16.297	0.137	2.23
		LA0041025	Certainteed Corporation	1.05	0.137	0.144
		LA0069850	Equistar Chemical	1.534	0.137	0.21
		LA0071382	West Lake Polymers-Lake Charles	1.60436	0.137	0.22
	Bromoform	LA0000761	PPG Industries, Inc.	16.297	2.64	43
		LA0041025	Certainteed Corporation	1.05	2.64	2.77
		LA0069850	Equistar Chemical	1.534	2.64	4.05
		LA0071382	West Lake Polymers-Lake Charles	1.60436	2.64	4.24
	Copper	LA0000761	PPG Industries, Inc.	16.297	0.0762	1.24
		LA0003824	Firestone Polymers	1.27	0.0762	0.0968
		LA0005941	Citgo Petroleum Corporation	2.99	0.0762	0.228
		LA0041025	Certainteed Corporation	1.05	0.0762	0.08
		LA0053708	Air Liquide	0.03	0.0762	0.00229
		LA0069850	Equistar Chemical	1.534	0.0762	0.117
		LA0071382	West Lake Polymers-Lake Charles	1.60436	0.0762	0.122
		LA0100099	Praxair Inc.	0.04896	0.0762	0.00373
		LA0101869	Cetco	0.00052	0.0762	0.0000396
		LA0105155	W-H Holdings Inc.	0.0025	0.0762	0.000191
		LA0108596	Denmar Enterprises	0.0004	0.0762	0.0000305
	Hexachlorobenzene	LA0000761	PPG Industries, Inc.	16.297	0.000019	0.00031
		LA0041025	Certainteed Corporation	1.05	0.000019	0.00002
		LA0069850	Equistar Chemical	1.534	0.000019	0.0000291
		LA0071382	West Lake Polymers-Lake Charles	1.60436	0.000019	0.0000305
	Hexachlorobutadiene	LA0000761	PPG Industries, Inc.	16.297	0.0081	0.132
		LA0041025	Certainteed Corporation	1.05	0.0081	0.00851

Table E-12. Facility Wasteload Allocations (Assimilative Capacity Load) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Facility Process Flow (mgd)	Assimilative Capacity Load per mgd Process Flow (ppd/mgd)	Assimilative Capacity Wasteload Allocation (ppd)
030901	Hexachlorobutadiene	LA0069850	Equistar Chemical	1.534	0.0081	0.0124
		LA0071382	West Lake Polymers-Lake Charles	1.60436	0.0081	0.013
	Mercury	LA0000761	PPG Industries, Inc.	16.297	0.000524	0.00854
		LA0003824	Firestone Polymers	1.27	0.000524	0.000665
		LA0005941	Citgo Petroleum Corporation	2.99	0.000524	0.00157
		LA0041025	Certainteed Corporation	1.05	0.000524	0.00055
		LA0053708	Air Liquide	0.03	0.000524	0.0000157
		LA0069850	Equistar Chemical	1.534	0.000524	0.000804
		LA0071382	West Lake Polymers-Lake Charles	1.60436	0.000524	0.000841
		LA0100099	Praxair Inc.	0.04896	0.000524	0.0000257
		LA0101869	Cetco	0.00052	0.000524	0.000000272
		LA0105155	W-H Holdings Inc.	0.0025	0.000524	0.00000131
		LA0108596	Denmar Enterprises	0.0004	0.000524	0.00000021
	PCBs	LA0000761	PPG Industries, Inc.	16.297	0.000000761	0.0000124
		LA0041025	Certainteed Corporation	1.05	0.000000761	0.000000799
		LA0069850	Equistar Chemical	1.534	0.000000761	0.00000117
		LA0071382	West Lake Polymers-Lake Charles	1.60436	0.000000761	0.00000122

Table E-13. Facility Wasteload Allocations (LDEQ) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Cr (µg/L)	Qe (mgd)	Qr (cfs)	FS (unitless)	DF (unitless)	LDEQ Wasteload Allocation (ppd)
030301	Ammonia	LA0001333	WR Grace & Co	4400	2.32	3003	0.215	0.00358	23800
		LA0003026	Conoco Lake Charles Refinery	4400	3.86	1181	0.215	0.015	9430
		LA0003336	Sasol North America Inc.	4400	1.78	1181	0.215	0.00696	9380
		LA0003689	Basell USA Inc Lake Charles Plant	4400	0.949	1667	0.215	0.00264	13200
		LA0005347	Lyondell Chemical World Wide Inc	4400	3.35	1657	0.215	0.00932	13200
		LA0005941	Citgo Petroleum Corporation	4400	8.27	2898	0.215	0.0131	23200
		LA0036340	City of Lake Charles WWTP	4400	9.2	123	0.215	0.258	1310
		LA0052370	Calcasieu Refining Company	4400	1.14	342	0.215	0.0153	2740
		LA0067083	City of Sulphur WWTP	4400	11.1	1667	0.215	0.03	13600
		LA0080829	Louisiana Pigment Company L.P	4400	1.131	1917	0.215	0.00274	15200
		LA0082511	Westlake Petrochemicals Corporation	4400	0.944	2874	0.215	0.00153	22700
		LA0087157	Westlake Styrene Corporation	4400	0.166	2898	0.215	0.000266	22800
		LA0103004	Westlake Polymers Corporation	4400	0.135	2874	0.215	0.000218	22700
	PAHs	LA0003026	Conoco Lake Charles Refinery	0.049	3.86	3542	0.215	0.00504	0.313
		LA0003336	Sasol North America Inc.	0.049	1.78	3542	0.215	0.00233	0.312
		LA0003689	Basell USA Inc Lake Charles Plant	0.049	0.949	5000	0.215	0.000882	0.44
		LA0005347	Lyondell Chemical World Wide Inc	0.049	3.35	4971	0.215	0.00312	0.439
		LA0005941	Citgo Petroleum Corporation	0.049	8.27	8694	0.215	0.0044	0.766
		LA0052370	Calcasieu Refining Company	0.049	1.14	1026	0.215	0.00514	0.0906
		LA0082511	Westlake Petrochemicals Corporation	0.049	0.944	8622	0.215	0.000509	0.758
		LA0087157	Westlake Styrene Corporation	0.049	0.166	8694	0.215	0.0000888	0.764
		LA0103004	Westlake Polymers Corporation	0.049	0.135	8622	0.215	0.0000728	0.758
	Copper	LA0001333	WR Grace & Co	3.63	2.32	3003	0.215	0.00358	19.5
		LA0003026	Conoco Lake Charles Refinery	3.63	3.86	1181	0.215	0.015	7.79
		LA0003336	Sasol North America Inc.	3.63	1.78	1181	0.215	0.00696	7.75

Table E-13. Facility Wasteload Allocations (LDEQ) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Cr (µg/L)	Qe (mgd)	Qr (cfs)	FS (unitless)	DF (unitless)	LDEQ Wasteload Allocation (ppd)
030301	Copper	LA0003689	Basell USA Inc Lake Charles Plant	3.63	0.949	1667	0.215	0.00264	10.9
		LA0005347	Lyondell Chemical World Wide Inc	3.63	3.35	1657	0.215	0.00932	10.9
		LA0005941	Citgo Petroleum Corporation	3.63	8.27	2898	0.215	0.0131	19.1
		LA0036340	City of Lake Charles WWTP	3.63	4.6	123	0.215	0.148	0.94
		LA0052370	*Calcasieu Refining Company*	*3.63*	*1.14*	*342*	*0.215*	*0.0153*	*2.25*
		LA0067083	City of Sulphur WWTP	3.63	5.55	1667	0.215	0.0152	11.1
		LA0080829	Louisiana Pigment Company L.P	3.63	1.131	1917	0.215	0.00274	12.5
		LA0082511	Westlake Petrochemicals Corporation	3.63	0.944	2874	0.215	0.00153	18.7
		LA0087157	Westlake Styrene Corporation	3.63	0.166	2898	0.215	0.000266	18.8
		LA0103004	Westlake Polymers Corporation	3.63	0.135	2874	0.215	0.000218	18.8
	Mercury	LA0001333	WR Grace & Co	0.025	2.32	3003	0.215	0.00358	0.135
		LA0003026	Conoco Lake Charles Refinery	0.025	3.86	1181	0.215	0.015	0.0538
		LA0003336	Sasol North America Inc.	0.025	1.78	1181	0.215	0.00696	0.0533
		LA0003689	Basell USA Inc Lake Charles Plant	0.025	0.949	1667	0.215	0.00264	0.075
		LA0005347	Lyondell Chemical World Wide Inc	0.025	3.35	1657	0.215	0.00932	0.0749
		LA0005941	Citgo Petroleum Corporation	0.025	8.27	2898	0.215	0.0131	0.132
		LA0036340	City of Lake Charles WWTP	0.025	4.6	123	0.215	0.148	0.00649
		LA0052370	Calcasieu Refining Company	0.025	1.14	342	0.215	0.0153	0.0155
		LA0067083	City of Sulphur WWTP	0.025	5.55	1667	0.215	0.0152	0.0759
		LA0080829	Louisiana Pigment Company L.P	0.025	1.131	1917	0.215	0.00274	0.086
		LA0082511	Westlake Petrochemicals Corporation	0.025	0.944	2874	0.215	0.00153	0.128
		LA0087157	Westlake Styrene Corporation	0.025	0.166	2898	0.215	0.000266	0.13
		LA0103004	Westlake Polymers Corporation	0.025	0.135	2874	0.215	0.000218	0.13
030901	Tetrachloroethane	LA0000761	PPG Industries, Inc.	1.8	16.297	363	0.646	0.065	3.77
		LA0041025	Certainteed Corporation	1.8	1.05	363	0.646	0.00446	3.54
		LA0069850	Equistar Chemical	1.8	1.534	96.4	0.646	0.024	0.96

Table E-13. Facility Wasteload Allocations (LDEQ) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Cr (µg/L)	Qe (mgd)	Qr (cfs)	FS (unitless)	DF (unitless)	LDEQ Wasteload Allocation (ppd)
030901	Tetrachloroethane	LA0071382	West Lake Polymers-Lake Charles	1.8	1.60436	93.5	0.646	0.0259	0.93
		LA0000761	PPG Industries, Inc.	34.7	16.297	363	0.646	0.065	72.6
		LA0041025	Certainteed Corporation	34.7	1.05	363	0.646	0.00446	68.1
		LA0069850	Equistar Chemical	34.7	1.534	96.4	0.646	0.024	18.6
		LA0071382	West Lake Polymers-Lake Charles	34.7	1.60436	93.5	0.646	0.0259	17.9
	Copper	LA0000761	PPG Industries, Inc.	3.63	16.297	121	0.646	0.173	2.85
		LA0003824	Firestone Polymers	3.63	1.27	34.4	0.646	0.0541	0.711
		LA0005941	Citgo Petroleum Corporation	3.63	2.99	32.1	0.646	0.126	0.718
		LA0041025	Certainteed Corporation	3.63	1.05	121	0.646	0.0133	2.39
		LA0053708	Air Liquide	3.63	0.03	121	0.646	0.000384	2.36
		LA0069850	Equistar Chemical	3.63	1.534	32.1	0.646	0.0689	0.674
		LA0071382	West Lake Polymers-Lake Charles	3.63	1.60436	31.2	0.646	0.0737	0.66
		LA0100099	Praxair Inc.	3.63	0.04896	34.4	0.646	0.0022	0.674
		LA0101869	Cetco	3.63	0.00052	31.2	0.646	0.0000258	0.612
		LA0105155	W-H Holdings Inc.	3.63	0.0025	31.2	0.646	0.000124	0.611
		LA0108596	Denmar Enterprises	3.63	0.0004	31.2	0.646	0.0000198	0.611
	Hexachlorobenzene	LA0000761	PPG Industries, Inc.	0.00025	16.297	363	0.646	0.065	0.000523
		LA0041025	Certainteed Corporation	0.00025	1.05	363	0.646	0.00446	0.000491
		LA0069850	Equistar Chemical	0.00025	1.534	96.4	0.646	0.024	0.000133
		LA0071382	West Lake Polymers-Lake Charles	0.00025	1.60436	93.5	0.646	0.0259	0.000129
	Hexachlorobutadiene	LA0000761	PPG Industries, Inc.	0.32	16.297	121	0.646	0.173	0.252
		LA0041025	Certainteed Corporation	0.32	1.05	121	0.646	0.0133	0.211
		LA0069850	Equistar Chemical	0.32	1.534	32.1	0.646	0.0689	0.0594
		LA0071382	West Lake Polymers-Lake Charles	0.32	1.60436	31.2	0.646	0.0737	0.0581
	Mercury	LA0000761	PPG Industries, Inc.	0.025	16.297	121	0.646	0.173	0.0197
		LA0003824	Firestone Polymers	0.025	1.27	34.4	0.646	0.0541	0.00489

Table E-13. Facility Wasteload Allocations (LDEQ) by Subsegment and Pollutant

Sub-segment	Parameter	NPDES	Facility	Cr (µg/L)	Qe (mgd)	Qr (cfs)	FS (unitless)	DF (unitless)	LDEQ Wasteload Allocation (ppd)
030901	Mercury	LA0005941	Citgo Petroleum Corporation	0.025	2.99	32.1	0.646	0.126	0.00494
		LA0041025	Certainteed Corporation	0.025	1.05	121	0.646	0.0133	0.0165
		LA0053708	Air Liquide	0.025	0.03	121	0.646	0.000384	0.0163
		LA0069850	Equistar Chemical	0.025	1.534	32.1	0.646	0.0689	0.00465
		LA0071382	West Lake Polymers-Lake Charles	0.025	1.60436	31.2	0.646	0.0737	0.00454
		LA0100099	Praxair Inc.	0.025	0.04896	34.4	0.646	0.0022	0.00466
		LA0101869	Cetco	0.025	0.00052	31.2	0.646	0.0000258	0.0042
		LA0105155	W-H Holdings Inc.	0.025	0.0025	31.2	0.646	0.000124	0.00421
		LA0108596	Denmar Enterprises	0.025	0.0004	31.2	0.646	0.0000198	0.0042
	PCBs	LA0000761	PPG Industries, Inc.	0.00001	16.297	363	0.646	0.065	0.0000209
		LA0041025	Certainteed Corporation	0.00001	1.05	363	0.646	0.00446	0.0000196
		LA0069850	Equistar Chemical	0.00001	1.534	96.4	0.646	0.024	0.00000534
		LA0071382	West Lake Polymers-Lake Charles	0.00001	1.60436	93.5	0.646	0.0259	0.00000517

Table E-14. Minimum Facility Wasteload Allocation by Pollutant of Concern and Subsegment

Sub-segment	Pollutant	NPDES	Facility	LDEQ Wasteload Allocation (ppd)	Load Wasteload Allocation (ppd)	Minimum Wasteload Allocation (ppd)
030301	Ammonia	LA0001333	WR Grace & Co	23800	2970	2970
		LA0003026	Conoco Lake Charles Refinery	9430	4940	4940
		LA0003336	Sasol North America Inc.	9380	2280	2280
		LA0003689	Basell USA Inc Lake Charles Plant	13200	1210	1210
		LA0005347	Lyondell Chemical World Wide Inc	13200	4290	4290
		LA0005941	Citgo Petroleum Corporation	23200	10600	10600
		LA0036340	City of Lake Charles WWTP	1310	11800	1310
		LA0052370	Calcasieu Refining Company	2740	1460	1460
		LA0067083	City of Sulphur WWTP	13600	14200	13600
		LA0080829	Louisiana Pigment Company L.P	15200	1450	1450
		LA0082511	Westlake Petrochemicals Corporation	22700	1210	1210
		LA0087157	Westlake Styrene Corporation	22800	212	212
		LA0103004	Westlake Polymers Corporation	22700	173	173
	PAHs	LA0003026	Conoco Lake Charles Refinery	0.313	0.356	0.313
		LA0003336	Sasol North America Inc.	0.312	0.164	0.164
		LA0003689	Basell USA Inc Lake Charles Plant	0.44	0.0875	0.0875
		LA0005347	Lyondell Chemical World Wide Inc	0.439	0.309	0.309
		LA0005941	Citgo Petroleum Corporation	0.766	0.762	0.762
		LA0052370	Calcasieu Refining Company	0.0906	0.105	0.0906
		LA0082511	Westlake Petrochemicals Corporation	0.758	0.087	0.087
		LA0087157	Westlake Styrene Corporation	0.764	0.0153	0.0153
		LA0103004	Westlake Polymers Corporation	0.758	0.0124	0.0124
	Copper	LA0001333	WR Grace & Co	19.5	3.18	3.18
		LA0003026	Conoco Lake Charles Refinery	7.79	5.29	5.29
		LA0003336	Sasol North America Inc.	7.75	2.44	2.44
		LA0003689	Basell USA Inc Lake Charles Plant	10.9	1.3	1.3
		LA0005347	Lyondell Chemical World Wide Inc	10.9	4.59	4.59
		LA0005941	Citgo Petroleum Corporation	19.1	11.3	11.3
		LA0036340	City of Lake Charles WWTP	0.94	6.3	0.94
		LA0052370	Calcasieu Refining Company	2.25	1.56	1.56
		LA0067083	City of Sulphur WWTP	11.1	7.6	7.6
		LA0080829	Louisiana Pigment Company L.P	12.5	1.55	1.55
		LA0082511	Westlake Petrochemicals Corporation	18.7	1.29	1.29
		LA0087157	Westlake Styrene Corporation	18.8	0.227	0.227
		LA0103004	Westlake Polymers Corporation	18.8	0.185	0.185
	Mercury	LA0001333	WR Grace & Co	0.135	0.0219	0.0219
		LA0003026	Conoco Lake Charles Refinery	0.0538	0.0364	0.0364
		LA0003336	Sasol North America Inc.	0.0533	0.0168	0.0168
		LA0003689	Basell USA Inc Lake Charles Plant	0.075	0.00896	0.00896
		LA0005347	Lyondell Chemical World Wide Inc	0.0749	0.0316	0.0316

Table E-14. Minimum Facility Wasteload Allocation by Pollutant of Concern and Subsegment

Sub-segment	Pollutant	NPDES	Facility	LDEQ Wasteload Allocation (ppd)	Load Wasteload Allocation (ppd)	Minimum Wasteload Allocation (ppd)
030301 (cont)	Mercury (cont)	LA0005941	Citgo Petroleum Corporation	0.132	0.0781	0.0781
		LA0036340	City of Lake Charles WWTP	0.00649	0.0434	0.00649
		LA0052370	Calcasieu Refining Company	0.0155	0.0108	0.0108
		LA0067083	City of Sulphur WWTP	0.0759	0.0524	0.0524
		LA0080829	Louisiana Pigment Company L.P	0.086	0.0107	0.0107
		LA0082511	Westlake Petrochemicals Corporation	0.128	0.00891	0.00891
		LA0087157	Westlake Styrene Corporation	0.13	0.00157	0.00157
		LA0103004	Westlake Polymers Corporation	0.13	0.00127	0.00127
030901	Tetrachloroethane	LA0000761	PPG Industries, Inc.	3.77	2.23	2.23
		LA0041025	Certainteed Corporation	3.54	0.144	0.144
		LA0069850	Equistar Chemical	0.96	0.21	0.21
		LA0071382	West Lake Polymers-Lake Charles	0.93	0.22	0.22
	Bromoform	LA0000761	PPG Industries, Inc.	72.6	43	43
		LA0041025	Certainteed Corporation	68.1	2.77	2.77
		LA0069850	Equistar Chemical	18.6	4.05	4.05
		LA0071382	West Lake Polymers-Lake Charles	17.9	4.24	4.24
	Copper	LA0000761	PPG Industries, Inc.	2.85	1.24	1.24
		LA0003824	Firestone Polymers	0.711	0.0968	0.0968
		LA0005941	Citgo Petroleum Corporation	0.718	0.228	0.228
		LA0041025	Certainteed Corporation	2.39	0.08	0.08
		LA0053708	Air Liquide	2.36	0.00229	0.00229
		LA0069850	Equistar Chemical	0.674	0.117	0.117
		LA0071382	West Lake Polymers-Lake Charles	0.66	0.122	0.122
		LA0100099	Praxair Inc.	0.674	0.00373	0.00373
		LA0101869	Celco	0.612	0.0000396	0.0000396
		LA0105155	W-H Holdings Inc.	0.611	0.000191	0.000191
		LA0108596	Denmar Enterprises	0.611	0.0000305	0.0000305
	Hexachlorobenzene	*LA0000761*	*PPG Industries, Inc.*	*0.000523*	*0.00031*	*0.00031*
		LA0041025	Certainteed Corporation	0.000491	0.00002	0.00002
		LA0069850	Equistar Chemical	0.000133	0.0000291	0.0000291
		LA0071382	West Lake Polymers-Lake Charles	0.000129	0.0000305	0.0000305
	Hexachlorobutadiene	LA0000761	PPG Industries, Inc.	0.252	0.132	0.132
		LA0041025	Certainteed Corporation	0.211	0.00851	0.00851
		LA0069850	Equistar Chemical	0.0594	0.0124	0.0124
		LA0071382	West Lake Polymers-Lake Charles	0.0581	0.013	0.013
	Mercury	LA0000761	PPG Industries, Inc.	0.0197	0.00854	0.00854
		LA0003824	Firestone Polymers	0.00489	0.000665	0.000665
		LA0005941	Citgo Petroleum Corporation	0.00494	0.00157	0.00157
		LA0041025	Certainteed Corporation	0.0165	0.00055	0.00055
		LA0053708	Air Liquide	0.0163	0.0000157	0.0000157
		LA0069850	Equistar Chemical	0.00465	0.000804	0.000804

Table E-14. Minimum Facility Wasteload Allocation by Pollutant of Concern and Subsegment

Sub-segment	Pollutant	NPDES	Facility	LDEQ Wasteload Allocation (ppd)	Load Wasteload Allocation (ppd)	Minimum Wasteload Allocation (ppd)
030901 (cont)	Mercury (cont)	LA0071382	West Lake Polymers-Lake Charles	0.00454	0.000841	0.000841
		LA0100099	Praxair Inc.	0.00466	0.0000257	0.0000257
		LA0101869	Cetco	0.0042	0.000000272	0.000000272
		LA0105155	W-H Holdings Inc.	0.00421	0.00000131	0.00000131
		LA0108596	Denmar Enterprises	0.0042	0.00000021	0.00000021
	PCBs	LA0000761	PPG Industries, Inc.	0.0000209	0.0000124	0.0000124
		LA0041025	Certainteed Corporation	0.0000196	0.000000799	0.000000799
		LA0069850	Equistar Chemical	0.00000534	0.00000117	0.00000117
		LA0071382	West Lake Polymers-Lake Charles	0.00000517	0.00000122	0.00000122

Dischargers in Calcasieu and Cameron Parishes Listed in EPA's Permit Compliance System Database that Discharge or May Discharge to the Calcasieu Estuary

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0104582	3569	Aggreko Inc.-Lake Charles		Sulphur	Aggreko Inc.-Lake Charles	Maple Fork Creek-Bayou D'Inde		8080206
LA0051730	2813	Air Liquide America Corp.		Lake Charles	Air Liquide America Corp	PPG Canal To Bayou E-Inde		8080206
LA0053708	2813	Air Liquide America Corp.		Sulphur	Air Liquide America Corp	Little Bayou D'Inde		8080206
LA0081256	2092	Alpha Seafood Enter		Hackberry	Alpha Seafood Enterprises Inc.	Bayou Kelco		8080206
LAG531197	4952	Ambar Lone Star Cameron Fac		Cameron	Ambar Lone Star Cameron Facili			
LA0054712	4952	Amerada Hess Corporation					20	8080206
LA0056189	4822	Aminoil Dispatch Service Camer						
LAU009440		Andrews Transport Inc.		Sulphur	Andrews Transport Inc.			
LAU009040		At Home Estates		Carlyss	At Home Estates	Dudly Johnson Mair To Olson Bayou		
LA0092355	3586	Aumiller's Petroleum Equipment						
LA0061760	1389	Baroid A Halliburton Co		Westlake	Baroid A Halliburton Co	Calcasieu River		8080206
LA0107115	1389	Baroid Drilling Fluids		Cameron	Baroid Drilling Fluids Inc	Calcasieu Pass Calcasieu Ship Chnl		8080206
LA0003689	2821	Bassell USA Inc		Westlake	Bassell USA Inc	315	190	8080206
LA0076571	1389	Big Diamond Truck Serv-Cameron						
LA0054658	5511	Bolton Ford Inc Lake Charles						
LA0081981	4952	Briken & Associates	0.055	Lake Charles	Lake Street Water Corp-Briken	To Coulee Agpolyte		8080206
LA0070408	4941	Brimstone Landfill-Calcasieu P						
LA0114642	1311	Burlington Resources Oil & Gas		Cameron	Burlington Resources			
LA0114529	1389	Burlington Resources Oil & Gas						
LA0059960	5084	Calcasieu Fabricating Corp						
LA0073253	4953	Calcasieu Parish Waterworks Di						
LA0073261	4953	Calcasieu Parish Waterworks Di						
LA0112704	4911	Calcasieu Power Llc-Calcasieu			Calcasieu Power Plt	Moss Lake		8080206
LA0077534	4953	Calcasieu Psh Wwd#11 Ward 4						
LAU009195		Calcasieu Recycling Inc.				Calcasieu River		
LA0052370	2911	Calcasieu Refining Co.		Lake Charles	Calcaseiu Ref Co.	Calcasieu River		8080206
LA0039136	4952	Cameron Parish Sd#1	0.44	Cameron Parish	Cameron Parish Sewer Dist # 1	Calcasieu River	20	8080206
LAG540219	4952	Cameron Ph School B-S Cameron		Cameron	Cameron Ph School Board	Unnamed Ditch To Creole Canal		

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0102725	4952	Cameron Ph. W.W. Dist. #2		Hackberry	Cameron Ph. W.W. Dist. #2	Calcasieu Ship Channel		8080206
LA0065196	3559	Carboline Company-Lake Charles						
LAU003564		Cravin' Cajun Restaurant		Lake Charles	Cravin' Cajun Restaurant	Road Ditch-West Fork-Calcasieu Rivr		
LA0057045	1321	Central Crude Inc.						
LA0049816	5172	Central Crude Inc-Lake Charles						
LA0041025	2821	Certain-Teed Products Corp-Cam		Sulphur	Certainteed Corporation	Seg 030301 Calcasieu River Basin		8080206
LA0101869	3443	Cetco Inc Colloid Env		Sulphur	Cetco Inc	Little Bayou D'Inde		8080206
LA0054828	4959	Chemical Waste Management Serv		Carlyss	Chemical Waste Managemant Inc	Seg 031001 Bayou Choupique		8080206
LA0005941	2911	Citgo Petroleum Corp.		Lake Charles		315	190	8080206
LA0098442	7542	Citgo Super Saver #1-Vincent O				Lake Charles		
LA0041297	7699	Cities Service Oil Co-Railway						
LAU009496		City Of Lake Charles SW WWTP		Lake Charles	City Of Lake Charles SW WWTP			
LAG490005	9999	Civil Const & Env S-Hwy 108 Di		83460	Hwy 108 Dirt Pit	Bayou D'Inde		
LA0105953	9999	Civil Constr & Env Svcs-Pit		Sulphur	Civil Construction & Environme			8080206
LA0113301	4931	Clayton Williams Energy Inc.						
LAU009267		Clean Car Interior				Roadside Ditch To Contraband Bayou		
LA0099872	5082	CLM Equipment Company Inc.		Sulphur	CLM Equipment Company Inc.	Maple Fork To Bayou D'Inde Cakasi		
LA0101516	2086	Coca-Cola Bottling-Lake Charle		Lake Charles	Coca-Cola Bottling-Lake Charle	Kayouche Coulee		
LA0088102	1389	Columbia Gas Development Corp.						
LA0081027	3273	Concrete Pipe Products Co Inc						
LA0003336	2869	Condea Vista Company		Westlake	Condea Vista Company	315	330	8080206
LA0064149	4491	Conoco Inc - Lake Charles		Lake Charles	Conoco Inc	Youns Bayou Calcasieu River		8080206
LA0064131	4226	Conoco Inc-Lake Charles Coke H						8080206
LA0003026	2911	Conoco Inc-Lake Charles Refine		Westlake	Conoco Lake Charles Ref	Bayou Verdine	330	8080206
LA0054062	2999	Conoco Incorporated		Carlyss	Conoco Inc.-Lake Charles	Calcasieu River	190	8080206
LA0065234	1381	Conoco Inc-S Grand Lake						
LA0000809	2895	Continental Carbon-Calcasieu				3G	330	8080206
LA0001350	1321	Continental Oil Co-Calcasieu		Lake Charles	Conoco Inc			
LA0062154	1321	Cotton Petro Co-Sec 26 T145 R4						
LA0062162	1321	Cotton Petro Co-Sec 5 T145 R6W						
LA0063517	6515	Country Oaks Mobile Home Park-						

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0104680	1442	Daigle Brothers-Arizona Pit		Sulphur	Daigle Brothers-Arizona Pit	Bayou D'Inde		8080206
LA0108596	5082	Denmar Enterprises-		Sulphur	Denmar Enterprises	Bayou D'Inde		
LA0069795	4952	Dept Trans Dist 07 Hdq St						
LA0104981	4491	Devall Enterprises - Sulphur		Sulphur	Devall Enterprises Inc.	Pipe-ICWW-Calcasieu Ship Channel		8080206
LA0092762	5541	Diamond Shamrock Store No. 984						8080206
LA0084573	7699	Dragon Products And Rentals						8080206
LAR05A340		DSI Transport Inc.		Sulphur	DSI Transport Inc			
LAG110092	3273	Dunham Price Inc-Dunham Pri		92560	Dunham Price Westlake Facility	Calcasieu River		
LA0113352	1382	Dynamic Exploration Inc.						
LA0113174	1381	East Hackberry Field		Hackberry	East Hackberry Field	Calcasieu Lake		
LA0097314	4226	Eastlake Oils Inc. Facility 2		Lake Charles	Eastlake Oils Inc. Facility 2	Calcasieu River		8080206
LAU009282		Enviroguard Inc.		Lake Charles	Environguard Inc	Roadside Drainage To English Bayou		
LA0112097	4612	Equilon Ppln Co Llc-Haymark Te		13280	Haymark Term Raw Material Supp	Calcasieu River-Moss Lake		8080206
LA0101958	5541	Evans Oil Of La Inc.		Lake Charles	Evans Oil Of La Inc.	Calcaseiu River		8080206
LA0072371	6515	Fairview Mobile Estates (North	0.065	Lake Charles	Fairview Mobile Estates-North	Coulee Hippolyte		8080206
LA0062782	6515	Fairview Mobile Estates So-Lak						
LAU009070		Fausto's Fried Chicken		Lake Charles	Fausto's Fried Chicken			
LA0097535	4953	FB Lake Charles Site (Short St		Lake Charles	FB Lake Charles Site (Short St	Calcasieu River To Gulf Of Mexico		
LA0003824	2822	Firestone Tire Rubber-Lake Cha		Lake Charles		323	330	8080206
LA0095583	4953	Former Southland Store #19190		Westlake	Former Southland Store #19190			8080206
LA0094196	4953	Former Southland Store #30186						8080206
LA0106640	7542	Gate Petro Co Inc.		Moss Bluff	Gate Petro Co Inc	Moss Gully Calcasieu River		
LAG750197	7542	Gate Petro Co Inc-Gate Svc S		Moss Bluff	Gate Petro Co Inc	Moss Gully-Calcasieu River		
LA0050539	2819	Grace W R & Co-Calcasieu Rive				300	190	8080206
LA0007196	4941	Greater Lk Charles Wtr Co-Cal					330	8080206
LA0006343	4941	Greater Lk Charles Wtr Co-Calc					330	8080206
LA0007200	4941	Greater Lk Charles Wtr Co-Calc					330	8080206
LA0105066	5082	Head & Engquist Eq-Sulphur		Sulphur	Head & Engquist Equipment Llc	Fork Bayou-Calcasieu Ship Channel		8080206
LA0003956	5032	Holnam Inc - Lake Charles		Lake Charles	Holnam Inc - Lake Charles	Calcasieu River		8080206
LA0113760	1389	Houston Oil & Gas				Unnamed Ditch		
LA0062308	1321	Houston Oil & Min-Brazos Area						

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0104302	5541	Huber Oil-Road King Truck Stop		Lake Charles	Huber Oil Road King Truck Stop	English Bayou		8080206
LA0056316	4952	Hunter's Grove Sewer&Wtr Inc-					170	8080206
LAU009411		Hunter's Grove Subdivision		Lake Charles	Hunter's Grove Subdivision	Unnamed Ditch To Coulee Hippdyte		
LAU009244		John's Chevron				Local Drainage To Contraband Bayou		
LA0070106	2819	Jupiter Chemicals Inc.-Calcas		Westlake	Jupiter Chemicals Inc	Bayou Vercine		8080206
LA0047058	2813	Jupiter Chemicals Inc-Lake Cha		Westlake	Tessenderlo Kerley Inc	Calcasieu River		8080206
LA0058572	4011	Kansas City Southern Rr						8080206
LA0007242	4013	Kansas City Southern Rr-Lake C						
LA0105295	5171	L&L Oil Co-Cameron		Cameron	L&L Oil Co	Calcasieu Pass-Calcasieu Chan		8080206
LA0105287	5171	L&L Oil Co-Lake Charles		Lake Charles	L&L Oil Co Inc.	Antoine Gully-English Bayou		
LA0060640	7219	La Dept Transpo-Sulphur Westbo						
LA0060658	7219	La Dept Transpo-Toomey Eastbou						
LA0052221	1381	La Land & Exp-Ca						
LA0061743	1321	La Land & Exp-Grand						
LA0004286	2077	La Menhaden Co-Cameron					20	8080206
LA0031887	5032	Lafarge Corp - Westlake						
LAL036340	4952	Lake Charles City Of (Plant A	6.7			Calcasieu River		8080206
LAL036358	4952	Lake Charles City Of (Plant B	3.2			Caotraband Bayou		8080206
LAL036366	4952	Lake Charles City Of (Plant C	4			Contraband Bayou		8080206
LA0091154	4941	Lake Charles City Of Center E						8080206
LA0091171	4941	Lake Charles City Of Center W						8080206
LA0091146	4941	Lake Charles City Of George H						8080206
LA0091138	4941	Lake Charles City Of McNeese						8080206
LA0003735	2999	Lake Charles Carbon		Lake Charles		315	330	8080206
LA0036340	4952	Lake Charles City O-WWTP "A"	6.7	Lake Charles	City Of Lake Charles	Calcasieu River Below Saltwater Bar	330	8080206
LA0036358	4952	Lake Charles City O-WWTP "B"	3.2	Lake Charles	City Of Lake Charles	Contraband Bayou To Calcasieu	330	8080206
LA0036366	4952	Lake Charles City O-WWTP "C"	4	Lake Charles	City Of Lake Charles	Contraband Bayou To Calcasieu	330	8080206
LA0091812	4491	Lake Charles Harbor Term Bt#1		Sulphur	Lake Charles Harbor & Terminal	Calcasieu River		8080206
LA0104469	5171	Lake Charles Pipeline-Carlyss		Carlyss	Lake Charles Pipeline-Carlyss	Indian Marais Bayou		8080206
LA0105279	5084	Lincoln Big Three-West Lake		Westlake	Lincoln Big Three	Calcasieu River		
LA0092002	4922	Louisiana Gas System-Luke Powe						

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0080829	2819	Louisiana Pigment Company Lp		Westlake	Louisiana Pigment Co. L.P.	Calcasieu Ship Channel (Calcasieu R		8080206
LA0005347	2869	Lyondell Chemical		Lake Charles	Lyondell Chemical Worldwide In	Calcasieu River/Bayou Verdine		8080206
LA0005274	1479	M I Drilling Fluids Co-Westlan						
LA0108146	1442	Manuel Trucking-		Lake Charles	Manuel Trucking	Ditch-Twin Isl Bayou To ICWW		
LA0062588	4491	Marine Cleaning-Carlyss			Marine Cleaning-Carlyss	Calcasieu River		
LAU009243		Mc Drig's Corp.				Unnamed Ditch To Kayouche Coulee		
LA0111490	4953	Mcmanus Const Inc-Old Town R		13280	Old Town Road Landfill	Berry Bay-Calcasieu River		
LA0104850	8221	McNeese State Unive-McNeese St		Lake Charles	McNeese State University	Contraband Bayou		
LA0067067	4952	Merit Septic & Sewage Treatmen						
LA0094587	2813	MG Industries-Westlake		Westlake	MG Industries	Bayou Verdine-Calcasieu River		8080206
LA0095109	1389	M-I Drilling Fluids A Dresser/						8080206
LA0106020	1389	M-I Drilling Fluids-Cameron		Cameron	M-I Drilling Fluids Inc.	Calcasieu River		
LA0065145	1321	Mobil Cameron Gas Plant-Lake						
LA0038792	1381	Mobil Oil Corp-Lafayette						
LA0108227	7215	Moss Bluff Shopping-Moss Bluff		Lake Charles	Moss Bluff Shopping Center In	Calcasieu River		
LA0106674	2911	National Resources		Lake Charles	National Resources Inc	English Bayou		
LA0108308	4922	Natural Gas Pipelin-Compressor		Cameron	Natural Gas Pipeline Of Americ	Deep Bayou		
LA0108324	4922	Natural Gas Pipelin-Compressor			Natural Gas Pipeline Co Of Ame	Canal-Bell City Drainage-ICWW		
LA0101354	3599	Norwell Equipment-Lake Charles		Lake Charles	Norwell Equipment Co	English Bayou		
LA0055646	4952	Oak Meadow Water Works Inc-Lak					100	8080206
LA0104426	7699	Ofc Of Conservation-Big Diamon		Cameron	Ofc Of Conservation-Big Diamon	South Fork-Black Bayou		
LA0076902	5084	Ohmstede Inc-Calcasieu Parish						
LA0064173	2819	Oil Masters Inc-Calcasieu Pari						
LA0102822	2819	Olin - Lake Charles Plant		Westlake	Olin-Lake Charles Plant	Calcasieu River		8080206
LA0069850	2869	Oxy Petrochemicals-Lake Charle		Lake Charles	Equistar Chemicals Lp.	Bayou D'Inde		8080206
LA0061174	7033	Palvest Inc-Rosemont Trailer						
LA0088935	7542	Pct Coke Terminal						8080206
LA0068144	4491	Pecan Grove Terminal-Carlyss L		Lake Charles	Conoco Inc	Calcasieu River		
LA0079413	4952	Pelican Point Subdivision						
LA0086151	4953	Petit Bois Sani Landfill (Bfi)						8080206
LA0101729	4226	Phoenix Distribution-Lake Char		Lake Charles		Calcasieu River		

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0073156	6515	Pierce Acres Mobile Home Park-						
LA0000761	2869	PPG InE-Lake Charles		Lake Charles	PPG - Lake Charles	Bayou D'Inde & Bayou Verdine		8080206
LA0100099	2813	Praxair - Lake Charles		Lake Charles	Praxair	Bayou D'Inde To Calcasieu River		8080206
LA0107182	2813	Praxair PPG Hydrogen		Westlake	Praxair Inc	Bayou D'Inde Calcasieu River		8080206
LA0072401	4952	Prien Oaks Homeowners Assoc	0.019			Henderson Bayou		
LA0108103	2951	Re Heidt Constructi-		Westlake	Re Heidt Construction Co Inc	Calcasieu Ship Channel-Calcasieu Lk		
LA0113042	3531	Re Heidt Construction Co. Inc		Westlake	Re Heidt Construction Co. Inc	Unnamed Ditch To Calcasieu River		
LA0050644	7519	Reiser-Spiller Trailer Park						
LA0097713	4922	Sabine Pipe Line Co.		Sulphur	Sabine Ppln Co.			
LAG530956	4922	Sabine Pipe Line Co-Lake Charl		83460	Lake Charles Compressor Sta	Indian Marcus-Calcasieu River		
LA0072630	4922	Sabine Pipeline Co						
LA0071595	7996	Sam Houston Jones State Park-W						
LA0046621	7011	Sherton-Chateau Charles Hotel-						
LAG541042	8062	So. Cameron Memorial Hospital		Cameron	So. Cameron Memorial Hospital			
LAG530878	2819	Southern Ionics Inc-		83460		Calcasieu River		
LA0067377	4013	Southern Pacific Trans						
LA0108383	5093	Southern Scrap Mate-Lake Charl		Lake Charles	Southern Scrap Material Co Inc	Bayou Verdine		
LAU009196		Southern Scrap Xpress Recycling		Lake Charles	Southern Scrap Xpress Recycle	Calcasieu River		
LA0105325	4952	Southtowner Mobile Estates		Lake Charles	Southtowner Mobile Estates	Bayou ContrabanE-Calcasieu Rv		
LA0105660	7542	Speedway Superamerica #9066		Sulphur	Speedway Superamerica Llc#9066			8080206
LA0111678	5093	Ssx Lc-Southern S		50570	Southern Scrap Xpress Recyclin			
LA0083283	4952	St Charles Raintree Cove HOA						8080206
LA0006246	2092	Steen's Fish Co Inc					20	8080206
LA0108286	4922	Stingray Pipeline C-Compressor		Cameron	Stingray Pipeline Co	Ditch--Marsh--Old East Bayou		
LA0006271	4941	Sulphur City Of					340	8080206
LA0067083	4952	Sulphur City Of-WWTP	6	Sulphur	City Of Sulphur-WWTP	Calcasieu River		8080206
LAL067083	4952	Sulphur City Of-WWTP	6			Calcasieu River		8080206
LAG830178	7542	Sulphur One Stop		Sulphur	Sulphur One Stop			
LA0088048	4922	Superior Off Ppln Co-Cameron						
LA0109932	5171	Talens Marine & Fue-Talens Bul		Lake Charles	Talens Marine & Fuel Inc.	Devils Elbow-Calcasieu River		8080206
LA0001538	1321	Taylor Energy Company__Huffman						

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0070785	4922	Tennessee Gas Pipeline Co						
LA0000221	4922	Tennessee Gas Pipeline Co-Lafo						
LA0092738	4922	Tennessee Gas Ppln-Kinder To G						
LA0092266	4922	Tennessee Gas Ppln-Station 821						8080206
LA0092258	4922	Tennessee Gas Ppln-Stationd507						
LAU009234		Tesoro - Cameron West		Cameron	Tesoro - Cameron West	Calcasieu River		
LA0065161	2819	Tetra Technologies - Westlake		Westlake	Tetra Chemicals-Westlake	Bayou Verdine-Calcasieu River		8080206
LA0105376	7542	Texaco Huber One Stop		Moss Bluff	Huber Oil Of La Inc.	Moss Blu Bay		
LA0048569	1321	Texaco Inc-Grand Lake Fld Salt						
LA0097756	3441	Texas Southern Industries Inc		Cameron	Texas Southern Industries Inc.	Cut Into Calcasieu Lake		8090302
LA0063754	4449	Thrift Ship Bldg&Repair In-Car						
LA0105449	9999	Tommasi Brothers-Lake Charles		Lake Charles	Tommasi Brothers Inc	Black Bayou		
LA0067237	4922	Transco Exploration Co-Cameron						
LA0056162	1321	Transcontinental Gas Ppln						
LA0106682	5171	Transit Aviation Of Lk Charles		Lake Charles	Transit Aviation Of Lake Chars	Coulee Hippolyte		8080206
LA0057347	5149	Trosclair Canning Co Inc						
LA0055522	4491	Truckline Lng Co-Lake Charles		Lake Charles	Trienkline L N G Lake Charles	Devil's Elbow Ic-Calcasieu River		8080206
LA0053031	5171	Us Dept Of Energy-W Hackberr		Hackberry	Us Dept Of Energy	Ditch-Black Lake/Calcasieu River		8080206
LA0041475	971	Usdibsfw-Sabine National Wildl		Hackberry	U.S. Dept Of The Interior	Headqtrs Canal-West Cove Calc.L	80	8080206
LA0077968	4922	USDOE Strategic Petro Reserve		2 Miles Se Of Carlyss	USDOE Spr Lake Charle Meter			8080206
LA0001341	1321	Vastar Resources Inc.						
LAU009403		Vastar Resources Inc.		Cameron	Vastar Resources Inc.	Unnamed Ditch To Calcasieu Pass		
LA0079537	1381	Vinson & Manning Cons & Rental						
LA0063568	1321	Warren Energy - Baracuda Plant						
LA0050482	1321	Warren Energy - Stingray Plant						
LA0054143	8412	Warren Ngl - Hackberry						
LAU009224		Webb Automotive		Lake Charles	Webb Automotive			
LA0052710	6552	West Fork Villas Subdivision-W						
LA0113182	1381	West Hackberry Field		Hackberry	West Hackberry Field	Local To Calcasieu Ship Channel		
LA0082511	2869	Westlake Petrochemicals -		Lake Charles	Westlake Polymers Corp-La	Calcasieu River		8080206
LA0103004	2821	Westlake Polymers - Sulphur		Sulphur	Westlake Polymers	Calcasieu River & Indian Marais		8080206

Table E-15. Available Data for Dischargers in Calcasieu and Cameron Parishes that Discharge or May Discharge to the Calcasieu Estuary

NPDES No.	SIC	Facility Name	Flow (mgd)	City	Location Name	Receiving Water	Segment	HUC
LA0082627	2869	Westlake Polymers Corp						
LA0071382	2821	Westlake Polymers-Lake Charles		Lake Charles	Westlake Polymers-Lake Charles	Bayou D'Inde		8080206
LA0087157	2869	Westlake Styrene Corp-Lake Cha		Lake Charles	Westlake Styrene Corp	Calcasieu River		8080206
LA0089362	4226	Westlake Styrene-Lake Charles		Lake Charles	Westlake Styrene-Lake Charles	Calcasieu Ship Channel		8080206
LA0099791	2869	Westlake Vinyl Corporation		Sulphur	Westlake Edc Manufacturing Fac	Calcasieu River		8080206
LA0105155	7359	W-H Holdings Inc.-WSI Indust		Sulphur	W-H Holdings Inc.	Bayou D'Inde		8080206
LAU003513		Williams Field Services		Cameron	Williams Field Services			
LA0068659	6515	Windmill Ii Mobile Home Park-B						
LA0001333	2819	WR Grace & Co-Davison Ch		Carlyss	WR Grace & Co	Young's Bayou-Calcasieu River		8080206

Appendix F

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0071382**
Facility Name: **Westlake Polymers LP/Poly I & II Polyethylene Production Facility**
Previous Critical Dilution: **5.9% (WET limit)** Proposed Critical Dilution: **6% (WET limit)**
Date of Review: **03/18/05, Revised 4/19/06** Name of Reviewer: **Kim Gunderson**

Recommended Frequency by Species:

***Menidia beryllina* (Inland Silverside minnow):** **Once/Quarter**[1]
***Mysidopsis bahia* (Mysid shrimp):** **Once/Quarter**[1]

Recommended Dilution Series: **3%, 4%, 5%, 6%, and 8%**

Number of Tests Performed during previous 5 years by Species:

***Cyprinodon variegatus* (Sheepshead minnow):** **19**
***Mysidopsis bahia* (Mysid shrimp):** **19**

Number of Failed Tests during previous 5 years by Species:

***Cyprinodon variegatus* (Sheepshead minnow):** **No failed tests in the last 5 years**
***Mysidopsis bahia* (Mysid shrimp):** **No failed tests in the last 5 years**

Failed Test Dates during previous 5 years by Species:

***Cyprinodon variegatus* (Sheepshead minnow):** **No failed tests in the last 5 years**
***Mysidopsis bahia* (Mysid shrimp):** **No failed tests in the last 5 years**

Previous TRE Activities:

Westlake Polymers LP began implementing a TRE in November, 1989. Information does not exist identifying a toxicant during the TRE process. Due to the non-identification of a toxicant, a WET limit of 12% effluent concentration was contained as an effluent characteristic in NPDES permit LA0071382, effective November 2, 1992, and LWDPS permit WP 1547, effective September 17, 1994. A WET limit was continued in subsequent renewals of the permit.

[1] If there are no lethal or sub-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 *Menidia beryllina*) and not less than twice per year for the more sensitive species (usually *Mysidopsis bahia*). Upon expiration of the permit, the monitoring frequency for both species shall revert to once per quarter until the permit is re-issued.

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

Westlake Polymers LP owns and operates a low density polyethylene production facility in Sulphur, Calcasieu Parish, Louisiana. LPDES Permit LA0071382, effective April 1, 2000, contained marine chronic biomonitoring as an effluent characteristic of Outfall 007 and Outfall 010. The effluent series consisted of 2.5%, 3.3%, 4.4%, 5.9%, and 7.9% concentrations, with 5.9% being defined as the critical dilution and/or WET limit. Testing was to be performed once every quarter for the *Cyprinodon variegates* and *Mysidopsis bahia*.

A Total Maximum Daily Load (TMDL) has been developed for the receiving stream, Bayou D'Inde, which recommends that all majors and significant minor dischargers to Bayou D'Inde test effluents for chronic toxicity at least quarterly for the term of the permit to demonstrate that unmonitored pollutants or the combination of monitored and/or unmonitored pollutants are not causing instream toxicity.

It is recommended that marine chronic biomonitoring with a WET limit continue to be an effluent characteristic of Outfall 007 (discharge of 0.6783 MGD of treated process wastewater, process and nonprocess area stormwater, once-through non-contact cooling water, cooling tower blowdown, steam production, boiler blowdown, and general facility washwater) and Outfall 010 (discharge of 0.6669 MGD of treated process wastewater, process and nonprocess area stormwater, once-through non-contact cooling water, cooling tower blowdown, boiler blowdown, and general facility washwater) in LA0071382. Samples will be taken from the flow-weighted composite of Outfalls 007 and 010. The effluent dilution series shall be 3%, 4%, 5%, 6%, and 8% concentrations, with 6% being defined as the critical dilution and/or WET limit. The recommended biomonitoring frequency shall be once per quarter for *Mysidopsis bahia* and *Menidia beryllina*. The Permittee has passed all *Cyprinodon variegatus* and *Mysidopsis bahia* survival and sub-lethal tests at the 5.9% effluent concentration for the previous five years. Therefore, consistent 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), LDEQ recommends that this facility be eligible to receive a frequency reduction, provided the following conditions are met:

> **If there are no significant lethal or sub-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 (*Mysidopsis bahia*) and not less than once per year for the less sensitive species (*Menidia beryllina*) 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.**

Additional monitoring shall be conducted upon the usage of chlorine or any biofouling agent(s).

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.