

**AUTHORIZATION TO DISCHARGE WASTEWATER UNDER  
THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND  
THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT**

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. 1251 et seq.),

Great Lakes Chemical Corporation - Central Plant  
P.O. Box 7020  
El Dorado, AR 71731-7020

is authorized to discharge from a facility located at the west side of Hwy. 15, approximately 2 miles south of U.S. Hwy. 82 at 2226 Haynesville Highway (Hwy. 15 South), in Section 1, Township 18 South, Range 16 West in Union County, Arkansas.

Latitude: 33° 10' 29"; Longitude: 92° 42' 40"

to receiving waters named:

Outfall 001: Bayou de Loutre in Segment 2D of the Ouachita River Basin.

Outfall 002: Unnamed tributary of Bayou de Loutre, thence to Bayou de Loutre in Segment 2D of the Ouachita River Basin.

Outfall 003: Unnamed tributary of Little Cornie Bayou, thence to Little Cornie Bayou in Segment 2E of the Ouachita River Basin.

Outfall 004: Unnamed tributary of Bayou de Loutre, thence to Bayou de Loutre in Segment 2D of the Ouachita River Basin.

Outfall 010: Via the joint pipeline to the Ouachita River, approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam at Latitude: 33° 17' 31"; Longitude: 92° 28' 14" in Segment 2D of the Ouachita River Basin.

The monitoring outfalls are located at the following coordinates:

Outfall 001: Latitude: 33° 11' 12"; Longitude: 92° 40' 58"

Outfall 002: Latitude: 33° 11' 02"; Longitude: 92° 42' 03"

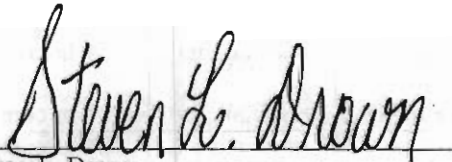
Outfall 003: Latitude: 33° 10' 56"; Longitude: 92° 43' 14"

Outfall 004: Latitude: 33° 11' 00"; Longitude: 92° 42' 02"

Outfall 010: Latitude: 33° 10' 29"; Longitude: 92° 42' 40"

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

Original Issue Date:	December 31, 2003
Original Effective Date:	January 1, 2004
Modification Issue Date:	July 11, 2008
Modification Effective Date:	August 1, 2008
Expiration Date:	December 31, 2008.



Steven L. Drown  
Chief, Water Division  
Arkansas Department of Environmental Quality

**PART I  
PERMIT REQUIREMENTS**

**SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS:** OUTFALL 001 - sanitary wastewater, roof drains, non-contact cooling water, boiler blowdown, air conditioning drainage, reactor jacket water, cooling tower blowdown, steam condensate, and stormwater runoff.

During the period beginning on effective date and lasting until date of expiration, the permittee is authorized to discharge from outfall serial number 001 - sanitary wastewater, roof drains, non-contact cooling water, boiler blowdown, air conditioning drainage, reactor jacket water, cooling tower blowdown, steam condensate, and stormwater runoff. Such discharges shall be limited and monitored by the permittee as specified below:

<u><b>Effluent Characteristics</b></u>	<u><b>Discharge Limitations</b></u>				<u><b>Monitoring Requirements</b></u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	continuous	estimated
Chloride	N/A	N/A	Report	Report	once/month	24-hr composite
Total Organic Carbon	N/A	N/A	N/A	10	once/month	grab
Total Residual Chlorine	N/A	N/A	N/A	0.1	once/month	grab
Total Purgeable Halocarbons <sup>2</sup>	N/A	N/A	N/A	Report	once/quarter	24-hr composite
Total Purgeable Aromatics <sup>3</sup>	N/A	N/A	N/A	Report	once/quarter	24-hr composite
Temperature	N/A	N/A	96°F (inst. max.)		once/day	grab
Turbidity	N/A	N/A	N/A	21 NTU	once/month	grab
Sulfate	N/A	N/A	90	135	once/month	24-hr composite
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	five/week	grab
<b>Whole Effluent Lethality</b> (7-day NOEC) <sup>4, 5, 6</sup> 22414 (June – Nov.) (7-day NOEC) <sup>4, 5, 6</sup> 22414 (Dec. – May)	<u>Daily Average</u> <u>Minimum</u> not < 100% not < 60%		<u>7-day Minimum</u> not < 100% not < 60%		once/quarter once/quarter	24-hr composite 24-hr composite
<b><u>Pimephales promelas (Chronic)<sup>5</sup></u></b> Pass/Fail Growth (7-day NOEC) TGP6C Pass/Fail Lethality (7-day NOEC) TLP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C			<u>7-day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<b><u>Ceriodaphnia dubia (Chronic)<sup>5</sup></u></b> Pass/Fail Reproduction (7-day NOEC) TGP3B Pass/Fail Lethality (7-day NOEC) TLP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B Reproduction(7-day NOEC) TPP3B			<u>7-day Average</u> Report (Pass=0/Fail=1)  Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter  once/quarter once/quarter once/quarter	24-hr composite  24-hr composite 24-hr composite 24-hr composite

1 Report monthly average and daily maximum as MGD.

2 EPA Method 624

3 EPA Method 602 or 624

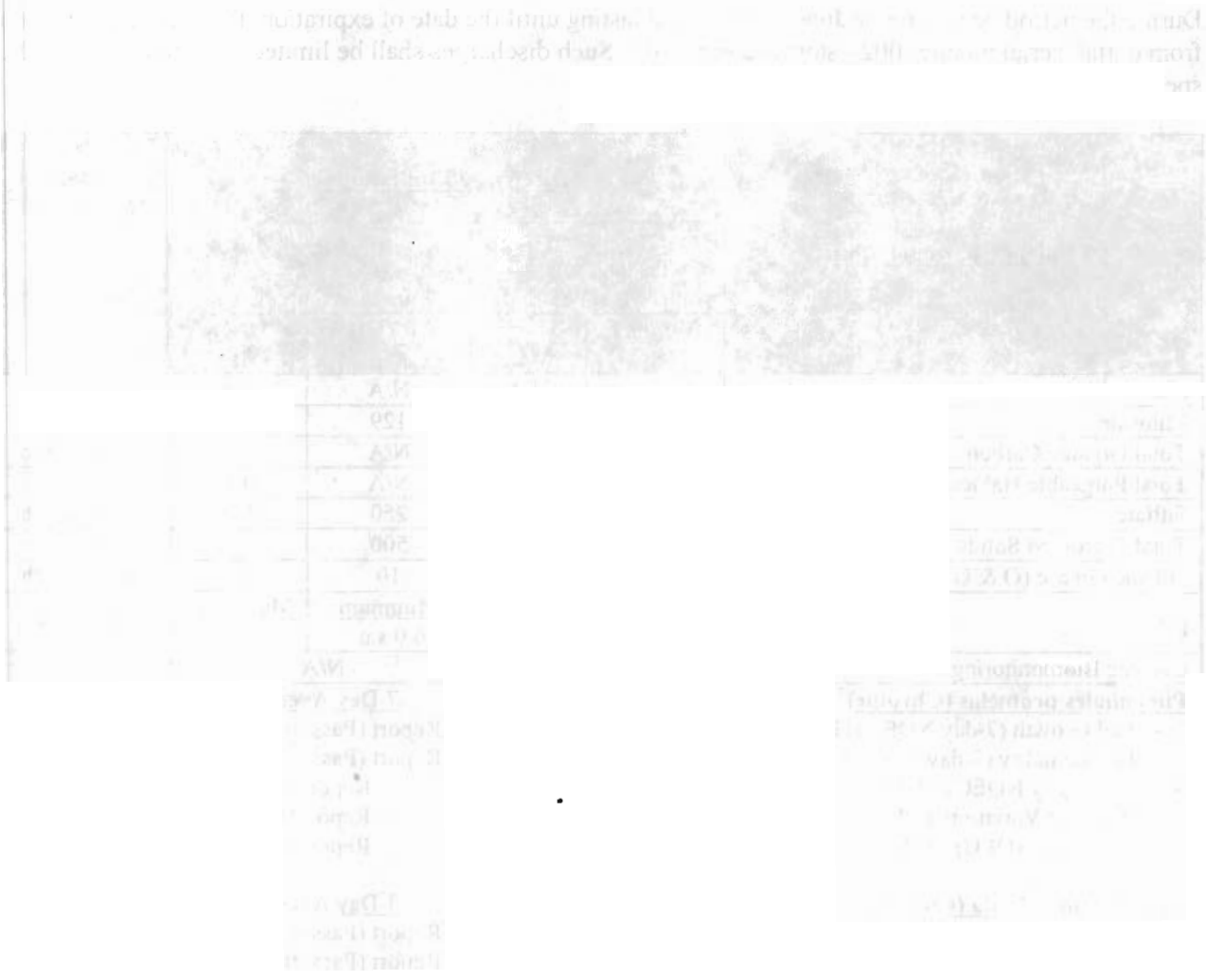
4 The NOEC (No Observed Lethal Effect Concentration) is defined as the greatest effluent dilution at and below which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.

5 See Condition No. 11 of Part III.

6 The permittee must conduct one (1) test per quarter and two (2) in each of the time frames specified for a total of four (4) tests per calendar year.

There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall 001, following the commingling of all wastewater discharged through this outfall.



**PART I  
PERMIT REQUIREMENTS**

**SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 - stormwater runoff and wastewaters from Outfalls 001 and 002 at Great Lakes Chemical Company's South Plant (NPDES Permit No. AR0000680)**

During the period beginning on June 1, 2007, and lasting until the date of expiration, the permittee is authorized to discharge from outfall serial number 002 - stormwater runoff. Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency <sup>2</sup>	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	once/day	estimate
Chloride	N/A	N/A	129	193.5	once/month	grab
Total Organic Carbon	N/A	N/A	N/A	35	once/month	grab
Total Purgeable Halocarbons <sup>3</sup>	N/A	N/A	N/A	0.1	once/quarter	grab
Sulfate	N/A	N/A	250	375	once/month	grab
Total Dissolved Solids	N/A	N/A	500	750	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic Biomonitoring <sup>4</sup>	N/A		N/A		N/A	N/A
<b><u>Pimephales promelas (Chronic)<sup>4</sup></u></b> Pass/Fail Growth (7-day NOEC) TLP6C Pass/Fail Lethality (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C			<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<b><u>Ceriodaphnia dubia (Chronic)<sup>4</sup></u></b> Pass/Fail Growth (7-day NOEC) TLP3B Pass/Fail Lethality (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B Reproduction (7-day NOEC) TPP3B			<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite

- 1 Report monthly average and daily maximum as MGD.
- 2 When discharging, samples shall be taken during the first four hours of the stormwater discharge.
- 3 EPA Method 624.
- 4 See Condition No. 12 of Part III (Biomonitoring Requirements).

There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall 002.

**PART I  
PERMIT REQUIREMENTS**

**SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 003 - stormwater runoff, roof drains, non-contact cooling water, freeze protection, boiler blow down, air conditioner drainage, reactor jacket water, cooling tower blow down, and steam condensate**

During the period beginning on June 1, 2007, and lasting until the date of expiration, the permittee is authorized to discharge from outfall serial number 003 - stormwater runoff, roof drains, non-contact cooling water, freeze protection, boiler blow down, air conditioner drainage, reactor jacket water, cooling tower blow down, and steam condensate. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations				Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency <sup>2</sup>	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	once/day	estimate
Chloride	N/A	N/A	31	46.5	once/month	grab
Total Organic Carbon	N/A	N/A	N/A	35	once/month	grab
Total Purgeable Halocarbons <sup>3</sup>	N/A	N/A	N/A	0.1	once/quarter	grab
Sulfate	N/A	N/A	66	99	once/month	grab
Total Dissolved Solids	N/A	N/A	201	302	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
Temperature	N/A	N/A	86 °F, inst. max.		once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic Biomonitoring <sup>4,5</sup>	N/A		N/A		N/A	N/A
<b><u>Pimephales promelas (Chronic)<sup>4</sup></u></b> Pass/Fail Growth (7-day NOEC) TLP6C Pass/Fail Lethality (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C			7-Day Average Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite
<b><u>Ceriodaphnia dubia (Chronic)<sup>4</sup></u></b> Pass/Fail Growth (7-day NOEC) TLP3B Pass/Fail Lethality (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B Reproduction (7-day NOEC) TPP3B			7-Day Average Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite

- 1 Report monthly average and daily maximum as MGD.
- 2 When discharging, samples shall be taken during the first four hours of the stormwater discharge.
- 3 EPA Method 624.
- 4 See Condition No. 112 of Part III.
- 5 The permittee must conduct one (1) test per quarter and two (2) in each of the time frames for a total of four (4) tests per calendar year. The time frames are December thru May and June thru November. This will result in the permittee conducting two tests at each of the critical dilutions.

There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall 003, after all wastewater discharged through this outfall has been commingled.

**PART I  
PERMIT REQUIREMENTS**

**SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 004 - stormwater runoff**

During the period beginning on June 1, 2007, and lasting until the date of expiration, the permittee is authorized to discharge from outfall serial number 004 - stormwater runoff. Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency <sup>2</sup>	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	once/day	estimate
Chloride	N/A	N/A	98	147	once/month	grab
Total Organic Carbon	N/A	N/A	N/A	35	once/month	grab
Total Purgeable Halocarbons <sup>3</sup>	N/A	N/A	N/A	0.1	once/quarter	grab
Sulfate	N/A	N/A	Report	Report	once/month	grab
Total Dissolved Solids	N/A	N/A	500	750	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab

1 Report monthly average and daily maximum as MGD.

2 When discharging, samples shall be taken during the first four hours of the stormwater discharge.

3 EPA Method 624.

There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall 004.

**PART I  
PERMIT REQUIREMENTS**

**SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 010 – Combination of Outfalls 001, 002, 003, and 004 to the joint pipeline.**

During the period beginning on the effective date of permit and lasting until the date of expiration, the permittee is authorized to discharge from outfall serial number 010. Such discharges shall be limited and monitored by the permittee as specified below:

<b>Effluent Characteristics</b>	<b>Discharge Limitations</b>				<b>Monitoring Requirements</b>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow <sup>1</sup>	N/A	N/A	Report	3	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	50	75	N/A	N/A	once/day <sup>4</sup>	24-hr composite
Total Suspended Solids (TSS)	750.6	1125.9	N/A	N/A	once/day <sup>4</sup>	24-hr composite
Ammonia – Nitrogen (NH3-N)	12.5	18.7	N/A	N/A	once/day <sup>4</sup>	24-hr composite
Oil and Grease (O & G)	250.2	375.3	N/A	N/A	two/week	grab
Dissolved Oxygen (DO) <sup>5</sup>	N/A	N/A	Report minimum		once/day <sup>4</sup>	grab
Total Dissolved Solids (TDS)	N/A	N/A	Report	Report	two/week	grab
Sulfates	N/A	N/A	Report	Report	two/week	grab
Chlorides	N/A	N/A	Report	Report	two/week	grab
Mercury, Total Recoverable <sup>2</sup>	N/A	N/A	N/A	<0.2 µg/l	once/month	24-hr composite
Cadmium, Total Recoverable <sup>2</sup>	0.33	0.67	N/A	N/A	once/month	24-hr composite
Hexavalent Chromium, Dissolved <sup>2</sup>	1.44	2.90	N/A	N/A	once/month	24-hr composite
Copper, Total Recoverable <sup>2</sup>	1.23	2.48	N/A	N/A	once/month	24-hr composite
Lead, Total Recoverable <sup>2</sup>	0.60	1.20	N/A	N/A	once/month	24-hr composite
Nickel, Total Recoverable <sup>2</sup>	21.35	42.83	N/A	N/A	once/month	24-hr composite
Selenium, Total Recoverable <sup>2</sup>	0.99	1.98	N/A	N/A	once/month	24-hr composite
Silver, Total Recoverable <sup>2</sup>	0.12	0.23	N/A	N/A	once/month	24-hr composite
Zinc, Total Recoverable <sup>2</sup>	11.03	22.13	N/A	N/A	once/month	24-hr composite
Chromium (III), Total Recoverable <sup>2</sup>	59.27	118.93	N/A	N/A	once/month	24-hr composite
Cyanide, Total Recoverable <sup>2</sup>	1.03	2.06	N/A	N/A	once/month	grab
Total Phosphorus	N/A	N/A	Report	Report	once/day <sup>4</sup>	grab
Fecal Coliform Bacteria (FCB)			(colonies/100ml)			
	N/A	N/A	Report	Report	once/day <sup>4</sup>	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic Biomonitoring <sup>3</sup>	N/A		N/A		N/A	N/A
<b>Pimephales promelas (Chronic)<sup>3</sup></b> Pass/Fail Growth (7-day NOEC) TLP6C Pass/Fail Lethality (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C			<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<b>Ceriodaphnia dubia (Chronic)<sup>3</sup></b> Pass/Fail Growth (7-day NOEC) TLP3B Pass/Fail Lethality (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B			<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report %		once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite



<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Reproduction (7-day NOEC) TPP3B			Report %			

- 1 Report monthly average and daily maximum as MGD.
- 2 See Condition No. 3 of Part III (Metals Condition).
- 3 See Condition No. 12 of Part III (Biomonitoring Requirements).
- 4 See Condition No. 4 of Part III. (Monitoring Frequency Reduction.)
- 5 See Condition No. 27(b) of Part IV.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall 010 (Latitude: 33° 10' 29"; Longitude: 92° 42' 40"), prior to commingling with any other waters.

# DRAFT

Permit number: AR0001171  
Page 1 of Part IB

## SECTION B. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

### Outfall 001

Compliance is required on the effective date of the permit.

### Outfalls 002 and 003

Compliance is required on the effective date of the permit for all effluent limitations with the exception of chloride, sulfate, and total dissolved solids at Outfalls 002 and 003. Compliance with the interim limitations for chloride, sulfate, and total dissolved solids at Outfalls 002 and 003 and the temperature limit at Outfall 003 is required on the effective date of the permit.

The permittee shall submit progress reports as follows detailing the progress toward attaining the final effluent limitations for chloride, sulfate, and total dissolved solids at Outfalls 002 and 003 and temperature at Outfall 003.

1. One year from the effective date of the permit.
2. Two years from the effective date of the permit.

The permittee shall attain compliance with the final effluent limitations for chloride, sulfate, and total dissolved solids at Outfalls 002 and 003 and temperature at Outfall 003 no later than three years from the effective date of the permit (December 31, 2006).

### Outfall 003

The background flow evaluation required in Other Condition No. 8 in Part III of the permit shall be submitted to the Department no later than three years from the effective date of the permit (December 31, 2006). During the Department's review of this study, the permittee is required to comply with the requirements of the permit.

This study is not required if the permittee routes the water to the joint pipeline for discharge. If the permittee continues to discharge through Outfall 003, this study will be required. If the permittee stops discharging through Outfall 003 and then wishes to resume the discharge at a later date, this study will then be required.

# DRAFT

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## Outfall 004

Compliance is required on the effective date of the permit for all effluent limitations with the exception of chloride and total dissolved solids. Compliance with the interim limitations for chloride and total dissolved solids is required on the effective date of the permit.

The permittee shall submit progress reports as follows detailing the progress toward attaining the final effluent limitations for chloride and total dissolved solids.

1. One year from the effective date of the permit.
2. Two years from the effective date of the permit.

The permittee shall attain compliance with the final effluent limitations for chloride and total dissolved solids at Outfall 004 no later than three years from the effective date of the permit (December 31, 2006).

## Outfall 010

Compliance is required on the effective date of the permit for all effluent limitations.

The permittee must perform a Priority Pollutant Scan within 90 days of the first discharge to the joint pipeline.

## PART II STANDARD CONDITIONS

### SECTION A – GENERAL CONDITIONS

#### 1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

#### 2. Penalties for Violations of Permit Conditions

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than ten thousand dollars (\$10,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars (\$10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

#### 3. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this permit; or
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
- c. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- d. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
- e. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by condition II A.10 herein.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

**4. Toxic Pollutants**

Notwithstanding Part II. A.3., if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Regulation No. 2, as amended, (regulation establishing water quality standards for surface waters of the State of Arkansas) or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under Regulation No. 2 (Arkansas Water Quality Standards), as amended, or Section 307 (a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

**5. Civil and Criminal Liability**

Except as provided in permit conditions on "Bypassing" (Part II.B.4.a.), and "Upsets" (Part II.B.5.b), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statutes or regulations which defeats the regulatory purposes of the permit may be subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

**6. Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act.

**7. State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

**8. Property Rights**

The issuance of this permit does not convey any property rights of any sort, or any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

**9. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**10. Permit Fees**

The permittee shall comply with all applicable permit fee requirements for wastewater discharge permits as described in APCEC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR 122.64 and 124.5 (d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

**SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS**

**1. Proper Operation and Maintenance**

- a. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
- b. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

**2. Need to Halt or Reduce not a Defense**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for

example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

**3. Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment, or the water receiving the discharge.

**4. Bypass of Treatment Facilities**

**a. Bypass not exceeding limitation.**

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.B 4.b.and 4 c.

**b. Notice**

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in part II.D.6 (24-hour notice).

**c. Prohibition of bypass**

- (1) Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:
  - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance; and
  - (c) The permittee submitted notices as required by Part II.B.4.b.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part II.B.4.c(1).

**5. Upset Conditions**

- a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology base permit effluent limitations if the requirements of

Part II.B.5.b of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

- b. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (1) An upset occurred and that the permittee can identify the specific cause(s) of the upset.
  - (2) The permitted facility was at the time being properly operated.
  - (3) The permittee submitted notice of the upset as required by Part II.D.6.: and
  - (4) The permittee complied with any remedial measures required by Part II.B.3.
- c. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### 6. **Removed Substances**

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State. Written approval must be obtained from the ADEQ for land application only.

#### 7. **Power Failure**

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

### SECTION C - MONITORING AND RECORDS

#### 1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharges shall be monitored.

#### 2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/-



10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to insure accuracy of measurements and shall insure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. **Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars (\$10,000) or by both such fine and imprisonment.

5. **Reporting of Monitoring Results**

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1). Permittees are required to use preprinted DMR forms provided by ADEQ, unless specific written authorization to use other reporting forms is obtained from ADEQ. Monitoring results obtained during the previous calendar month shall be summarized and reported on a DMR form postmarked no later than the 25<sup>th</sup> day of the month, following the completed reporting period to begin on the effective date of the permit. Duplicate copies of DMR's signed and certified as required by Part II.d.11 and all other reports required by Part II.D. (Reporting Requirements), shall be submitted to the Director at the following address:

NPDES Enforcement Section  
Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

If permittee uses outside laboratory facilities for sampling and/or analysis, the name and address of the contract laboratory shall be included on the DMR.

6. **Additional Monitoring by the Permittee**

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. **Retention of Records**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

8. **Record Contents**

Records and monitoring information shall include:

- a. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
- b. The individuals(s) who performed the sampling or measurements;
- c. The date(s) analyses were formed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The measurements and results of such analyses.

9. **Inspection and Entry**

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
- d. Sample, inspect or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

## SECTION D – REPORTING REQUIREMENTS

### 1. Planned Changes

The permittee shall give notice and provide plans and specification to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility. Notice is required only when:

#### *For Industrial Dischargers*

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Part 122.29(b).
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40CFR Part 122.42(a)(1).

#### *For POTW Dischargers:*

Any change in the facility discharge (including the introduction of any new source or significant discharge or significant changes in the quantity or quality of existing discharges of pollutants) must be reported to the permitting authority. In no case are any new connections, increased flows, or significant changes in influent quality permitted that cause violation of the effluent limitations specified herein.

### 2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

### 3. Transfers

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

### 4. Monitoring Reports

Monitoring results shall be reported at the intervals and in the form specified in Part II.C.5. (Reporting). **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. **Compliance Schedule**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. **Twenty-four Hour Report**

- a. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:
  - (1) a description of the noncompliance and its cause;
  - (2) the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
  - (3) steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.
- b. The following shall be included as information which must be reported within 24 hours:
  - (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
  - (2) Any upset which exceeds any effluent limitation in the permit and
  - (3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part III of the permit to be reported within 24 hours.
- c. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

7. **Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Part II.D.4,5 and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part II.D.6.

8. **Changes in Discharge of Toxic Substances for Industrial Dischargers**

The permittee shall notify the Director as soon as he/she knows or has reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, in a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(2).

9. **Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner and time frame requested by the Director.

10. **Duty to reapply**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated in APCEC Regulation No. 6.

11. **Signatory Requirements**

All applications, reports or information submitted to the Director shall be signed and certified.

a. All permit applications shall be signed as follows:

- (1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
  - (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
  - (ii) The manager of one or more manufacturing, production, or operation facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- (2) For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or
- (3) For a municipality, State, Federal, or other public agency; by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
  - (i) The chief executive officer of the agency, or

- (ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- b. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - (1) The authorization is made in writing by a person described above.
  - (2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
  - (3) The written authorization is submitted to the Director.
- c. Certification. Any person signing a document under this section shall make the following certification:

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

## 12. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2 and Regulation 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits and effluent data shall not be considered confidential.

## 13. Penalties for Falsification of Reports

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part II.A.2. and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

**PART III  
OTHER CONDITIONS**

1. All pollutants listed in Part IA (i.e., Outfall 010) of this permit must be sampled concurrently with the sampling requirements for Outfall 010 at Lion Oil Company (AR0000647), Outfall 010 at El Dorado Chemical Company (AR0000752), Outfalls 010 North and 010 South at the City of El Dorado (AR0049743), and Outfall 010R for the joint pipeline (AR0050296). For the purposes of this permit, concurrently shall mean that the samples are taken within a two-hour period.
2. The permittee must notify the Department a minimum of 48 hours *prior* to the first discharge to the joint pipeline. The permittee shall notify the Department within 24 hours of any emergency or maintenance event that results in diverting wastewater from Outfall 010 to another permitted outfall. For non-emergency and non-maintenance events that may result in diverting wastewater from Outfall 010 to another permitted outfall, the permittee must provide notice and an explanation of the anticipated diversion to the Department at least two weeks in advance of any such event. The Department may, at its discretion, condition the diversion of the waste water to another permitted outfall as may be reasonably necessary to protect human health and the environment.
3. If any individual analytical test results is less than the minimum quantification level (MQL) listed below, a value of zero (0) may be used for that individual result for the Discharge Monitoring report (DMR) calculations and reporting requirements.

Pollutant	EPA Method	MQL ( $\mu\text{g/l}$ )
Mercury, Total Recoverable	245.7	0.005
Cadmium, Total Recoverable	213.2	1
Chromium (III), Total Recoverable	200.7	10
Hexavalent Chromium, Dissolved	218.4	10
Copper, Total Recoverable	220.2	10
Lead, Total Recoverable	239.2	5
Nickel, Total Recoverable	200.7	40
Selenium, Total Recoverable	270.2	5
Silver, Total Recoverable	272.2	2
Zinc, Total Recoverable	200.7	20
Cyanide, Total Recoverable	335.2	20

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. For any pollutant for which the permittee determines a site specific MDL, the permittee shall send to ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a site specific MDL was correctly calculated. A site specific minimum quantification level (MQL) shall be determined in accordance with the following calculation:

$$\text{MQL} = 3.3 \times \text{MDL}$$

Upon written approval by the NPDES Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

Metals testing must take place on the same day that the chronic biomonitoring is performed.

4. After 365 consecutive data points have been collected at Outfall 010, the permittee may request (in writing) reductions in monitoring frequencies for those pollutants which have monitoring requirements in excess of three times per week except for pH and flow. The internal outfall monitoring frequency will be reduced to three times per week provided that the permittees submit certification that following conditions have been met:
  - A. Condition #1 above of Part III; and
  - B. No demonstrated violations of the permit limits during this time period.
5. The permittee is required to submit a monthly DMR for each outfall contained in this permit even if that outfall is not in use because the effluent is being routed to the joint pipeline.
6. In accordance with 40 CFR Parts 122.62 (a) (2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge (s) to water body, or a Total Maximum Daily Load (TMDL) is established or revised for the water body that were not available at the time of permit issuance that would have justified the application of different permit conditions at the time of permit issuance.
7. Discharge of process wastewater into waters of the state is prohibited, except residual brine and depleted liquor may be returned to the body of water from which the process brine solution was originally withdrawn. Process water is defined in 40 CFR 122.2 as "any water which, during the manufacturing or processing, comes into direct contact with



or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.”

8. In accordance with 40 CFR Part 122.62 (a) (2), the permit may be modified if new information is received that was not available at the time of permit issuance that would have justified the application of different permit conditions at the time of permit issuance.
9. Active landfills may be considered “process areas” for the purposes of this permit.
10. **Storm Water Pollution Prevention Plan Requirements**

**A. General**

- (1) If your facility already has a storm water pollution prevention plan (SWPPP) in place, then you shall continue the implementation of this SWPPP. If you do not have a SWPPP, then you shall prepare a SWPPP for your facility within 60 days of the effective starting date of this permit. Your SWPPP must be prepared in accordance with good engineering practices. Your SWPPP must:
  - (a) Identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from your facility;
  - (b) Describe and ensure implementation of practices which you will use to reduce the pollutants in storm water discharges from the facility; and
  - (c) Assure compliance with the terms and conditions of this permit.

**B. Contents of Plan**

**(1) Pollution Prevention Team**

- (a) You must identify the staff individual(s) (by name or title) that comprise the facility’s storm water Pollution Prevention Team. Your Pollution Prevention Team is responsible for assisting the facility/plant manager in developing, implementing, maintaining and revising the facility’s SWPPP. Responsibilities of each staff individual on the team must be listed.

**(2) Site Description**

- (a) Your SWPPP must include the following:

- i. *Activities at Facility.* Description of the nature of the industrial activity(ies) at your facility;
- ii. *General Location Map.* A general location map (e.g., U.S.G.S. quadrangle, or other map) with enough detail to identify the location of your facility and the receiving waters within one mile of the facility;
- iii. A legible site map identifying the following:
  - (a) Directions of storm water flow (e.g., use arrows to show which ways storm water will flow);
  - (b) Locations of all existing structural BMPs;
  - (c) Locations of all surface water bodies;
  - (d) Locations of potential pollutant sources identified under Section B.(4)(a) of this Part and where significant materials are exposed to precipitation;
  - (e) Location where major spills or leaks identified under Section B(5) of this Part have occurred;
  - (f) Locations of the following activities where such activities are exposed to precipitation: fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for the treatment, storage or disposal of wastes, and liquid storage tanks;
  - (g) Locations of storm water outfalls and an approximate outline of the area draining to each outfall;
  - (h) Location and description of non-storm water discharges;
  - (i) Locations of the following activities where such activities are exposed to precipitation: processing and storage areas; access roads, rail cars and tracks; the location of transfer of substance in bulk; and machinery;

- (j) Location and source of runoff from adjacent property containing significant quantities of pollutants of concern to the facility (an evaluation of how the quality of the runoff impacts your storm water discharges may be included).

**(3) Receiving Waters and Wetlands**

- (a) You must provide the name of the nearest receiving water(s), including intermittent streams, dry sloughs, arroyos and the arial extent and description of wetland or other special aquatic sites that may receive discharges from your facility.

**(4) Summary of Potential Pollutant Source**

- (a) You must identify each separate area at your facility where industrial materials or activities are exposed to storm water. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. For each separate area identified, the description must include:
  - i. *Activities in Area.* A list of the activities (e.g., material storage, equipment fueling and cleaning, cutting steel beams); and
  - ii. *Pollutants.* A list of the associated pollutant(s) or pollutant parameter(s) (e.g., crankcase oil, iron, biochemical oxygen demand, pH, etc.) for each activity. The pollutant list must include all significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of three (3) years before being covered under this permit and the present.

**(5) Spills and Leaks**

- (a) You must clearly identify areas where potential spills and leaks, which can contribute pollutants to storm water discharges, can occur, and their accompanying drainage points. For areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility to be covered under this permit, you

must provide a list of significant spills and leaks of toxic or hazardous pollutants that occurred during the three (3) year period prior to the starting date of this permit. Your list must be updated if significant spills or leaks occur in exposed areas of your facility during the time you are covered by the permit.

- (b) Significant spills and leaks include, but are not limited to releases of oil or hazardous substances in excess of quantities that are reportable under CWA 311 (see 40 CFR 110.10 AND 40 CFR 117.21) or section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Significant spills may also include releases of oil or hazardous substances that are not in excess of reporting requirements.

(6) **Sampling Data**

- (a) You must provide a summary of existing storm water discharge sampling data taken at your facility. All storm water sampling data collected during the term of this permit must also be summarized and included in this part of the SWPPP.

(7) **Storm Water Controls**

- (a) Description of Existing and Planned BMPs. Describe the type and location of existing non-structural and structural best management practices (BMPs) selected for each of the areas where industrial materials or activities are exposed to storm water. All the areas identified in Section B(4)(a) of this Part should have a BMP(s) identified for the areas discharges. For areas where BMPs are not currently in place, describe appropriate BMPs that you will use to control pollutants in storm water discharges. Selection of BMPs should take into consideration:
  - i. The quantity and nature of the pollutants, and their potential to impact the water quality of receiving waters;
  - ii. Opportunities to combine the dual purposes of water quality protection and local flood control benefits (including physical impacts of high flows on streams - e.g., bank erosion, impairment of aquatic habitat, etc.);
  - iii. Opportunities to offset the impact impervious areas of the facility on ground water recharge and base flows in local

streams (taking into account the potential for ground water contamination.)

(b) BMP Types to be Considered. The following types of structural, non-structural, and other BMPs must be considered for implementation at your facility. Describe how each is, or will be, implemented. This requirement may have been fulfilled with area-specific BMPs identified under Section B(7)(a) of this Part, in which case the previous descriptions are sufficient. However, many of the following BMPs may be more generalized or non site-specific and therefore not previously considered. If you determine that any of these BMPs are not appropriate for your facility, you must include an explanation of why they are not appropriate. The BMP examples listed below are not intended to be an exclusive list of BMPs that you may use. You are encouraged to keep abreast of new BMPs or new applications of existing BMPs to find the most cost effective means of permit compliance for your facility. If BMPs are being used or planned at the facility which are not listed here (e.g., replacing a chemical with a less toxic alternative, adopting a new or innovative BMP, etc.), include descriptions of them in this section of the SWPPP.

(c) Non-Structural BMPs

- i. *Good Housekeeping:* You must keep all exposed areas of the facility in a clean, orderly manner where such exposed areas could contribute pollutants to storm water discharges. Common problem areas include: around trash containers, storage areas and loading docks. Measures must also include: a schedule for regular pickup and disposal of garbage and waste materials; routine inspections for leaks and conditions of drums, tanks and containers.
- ii. *Minimizing Exposure:* Where practicable, industrial materials and activities should be protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, or runoff.
- iii. *Preventive Maintenance:* You must have a preventive maintenance program which includes timely inspection and maintenance of storm water management devices, (e.g., cleaning oil/water separators, catch basins) as well as inspecting, testing, maintaining and repairing facility

equipment and systems to avoid breakdowns or failures that may result in discharges of pollutants to surface waters.

- iv. *Spill Prevention and Response Procedures:* You must describe the procedures which will be followed for cleaning up spills or leaks. Those procedures, and necessary spill response equipment, must be made available to those employees that may cause or detect a spill or leak. Where appropriate, you must explain existing or planned material handling procedures, storage requirements, secondary containment, and equipment (e.g., diversion valves), which are intended to minimize spills or leaks at the facility. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable RCRA regulations at 40 CFR Part 264 and 40 CFR Part 265.
- v. *Routine Facility Inspections:* In addition to or as part of the comprehensive site evaluation required under Section G of this Part, you must have qualified facility personnel inspect all areas of the facility where industrial materials or activities are exposed to storm water. The inspections must include an evaluation of existing storm water BMPs. Your SWPPP must identify how often these inspections will be conducted. You must correct any deficiencies you find as soon as practicable, but no later than 14 days from the date of the inspection. You must document in your SWPPP the results of your inspections and the corrective actions you took in response to any deficiencies or opportunities for improvement that you identify.
- vi. *Employee Training:* You must describe the storm water employee training program for the facility. The description should include the topics to be covered, such as spill response, good housekeeping, and material management practices, and must identify periodic dates (e.g., every 6 months during the months of July and January) for such training. You must provide employee training for all employees that work in areas where industrial materials or activities are exposed to storm water, and for employees that are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance people). The employee training should inform them of the components and goals of your SWPPP.

(d) Structural BMPs

- i. *Sediment and Erosion Control*: You must identify the areas at your facility which, due to topography, land disturbance (e.g., construction), or other factors, have a potential for significant soil erosion. You must describe the structural, vegetative, and/or stabilization BMPs that you will be implementing to limit erosion.
- ii. *Management of Runoff*: You must describe the traditional storm water management practices (permanent structural BMPs other than those which control the generation or source(s) of pollutants) that currently exist or that are planned for your facility. These types of BMPs typically are used to divert, infiltrate, reuse, or otherwise reduce pollutants in storm water discharges from the site. Factors to consider when you are selecting appropriate BMPs should include: 1) the industrial materials and activities that are exposed to storm water, and the associated pollutant potential of those materials and activities; and 2) the beneficial and potential detrimental effects on surface water quality, ground water quality, receiving water base flow (dry weather stream flow), and physical integrity of receiving waters. Structural measures should be placed on upland soils, avoiding wetlands and flood plains, if possible. Structural BMPs may require a separate permit under section 404 of the CWA before installation begins.
- iii. *Example BMPs*: BMPs you could use include but are not limited to: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems (which combine several practices).

(e) Other Controls

- i. No solid materials, including floatable debris, may be discharged to waters of the United States, except as authorized by a permit issued under section 404 of the CWA. Off-site vehicle tracking of raw, final, or waste materials or sediments, and the generation of dust must be minimized. Tracking or blowing of raw, final, or waste

materials from areas of no exposure to exposed areas must be minimized. Velocity dissipation devices must be placed at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

**C. Maintenance**

- (1) All BMPs you identify in your SWPPP must be maintained in effective operating condition. If site inspections required by Section B(7)(c)(v) of this Part identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. In the case of non-structural BMPs, the effectiveness of the BMP must be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

**D. Non-Storm Water Discharges**

**(1) Certification of Non-Storm Water Discharges**

- (a) Your SWPPP must include a certification that all discharges (i.e., outfalls) have been tested or evaluated for the presence of non-storm water. The certification must be signed in accordance with Part II Section D.11 of the individual permit, and include:
  - i. The date of any testing and/or evaluation;
  - ii. Identification of potential significant sources of non-storm water at the site;
  - iii. A description of the results of any test and/or evaluation for the presence of non-storm water discharges;
  - iv. A description of the evaluation criteria or testing method used; and
  - v. A list of the outfalls or onsite drainage points that were directly observed during the test.



- vi. If you are unable to provide the certification required (testing for non-storm water discharges), you must notify the Director 180 days after the effective starting date of this permit to be covered by this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification must describe:
  - vii. The reason(s) why certification was not possible;
  - viii. The procedure of any test attempted;
  - ix. The results of such test or other relevant observations; and
  - x. Potential sources of non-storm water discharges to the storm sewer.
- xi. A copy of the notification must be included in the SWPPP at the facility. Non-storm water discharges to waters of the United States which are not authorized by an NPDES permit are unlawful, and must be terminated.

**E. Allowable Non-storm Water Discharges**

- (1) Certain sources of non-storm water are allowable under this permit. In order for these discharges to be allowed, your SWPPP must include:
  - (a) An identification of each allowable non-storm water source;
  - (b) The location where it is likely to be discharged; and
  - (c) Descriptions of appropriate BMPs for each source.
  - (d) Except for flows from fire fighting activities, you must identify in your SWPPP all sources of allowable non-storm water that are discharged under the authority of this permit.
  - (e) If you include mist blown from cooling towers amongst your allowable non-storm water discharges, you must specifically evaluate the potential for the discharges to be contaminated by chemicals used in the cooling tower and determine that the levels of such chemicals in the discharges would not cause or contribute to a violation of an applicable water quality standard after implementation of the BMPs you have selected to control such discharges.

**F. Applicable State or Local Plans**

- (1) Your SWPPP must be consistent (and updated as necessary to remain consistent) with applicable State and/or local storm water, waste disposal, sanitary sewer, or septic system regulations to the extent these apply to your facility and are more stringent than the requirements of this permit.

**G. Comprehensive Site Compliance Evaluation**

**(1) Frequency and Inspectors**

- (a) You must conduct facility inspections at least once a year. The inspections must be done by qualified personnel provided by you. The qualified personnel you use may be either your own employees or outside consultants that you have hired, provided they are knowledgeable and possess the skills to assess conditions at your facility that could impact storm water quality and assess the effectiveness of the BMPs you have chosen to use to control the quality of your storm water discharges. If you decide to conduct more frequent inspections, your SWPPP must specify the frequency of inspections.

**(2) Scope of the Compliance Evaluation**

- (a) Your inspections must include all areas where industrial materials or activities are exposed to storm water, as identified in Section B(4)(a) of this Part, and areas where spills and leaks have occurred within the past 3 years. Inspectors should look for: a) industrial materials, residue, or trash on the ground that could contaminate or be washed away in storm water; b) leaks or spills from industrial equipment, drums, barrels, tanks, or similar containers; c) offsite tracking of industrial materials or sediment where vehicles enter or exit the site; d) tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas; and e) for evidence of, or the potential for, pollutants entering the drainage system. Storm water BMPs identified in your SWPPP must be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they must be inspected to see whether BMPs are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations must be inspected if possible.

(3) **Follow-up Actions**

- (a) Based on the results of the inspections, you must modify your SWPPP as necessary (e.g., show additional controls on the map required by Section B(2)(a)(iii) of this Part and revise the description of controls required by Section B(7)(a) of this Part to include additional or modified BMPs designed to correct the problems identified. You must complete revisions to the SWPPP within 14 calendar days following the inspection. If existing BMPs need to be modified or if additional BMPs are necessary, implementation must be completed before the next anticipated storm event. If implementation before the next anticipated storm event is impracticable, they must be implemented as soon as practicable.

(4) **Compliance Evaluation Report**

- (a) You must insure a report summarizing the scope of the inspection, name(s) of personnel making the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP is completed and retained as part of the SWPPP for at least three years from the date permit coverage expires or is terminated. Major observations should include: the location(s) of discharges of pollutants from the site; and location(s) of BMPs that need to be maintained; location(s) where additional BMPs are needed that did not exist at the time of inspection. You must retain a record of actions taken in accordance with Part II Section C.7 (Retention of Records) of this permit as part of the storm water pollution prevention plan for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance. Where an inspection report does not identify any incidents of non-compliance, the report must contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. Both the inspection report and any reports of follow-up actions must be signed in accordance with Part II Section D (Reporting Requirements) of this permit.

(5) **Credit As a Routine Facility Inspection**

- (a) Where compliance evaluation schedules overlap with inspections required under Section B(7)(c)(v) of this Part, your annual compliance evaluation may also be used as one of the Section B(7)(c)(v) of this Part , routine inspections.

**H. Maintaining Updated SWPPP**

- (1) You must amend the storm water pollution prevention plan whenever:

- (a) There is a change in design, construction, operation, or maintenance at your facility which has a significant effect on the discharge, or potential for discharge, of pollutants from your facility;
- (b) During inspections or investigations by you or by local, State, Tribal or Federal officials it is determined the SWPPP is ineffective in eliminating or significantly minimizing pollutants from sources identified under Section B(4) of this Part, or is otherwise not achieving the general objectives of controlling pollutants in discharges from your facility.

**I. Signature, Plan Review and Making Plans Available**

- (1) You must sign your SWPPP in accordance with Part II Section D.11, and retain the plan on-site at the facility covered by this permit (see Part II Section C.7 for records retention requirements).
- (2) You must keep a copy of the SWPPP on-site or locally available to the Director for review at the time of an on-site inspection. You must make your SWPPP available upon request to the Director, a State, Tribal or local agency approving storm water management plans, or the operator of a municipal separate storm sewer receiving discharge from the site. Also, in the interest of public involvement, EPA encourages you to make your SWPPPs available to the public for viewing during normal business hours.
- (3) The Director may notify you at any time that your SWPPP does not meet one or more of the minimum requirements of this permit. The notification will identify provisions of this permit which are not being met, as well as the required modifications. Within thirty (30) calendar days of receipt of such notification, you must make the required changes to the SWPPP and submit to the Director a written certification that the requested changes have been made.

- (4) You must make the SWPPP available to the USFWS or NMFS upon request.

**J. Additional Requirements for Storm Water Discharges Associated With Industrial Activity From Facilities Subject to EPCRA Section 313 Reporting Requirements.**

- (1) Potential pollutant sources for which you have reporting requirements under EPCRA 313 must be identified in your summary of potential pollutant sources as per Section B(4) of this Part. Note this additional requirement only applies to you if you are subject to reporting requirements under EPCRA 313.

**11. WHOLE EFFLUENT TOXICITY TEST REQUIREMENT (WET Limits, 7 DAY CHRONIC, FRESHWATER)**

**A. SCOPE AND METHODOLOGY**

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO OUTFALL(S):	001
REPORTED ON DMR AS OUTFALL:	001
CRITICAL DILUTION:	100% (June – Nov.) 60% (Dec. – May)
EFFLUENT DILUTION SERIES:	32%, 42%, 56%, 75%, & 100% (June – November) 25%, 34%, 45%, 60%, & 80% (December - May)
TEST SPECIES/METHODS:	<b>40 CFR Part 136</b>

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA/600/4-91/002 or the most recent update thereof. This test should be terminated when 60% of the surviving adults in the control produce three broods.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA/600/4-91/002, or the most recent update thereof. A minimum of five (5) replicates with eight

(8) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.
- c. When the testing frequency stated above is less than monthly and the effluent fails the survival endpoint at the critical dilution, the permittee shall be considered in violation of this permit limit and the frequency for the affected species will increase to monthly until such time compliance with the Lethal No Observed Effluent Concentration (NOEC) effluent limitation is demonstrated for a period of three consecutive months, at which time the permittee may return to the testing frequency stated in Part I of this permit. During the period the permittee is out of compliance, test results shall be reported on the DMR for that reporting period.
- d. This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.
- e. Test failure is defined as a demonstration of statistically significant sub-lethal or lethal effects to a test species at or below the effluent critical dilution.

**B. REQUIRED TOXICITY TESTING CONDITIONS**

a. Test Acceptance

In the event the results from a specific toxicity test yield a non-ideal concentration-response relationship, the permittee shall submit the toxicity report to ADEQ and request a technical review prior to initiating a retest. At the conclusion of the technical review, ADEQ will advise the permittee on any follow up toxicity retest(s) that may be required. However, if an ideal response-relationship is indicated in the results the Department shall require the permittee to conduct additional testing.

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

- i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
- ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- iii. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
- iv. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test, the growth and survival of the Fathead minnow test.
- v. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or nonlethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints in the Fathead minnow test.

Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

b. Statistical Interpretation

- i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA/600/4-91/002, or the most recent update thereof.  
  
If the conditions of Test Acceptability are met in Item 2.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 3 below.
- ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses

used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA/600/4-91/002, or the most recent update thereof.

c. Dilution Water

- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness and alkalinity to the closest downstream perennial water where the receiving stream is classified as intermittent or where the receiving stream has no flow due to zero flow conditions.
- ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
  - A. a synthetic dilution water control which fulfills the test acceptance requirements of Item 2.a. was run concurrently with the receiving water control;
  - B. the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);
  - C. the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 3.a. below; and
  - D. the synthetic dilution water shall have a pH, hardness and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- i. The permittee shall collect a minimum of three flow-weighted 24-hour composite samples from the outfall(s) listed at item 1.a. above. A 24-hour



composite sample consists of a minimum of 4 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.

- ii. The permittee shall collect second and third 24-hour composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the 24-hour composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- iii. The permittee must collect the 24-hour composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first 24-hour composite sample. Samples shall be chilled to 4 degrees Centigrade during collection, shipping and/or storage.
- iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 3. of this section.
- v. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the 24-hour composite effluent samples in proportion to the average flow from the outfalls listed in item 1.a. above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.
- vi. Chlorination/Dechlorination: The permittee shall have the sample dechlorinated in the laboratory **prior** to installation of dechlorination systems. However, upon operation of dechlorination systems, the permittee shall not allow the sample to be dechlorinated at the laboratory.

C. **REPORTING**

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA/600/4-91/002, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of Part III.C. of this permit. The permittee shall submit full reports only upon the specific request of the Department.
- b. The permittee shall report the Whole Effluent Lethality values for the 30-Day Average Minimum and the 7-Day Minimum under Parameter No. 22414 on the DMR for that reporting period.

If more than one valid test for a species was performed during the reporting period, the test NOECs will be averaged arithmetically and reported as the DAILY AVERAGE MINIMUM NOEC for that reporting period.

If more than one species is tested during the reporting period, the permittee shall report the lowest 30-Day Average Minimum NOEC and the lowest 7-Day Minimum NOEC for Whole Effluent Lethality.

A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit. Only ONE set of biomonitoring data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST Survival results for each species during the reporting period. All invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for EPA review.

- c. The permittee shall submit the results of the valid toxicity test on the DMR for that reporting period. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.
  - i. **Pimephales promelas** (Fathead Minnow)
    - A. If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C.

- B. Report the NOEC value for survival, Parameter No. TOP6C.
- C. Report the NOEC value for growth, Parameter No. TPP6C.
- D. If the No Observed Effect Concentration (NOEC) for growth is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP6C.
- E. Report the highest (Critical dilution or control) Coefficient of Variation, Parameter No. TQP6C.

ii. **Ceriodaphnia dubia**

- A. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP3B.
- B. Report the NOEC value for survival, Parameter No. TOP3B.
- C. Report the NOEC value for reproduction, Parameter No. TPP3B.
- D. If the No Observed Effect Concentration (NOEC) for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B.
- E. Report the highest (Critical dilution or control) Coefficient of Variation, Parameter No. TQP3B.

1000  
1000  
1000

12. **WHOLE EFFLUENT TOXICITY TESTING (7-DAY CHRONIC NOEC FRESHWATER)**

1. **SCOPE AND METHODOLOGY**

- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL:	002
CRITICAL DILUTION (%):	100%
EFFLUENT DILUTION SERIES (%):	32%, 42%, 56%, 75%, & 100%
APPLICABLE TO FINAL OUTFALL:	003
CRITICAL DILUTION (%):	36% (December – May) 100% (June – November)
EFFLUENT DILUTION SERIES (%):	15%, 20%, 27%, 36%, & 45% (December – May) 32%, 42%, 56%, 75%, & 100% (June – November)
APPLICABLE TO FINAL OUTFALL:	010
CRITICAL DILUTION (%):	2.4%
EFFLUENT DILUTION SERIES (%):	1.1%, 1.4%, 1.8%, 2.4%, & 3.2%
COMPOSITE SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA/600/4-91/002 or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA/600/4-91/002, or the most recent update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which lethality that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.
- c. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.
- d. Test failure is defined as a demonstration of statistically significant sub-lethal or lethal effects to a test species at or below the effluent critical dilution.

2. **PERSISTENT LETHALITY:** The requirements of this subsection apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects are herein defined as a statistically significant difference at the 95% confidence level between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent).

a. Part I Testing Frequency Other Than Monthly

- i. The permittee shall conduct a total of two (2) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The two additional tests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two additional tests in lieu of routine toxicity testing. The full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.
- ii. If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section. The permittee shall notify

ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required due to a demonstration of persistent significant sub-lethal effects or intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

- iii. If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall henceforth increase the frequency of testing for this species to once per quarter for the life of the permit.
- iv. The provisions of Item 2.a are suspended upon submittal of the TRE Action Plan.

b. Part I Testing Frequency of Monthly

The permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section when any two of three consecutive monthly toxicity tests exhibit significant lethal effects at or below the critical dilution. A TRE may be also be required due to a demonstration of persistent significant sub-lethal effects or intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

- i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
- ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- iii. 60% of the surviving control females must produce three broods.

- iv. The mean dry weight of surviving fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
- v. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the fathead minnow test.
- vi. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or nonlethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the fathead minnow test.

Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

b. Statistical Interpretation

- i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA/600/4-91/002 or the most recent update thereof.
- ii. For the Ceriodaphnia dubia reproduction test and the fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA/600/4-91/002 or the most recent update thereof.
- iii. If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.

c. Dilution Water

- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for:
  - (A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
  - (B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.
- ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
  - (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
  - (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);
  - (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and
  - (D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- i. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item 1.a above.



- ii. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- iii. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 4 degrees Centigrade during collection, shipping, and/or storage.
- iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must collect an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section.
- v. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in Item 1.a above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.
- vi. The permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.

4. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA/600/4-91/002, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART II.C.7 of this permit. The permittee shall submit full reports upon the specific request of the Department. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for review.
- b. A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of biomonitoring data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST survival results for each species during the reporting period. All invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for ADEQ review.
- c. The permittee shall submit the results of each valid toxicity test on DMR for that reporting period in accordance with PART II.D.4 of this permit, as follows below. Submit retest information clearly marked as such with the following DMR. Only results of valid tests are to be reported on the DMR.
  - i. Pimephales promelas (fathead minnow)
    - (A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C.
    - (B) If the No Observed Effect Concentration (NOEC) for growth is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP6C.
    - (C) Report the NOEC value for survival, Parameter No. TOP6C.

- (D) Report the NOEC value for growth, Parameter No. TPP6C.
- (E) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQP6C.

ii. Ceriodaphnia dubia

- (A) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP3B.
- (B) If the No Observed Effect Concentration (NOEC) for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B.
- (B) Report the NOEC value for survival, Parameter No. TOP3B.
- (C) Report the NOEC value for reproduction, Parameter No. TPP3B.
- (E) Report the higher (critical dilution or control) Coefficient of Variation, Parameter No. TQP3B.

5. Monitoring Frequency Reduction – This section does not apply to Outfall 010.

- a. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the fathead minnow) and not less than twice per year for the more sensitive test species (usually the Ceriodaphnia dubia).
- b. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item 3.a. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the Department will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the Permit Compliance System section to update the permit reporting requirements.

- c. SUB-LETHAL FAILURES - If, during the first four quarters of testing, sub-lethal effects are demonstrated to a test species, two monthly retests are required. In addition, quarterly testing is required for that species until the effluent passes both the lethal and sub-lethal test endpoints for the affected species for four consecutive quarters. Monthly retesting is not required if the permittee is performing a TRE.
- d. SURVIVAL FAILURES - If any test fails the survival endpoint at any time during the life of this permit, two monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.
- e. This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

6. TOXICITY REDUCTION EVALUATION (TRE)

- a. Within ninety (90) days of confirming lethality in the retests, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:
  - i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures"

(EPA-600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (800) 553-6847, or by writing:

U.S. Department of Commerce  
National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161

- ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

- iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

- iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
- c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:
  - i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
  - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
  - iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.
- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

- 8. The permittee shall conduct an evaluation of the background flow of the receiving stream for Outfall 003 (Little Cornie Bayou) and the dilution of effluent in the receiving stream. This evaluation must be conducted in accordance with the following conditions.

- A. The permittee must monitor the upstream flow. Receiving stream flow shall be measured immediately upstream from the discharge location.
- B. The permittee shall maintain the approved instream flow monitoring equipment and the associated solenoids, valves, etc.; and have the equipment serviced and calibrated on a regular basis. Records shall be kept and available for inspection upon request.

This permit may be reopened upon the Department's review of the study to incorporate the gathered data into the permit. The evaluation of the background flow shall not provide any relief from necessary action to address toxicity. The permittee will not be required to submit this study if Outfall 003 is routed to the pipeline before the due date of the study.

This study is not required if the permittee routes the water to the joint pipeline for discharge. If the permittee continues to discharge through Outfall 003, this study will be required. If the permittee stops discharging through Outfall 003 and then wishes to resume the discharge at a later date, this study will then be required.

## PART IV DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **“Act”** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **“Administrator”** means the Administrator of the U.S. Environmental Protection Agency.
3. **“Applicable effluent standards and limitations”** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
4. **“Applicable water quality standards”** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303 (a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under regulation No. 2, as amended, (regulation establishing water quality standards for surface waters of the State of Arkansas.)
5. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **“Daily Discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.  
*Mass Calculations:* For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total mass of pollutant discharged over the sampling day.  
*Concentration Calculations:* For pollutants with limitations expressed in other units of measurement, determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the “daily discharge” determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that sampling day by using the following formula: where C= daily concentration, F=daily flow and n=number of daily samples; daily average discharge

$$\frac{C_1F_1 + C_2F_2 + \dots + C_nF_n}{F_1 + F_2 + \dots + F_n}$$

7. **Monthly average:** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month. For Fecal Coliform Bacteria (FCB) report the monthly average see 30-day average below.
8. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month. The 7-day average for fecal coliform bacteria is the geometric mean of the values of all effluent samples collected during the calendar week in colonies/100 ml.



9. **“Department”** means the Arkansas Department of Environmental Quality (ADEQ).
10. **“Director”** means the Administrator of the U.S. Environmental Protection Agency and/or the Director of the Arkansas Department of Environmental Quality.
11. **“Grab sample”** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
12. **“Industrial User”** means a nondomestic discharger, as identified in 40 CFR 403, introducing pollutants to a publicly-owned treatment works.
13. **“National Pollutant Discharge Elimination System”** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318 and 405 of the Clean Water Act.
14. **“POTW”** means a Publicly Owned Treatment Works.
15. **“Severe property damage”** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
16. **“APCEC”** means the Arkansas Pollution Control and Ecology Commission.
17. **“Sewage sludge”** means the solids, residues, and precipitate separated from or created in sewage by the unit processes a publicly-owned treatment works. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and storm water runoff that are discharged to or otherwise enter a publicly-owned treatment works.
18. **“7-day average”** discharge limitation, other than for fecal coliform bacteria, is the highest allowable arithmetic means of the values for all effluent samples collected during the calendar week. The 7-day average for fecal coliform bacteria is the geometric mean of the values of all effluent samples collected during the calendar week in colonies/100 ml. The DMR should report the highest 7-day average obtained during the calendar month. For reporting purposes, the 7-day average values should be reported as occurring in the month in which the Saturday of the calendar week falls in.
19. **“30-day average”**, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. The 30-day average for fecal coliform bacteria is the geometric mean of the values for all effluent samples collected during a calendar month. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
20. **“24-hour composite sample”** consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at frequent intervals proportional to flow over the 24-hour period.
21. **“12-hour composite sample”** consists of 12 effluent portions, collected no closer together than one hour and composited according to flow. The daily sampling intervals shall include the highest flow periods.

22. **“6-hour composite sample”** consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.
23. **“3-hour composite sample”** consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.
24. **“Treatment works”** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.
25. **“Upset”** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack or preventive maintenance, or careless or improper operations.
26. **“For Fecal Coliform Bacteria”**, a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
27. **“Dissolved oxygen limit”**, shall be defined as follows:
- When limited in the permit as a monthly average minimum, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month;
  - When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
28. **The term “MGD”** shall mean million gallons per day.
29. **The term “mg/l”** shall mean milligrams per liter or parts million (ppm).
30. **The term “µg/l”** shall mean micrograms per liter or parts per billion (ppb).
31. **The term “cfs”** shall mean cubic feet per second.
32. **The term “ppm”** shall mean part per million.
33. **The term “s.u.”** shall mean standard units.
34. **Monitoring and Reporting:**

When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is Monthly or more frequently, the Discharge Monitoring Report shall be submitted by the 25<sup>th</sup> of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the Discharge Monitoring report shall be submitted by the 25<sup>th</sup> of the month following the monitoring period end date.

**MONTHLY:**

is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.

**QUARTERLY:**

(1) is defined as a fixed calendar quarter or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December; or

(2) is defined as a fixed three month period (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters May through July, August through October, November through January, and February through April.

**SEMI-ANNUAL:**

is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

**ANNUAL or YEARLY:**

is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.



## Final Fact Sheet

For modification of NPDES Permit Number AR0001171 to discharge to Waters of the State

### 1. PERMITTING AUTHORITY.

The issuing office is:

Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

### 2. APPLICANT.

The applicant is:

Great Lakes Chemical Corporation - Central Plant  
P.O. Box 7020  
El Dorado, AR 71731-7020

### 3. PREPARED BY.

The permit was prepared by:

Loretta Reiber, P.E.  
NPDES Branch, Water Division

### 4. DATE PREPARED.

The final modified permit was prepared on 06/30/2008.

### 5. PREVIOUS PERMIT ACTIVITY.

Effective Date: 01/01/2004  
Modification Date: N/A  
Expiration Date: 12/31/2008

The permittee submitted a permit application on 10/05/2004 to modify their existing NPDES permit. Information assisting in the development of permit conditions was received by 10/06/2005. Outfall 010 is being added under this permit modification. Outfall 010 will be the combined outfall for the existing outfalls (Outfalls 001, 002, 003, and 004) located at this facility. Outfall 010 will be routed to the joint pipeline for discharge to the Ouachita River.

This permit was originally modified on February 28, 2007, with an effective date of April 1, 2008. The permit was appealed by several different parties in a timely manner. An

administrative hearing was held in October and November 2007. A recommended decision regarding the permits was issued by the administrative hearing officer (AHO) on May 8, 2008. Two requests for oral arguments before the Arkansas Pollution Control and Ecology Commission (APCEC) were filed in a timely manner (i.e., prior to the close of business on May 28, 2008). A third request for oral arguments before the APCEC was received after the deadline for submittal. Oral arguments were held before the APCEC on June 27, 2008. This permit modification incorporates all changes in the recommended decision upheld by the APCEC.

The current NPDES permit is modified for the remainder of the 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

6. **RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.**

The monitoring outfalls are located at the following coordinates:

Outfall 001: Latitude: 33° 11' 12"; Longitude: 92° 40' 58"  
Outfall 002: Latitude: 33° 11' 02"; Longitude: 92° 42' 03"  
Outfall 003: Latitude: 33° 10' 56"; Longitude: 92° 43' 14"  
Outfall 004: Latitude: 33° 11' 00"; Longitude: 92° 42' 02"  
Outfall 010: Latitude: 33° 10' 29"; Longitude: 92° 42' 40"

The receiving waters named:

Outfall 001: Bayou de Loutre in Segment 2D of the Ouachita River Basin.  
Outfall 002: Unnamed tributary of Bayou de Loutre, thence to Bayou de Loutre in Segment 2D of the Ouachita River Basin.  
Outfall 003: Unnamed tributary of Little Cornie Bayou, thence to Little Cornie Bayou in Segment 2E of the Ouachita River Basin.  
Outfall 004: Unnamed tributary of Bayou de Loutre, thence to Bayou de Loutre in Segment 2D of the Ouachita River Basin.  
Outfall 010: Via the joint pipeline to the Ouachita River, approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam at Latitude: 33° 17' 31"; Longitude: 92° 28' 14" in Segment 2D of the Ouachita River Basin.

The receiving streams are Water of the State classified for primary (Outfall 010) and secondary (Outfalls 001, 002, 003, and 004) contact recreation, raw water source for public, industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

7. **303(d) List and Endangered Species Considerations**

A. **303(d) List**

The receiving stream for Outfall 010 (the Ouachita River) is listed on the 303(d) list for mercury. Mercury levels in the effluent are to be less than 0.2 µg/l, i.e., less than the 0.19 µg/l daily maximum mass limit basis in the joint pipeline permit (AR0050296).

The Department recognizes that reaches #002 and #004 of the Ouachita River in HUC 8040202 are on the 303(d) list for zinc and that reach #005 of the Ouachita River in HUC 8040201 is also on the 303(d) list for zinc as well as copper. The permittee will be discharging to reach #002 of the Ouachita River in HUC 8040201. This part of the river is not on the 303(d) list for copper or zinc. Therefore no additional permit action is required regarding these metals.

The receiving streams for the other outfalls are not listed on the 303(d) list. Therefore no permit action is needed at those outfalls.

B. **Endangered Species:**

ADEQ has concluded that issuance of this NPDES permit will have no effect on any endangered or candidate species or the critical habitat. A complete copy of the application has been sent to USF&WS for review. No written comments were received from the U.S. Fish and Wildlife Service (USF&WS). Therefore no permit action is needed. The drafted permit and Fact Sheet were sent to the USF&WS for their review.

8. **OUTFALL AND TREATMENT PROCESS DESCRIPTION.**

The following is a description of the facility described in the application:

**OUTFALL 001:**

Average Flow: 0.93 MGD, based on the highest monthly average flow during the last two years.

Type of treatment: Sanitary waste is treated in a septic tank prior to comingling with other wastes discharged through this outfall. No other waters discharged through this outfall are treated.

Discharge Description: sanitary wastewater, roof drains, non-contact cooling water, boiler blowdown, air conditioning drainage, reactor jacket water, cooling tower blowdown, steam condensate, and stormwater runoff.

**OUTFALL 002:**

Average Flow: Variable

Type of treatment: Sedimentation pond

Discharge Description: Stormwater runoff and Outfalls 001 and 002 from the permittee's South Plant (See NPDES Permit No. AR0000680)

**OUTFALL 003:**

Average Flow: Variable

Type of treatment: None

Discharge Description: Stormwater runoff, roof drains, non-contact cooling water, freeze protection, boiler blow down, air conditioner drainage, reactor jacket water, cooling tower blow down, and steam condensate.

**OUTFALL 004:**

Average Flow: Variable

Type of treatment: None

Discharge Description: Stormwater runoff

**OUTFALL 010:**

Permitted Flow: 3 MGD

Type of treatment: Although there is no treatment specifically associated with this outfall, the permittee is required to treat the effluent to be discharged at this outfall using the treatment in place for those outfalls which will be routed through Outfall 010.

Discharge Description: Combination of Outfalls 001, 002, 003, and 004 to the joint pipeline



9. **APPLICANT ACTIVITY.**

The applicant's activities are the operation of manufacturing of inorganic chemicals and industrial chemicals.

10. **SEWAGE SLUDGE PRACTICES.**

Sludge is hauled off site as necessary by a licensed septic tank hauler.

11. **PERMIT CONDITIONS.**

The Arkansas Department of Environmental Quality has made a determination to issue a permit for the discharge described in the application. Permit requirements are based on NPDES regulations (40 CFR Parts 122, 124, and Subchapter N) and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8-4-101 et. seq.).

a. **Final Effluent Limitations**

i. **Conventional and/or Toxic Pollutants**

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
<b>OUTFALL 001 - SANITARY WASTEWATER, ROOF DRAINS, NON-CONTACT COOLING WATER, BOILER BLOWDOWN, AIR CONDITIONING DRAINAGE, REACTOR JACKET WATER, COOLING TOWER BLOWDOWN, STEAM CONDENSATE, AND STORMWATER RUNOFF</b>						
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	continuous	estimated
Chloride	N/A	N/A	Report	Report	once/week	24-hr composite
Total Organic Carbon	N/A	N/A	N/A	10	once/month	grab
Total Residual Chlorine	N/A	N/A	0.1 (inst. max.)		once/month	grab
Total Purgeable Halocarbons	N/A	N/A	N/A	Report	once/quarter	24-hr composite
Total Purgeable Aromatics	N/A	N/A	N/A	Report	once/quarter	24-hr composite
Temperature	N/A	N/A	96°F (inst. max.)		once/day	grab
Turbidity	N/A	N/A	21 NTU (inst. max.)		once/month	grab
Sulfate	N/A	N/A	90	135	twice/week	24-hr composite
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	five/week	grab
<u>Whole Effluent Lethality</u> (7-day NOEC) 22414 (June - Nov.) (7-day NOEC) 22414 (Dec. - May)	<u>Daily Average</u> <u>Minimum</u> not < 100% not < 60%		<u>7-day Minimum</u> not < 100% not < 60%		once/quarter once/quarter	24-hr composite 24-hr composite

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
<u><b>Pimephales promelas (Chronic)</b></u> Pass/Fail Growth (7-day NOEC) <b>TGP6C</b> Pass/Fail Lethality (7-day NOEC) <b>TLP6C</b> Survival (7-day NOEC) <b>TOP6C</b> Coefficient of Variation <b>TQP6C</b> Growth (7-day NOEC) <b>TPP6C</b>			<u>7-day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<u><b>Ceriodaphnia dubia (Chronic)</b></u> Pass/Fail Reproduction (7-day NOEC) <b>TGP3B</b> Pass/Fail Lethality (7-day NOEC) <b>TLP3B</b> Survival (7-day NOEC) <b>TOP3B</b> Coefficient of Variation <b>TQP3B</b> Reproduction(7-day NOEC) <b>TPP3B</b>			<u>7-day Average</u> Report (Pass=0/Fail=1)  Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter  once/quarter once/quarter once/quarter	24-hr composite  24-hr composite 24-hr composite 24-hr composite
<b>OUTFALL 002 – STORMWATER RUNOFF AND WASTEWATERS FROM OUTFALLS 001 AND 002 FROM THE PERMITTEE'S SOUTH PLANT</b>						
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	once/day	estimate
Chloride	N/A	N/A	129	193.5	once/month	grab
Total Organic Carbon	N/A	N/A	N/A	35	once/month	grab
Total Purgeable Halocarbons	N/A	N/A	N/A	0.1	once/quarter	grab
Sulfate	N/A	N/A	250	375	once/month	grab
Total Dissolved Solids	N/A	N/A	500	750	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic Biomonitoring	N/A		See #14 below		once/quarter	24-hr composite
<b>OUTFALL 003 – STORMWATER RUNOFF, ROOF DRAINS, NON-CONTACT COOLING WATER, FREEZE PROTECTION, BOILER BLOW DOWN, AIR CONDITIONER DRAINAGE, REACTOR JACKET WATER, COOLING TOWER BLOW DOWN, AND STEAM CONDENSATE</b>						
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	once/day	estimate
Chloride	N/A	N/A	31	46.5	once/month	grab
Total Organic Carbon	N/A	N/A	N/A	35	once/month	grab
Total Purgeable Halocarbons	N/A	N/A	N/A	0.1	once/quarter	grab
Sulfate	N/A	N/A	66	99	once/month	grab
Total Dissolved Solids	N/A	N/A	201	302	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
Temperature	N/A	N/A	86 °F, inst. max.		once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic Biomonitoring	N/A		See #14 below		once/quarter	24-hr composite
<b>OUTFALL 004 – STORMWATER RUNOFF</b>						
Flow <sup>1</sup>	N/A	N/A	N/A	N/A	once/day	estimate
Chloride	N/A	N/A	98	147	once/month	grab

Effluent Characteristics	Discharge Limitations				Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Total Organic Carbon	N/A	N/A	N/A	35	once/month	grab
Total Purgeable Halocarbons	N/A	N/A	N/A	0.1	once/quarter	grab
Sulfate	N/A	N/A	Report	Report	once/month	grab
Total Dissolved Solids	N/A	N/A	500	750	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
<b>OUTFALL 010 – COMBINED OUTFALL TO JOINT PIPELINE</b>						
Flow <sup>1</sup>	N/A	N/A	Report	3	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	50	75	N/A	N/A	once/day	24-hr composite
Total Suspended Solids (TSS)	750.6	1125.9	N/A	N/A	once/day	24-hr composite
Ammonia – Nitrogen (NH3-N)	12.5	18.7	N/A	N/A	once/day	24-hr composite
Oil and Grease (O & G)	250.2	375.3	N/A	N/A	two/week	grab
Dissolved Oxygen (DO)	N/A	N/A	Report, minimum		once/day	grab
Total Dissolved Solids (TDS)	N/A	N/A	Report	Report	two/week	grab
Sulfates	N/A	N/A	Report	Report	two/week	grab
Chlorides	N/A	N/A	Report	Report	two/week	grab
Mercury, Total Recoverable	N/A	N/A	N/A	<0.2 µg/l	once/month	24-hr composite
Cadmium, Total Recoverable	0.33	0.67	N/A	N/A	once/month	24-hr composite
Hexavalent Chromium, Dissolved	1.44	2.90	N/A	N/A	once/month	24-hr composite
Copper, Total Recoverable	1.23	2.48	N/A	N/A	once/month	24-hr composite
Lead, Total Recoverable	0.60	1.20	N/A	N/A	once/month	24-hr composite
Nickel, Total Recoverable	21.35	42.83	N/A	N/A	once/month	24-hr composite
Selenium, Total Recoverable	0.99	1.98	N/A	N/A	once/month	24-hr composite
Silver, Total Recoverable	0.12	0.23	N/A	N/A	once/month	24-hr composite
Zinc, Total Recoverable	11.03	22.13	N/A	N/A	once/month	24-hr composite
Chromium (III), Total Recoverable	59.27	118.93	N/A	N/A	once/month	24-hr composite
Cyanide, Total Recoverable	1.03	2.06	N/A	N/A	once/month	grab
Total Phosphorus	N/A	N/A	Report	Report	once/day	grab
Fecal Coliform Bacteria (FCB)			colonies/100 ml			
	N/A	N/A	Report	Report	once/day	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic Biomonitoring	N/A		See #14 below		once/quarter	24-hr composite

1 Report in MGD.

- ii. **Solids and Foam:** There shall be no discharge of distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

12. **BASIS FOR PERMIT CONDITIONS.**

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the tentative decisions as required under 40 CFR 124.7 (48 FR 1413, April 1, 1983).

**THIS IS A MODIFIED PERMIT. ONLY THOSE PORTIONS OF THE PERMIT WHICH HAVE BEEN MODIFIED WERE OPEN FOR COMMENT.**

**Technology-Based versus Water Quality-Based Effluent Limitations and Conditions**

Following regulations promulgated at 40 CFR Part 122.44 (1) (2) (ii), the permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44 (a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44 (d), whichever are more stringent.

A. **Technology-Based Effluent Limitations and/or Conditions**

Regulations promulgated at 40 CFR Part 122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on Best Professional Judgment (BPJ) in the absence of guidelines, or on a combination of the two.

(1) **Applicable Effluent Limitations Guidelines**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines promulgated under 40 CFR Part 415, Subpart AC - Inorganic Chemicals Manufacturing Point Source Category, Bromine Production Subcategory. Per 40 CFR 415.292, "There shall be no discharge of process wastewater pollutants to navigable waters, except that residual brine and depleted liquor may be returned to the body of water from which the process brine solution was originally withdrawn."

Permitted limits which are not water quality based limits at Outfalls 001, 002, 003, and 004 are continued from the current permit.

**Outfall 010**

Several of the outfalls (in the individual permits) which will now be routed to the pipeline have been shown to contain minerals in levels which required numerical limits to be placed in the individual permit. Available data on mineral levels in the effluent have not demonstrated reasonable potential to exceed water quality standards in the Ouachita River. Based

on the judgment of the Water Division staff, monitoring and reporting requirements for sulfates, chlorides, and total dissolved solids have been included in the permit.

Dissolved oxygen monitoring and reporting requirements have been included based on the location of the discharge point of the joint pipeline at the Ouachita River.

Based on information submitted to the Department, total phosphorus monitoring and reporting requirements have been included in the permit.

Monitoring and reporting requirements for Fecal Coliform Bacteria have been included based on the judgment of the Water Division staff.

Total Suspended Solids (TSS) is a factor contributing to physical and aesthetic degradation of water quality. TSS is physically related to other pollutants, particularly nutrients and metals which may be carried on the surface of suspended sediments. In accordance with 40 CFR 122.44(d) (1), limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are being discharged, or may be discharged at a level which will cause, or have reasonable potential to cause or contribute to an excursion above any State water quality standard, including state narrative criteria. In accordance with Regulation No. 2, Section 2.408, "The receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature..." Note that TSS is a primary factor affecting turbidity. ADEQ acknowledges that there are no Water Quality Standards for TSS; however, there are Water Quality Standards for turbidity based on Regulation No. 2, Section 2.503. Regulation 2 lists a turbidity value of 21 NTU for the Ouachita River (Typical Gulf Coast). As stated above, TSS is a good indicator of other pollutants, particularly nutrients such as phosphorus. Therefore since the combined effluent is partially comprised of the discharge from the POTW and there is a turbidity limit in place at Outfall 001 (which will now be discharging through Outfall 010 to the joint pipeline), the TSS mass limitations were calculated using the daily maximum permitted flow of 20 MGD, concentrations of 30 mg/l for a monthly average and 45 mg/l for a daily maximum, and the formula found in Section B below.

(2) **Stormwater runoff**

Effluent limitations guidelines have not been promulgated for discharges of this sort. Therefore under the authority of Section 402 (a) (1) of the Clean Water Act and State laws, the State has developed a permit on a

case-by-case basis. Stormwater pollution prevention plan requirements are included.

**B. State Water Quality Numerical Standards Based Limitations**

The water quality based limits at Outfalls 001, 002, 003, and 004 are continued from the previous permit.

**Outfall 010**

The CBOD5 mass limits were calculated using the permitted flow of 3 MGD, effluent concentrations obtained from a model performed by the permittee and approved by the Department and the US EPA, and the formula below. These limits will be included in the updated Water Quality Management Plan (WQMP).

pH and Oil and Grease limitations are based on Chapter 5, Sections 2.504 and 2.510 of Regulation No. 2 as amended, respectively. The O & G mass limitations were calculated using the permitted maximum flow of 3 MGD, concentrations of 10 mg/l for a monthly average and 15 mg/l for a daily maximum, and the following formula:

$$\text{Mass (lb/day)} = \text{Flow (MGD)} * \text{Concentration (mg/l)} * 8.34$$

The daily maximum limits for CBOD5 and Oil & Grease at Outfall 010 are 1.5 times the monthly average limit.

**Ammonia**

The water quality effluent limitations for Ammonia are based on either DO-based effluent limits or on toxicity-based standards, whichever are more stringent.

The toxicity-based effluent limitations are based on Chapter 5, Section 2.512 of Regulation No. 2 and memo dated March 28, 2005. The following formula has been used to calculate toxicity based Ammonia limits:

$$C_d = (IWC(Q_d + Q_b) - C_b Q_b) / Q_d,$$

Where:

$C_d$  = effluent limit concentration (mg/l)

IWC = Ammonia toxicity standard for Ecoregion

$Q_d$  = permitted flow = 3 MGD = 4.635 cfs

The 7Q10 of 750 cfs is based on "Identification and Classification of Perennial Stream of Arkansas", Arkansas Geological Commission Map Qb = Critical flow of the receiving stream = 187.5 cfs. This flow is 25 percent of the 7-day, 10-year low-flow (7Q10) for the receiving stream.

$C_b$  = background concentration = 0.04 mg/l (ADEQ data from Monitoring Stations OUA0008B – Ouachita River @ Felsenthal Lock & Dam and OUA0037 – Ouachita River downstream of Camden, AR)

The temperatures and pH values used to determine the toxicity criteria for the time frames of April – October and November – March are as follows:

Months	Temperature, °C	pH, s.u.
April - October	32	6.7
November - March	14	6.7

Permit limits, based on maintaining Dissolved Oxygen, are as follows (See attachment 1) :

Month	Monthly Avg	Daily Max
January - December	12.5 lb/day	18.7 lb/day

C. **Toxics Pollutants-Priority Pollutant Scan (PPS)**

(1) **General Comments**

The permittee will be required to perform a PPS at Outfall 010 within 90 days of the first discharge to the joint pipeline.

Mercury limitations have been included in the permit because the receiving stream (the Ouachita River) is on the 303(d) list for mercury. The final mercury limit has been set at <0.2 µg/l because the joint pipeline's limits are below that level.

In lieu of monthly biomonitoring at Outfall 010, the permittee has agreed to inclusion of the metals limits and quarterly biomonitoring.

The following information details how the metals limits were determined.

The other metals limits were determined by multiplying the mass limits for the joint pipeline by the percentage of permitted flow (15%) allowed to be contributed by the permittee.

(2) **Permit Limit Determination**

The instream waste load allocation (WLA), which is the level of effluent concentration that would comply with the water quality standard (WQS) of the receiving stream, is calculated for both chronic and acute WLA using the following equations:

$$WLA_c = (WQS \times (Q_d + Q_b) - Q_b \times C_b) / Q_d$$

Where:

$WLA_c$  = chronic waste load allocation ( $\mu\text{g/l}$ )

$Q_d$  = discharge flow (cfs)

$Q_b$  =  $0.25 \times 7Q_{10}$  (cfs)

$C_b$  = background concentration ( $\mu\text{g/l}$ )

WQS = chronic aquatic toxicity standards ( $\mu\text{g/l}$ )

and;

$$WLA_a = (WQS \times (Q_d + Q_b) - Q_b \times C_b) / Q_d$$

Where:

$WLA_a$  = acute waste load allocation ( $\mu\text{g/l}$ )

$Q_d$  = discharge flow (cfs)

$Q_b$  =  $0.13 \times 7Q_{10}$  (cfs)

$C_b$  = background concentration ( $\mu\text{g/l}$ )

WQS = acute aquatic toxicity standards ( $\mu\text{g/l}$ )

The long term average (LTA) effluent concentration is then calculated based on the chronic and acute WLA as follows:

$$LTA_c = 0.72 \times WLA_c$$

$$LTA_a = 0.57 \times WLA_a$$

The lowest of these two (2) values is selected as being the limiting LTA. The limiting LTA is then used to calculate the monthly average (AML)



and daily maximum (DML) for the final limits. AML and DML are calculated as follows:

$$\text{AML} = 1.55 \times \text{Limiting LTA}$$

$$\text{DML} = 3.11 \times \text{Limiting LTA}$$

The mass limits were then calculated using the following formulas:

$$\text{mg/l} = (\mu\text{g/l}) / 1000$$

$$\text{Joint Pipeline Mass (lb/day)} = 20 \text{ MGD} * \text{Concentration (mg/l)} * 8.34$$

$$\text{Qe as \% of Total Pipeline Flow (TPF)} = \text{Permitted Flow} / 20 \text{ MGD}$$

$$\text{Individual Mass (lb/day)} = \text{Qe as \% of TPF} * \text{Joint Pipeline Mass}$$

The mass limits are as follows:

Arkansas Numerical Aquatic Toxicity Limits		
Parameter	AML*, lb/day	DML*, lb/day
Cadmium, Total Recoverable	0.33	0.67
Hexavalent Chromium, Dissolved	1.44	2.90
Copper, Total Recoverable	1.23	2.48
Lead, Total Recoverable	0.60	1.20
Nickel, Total Recoverable	21.35	42.83
Selenium, Total Recoverable	0.99	1.98
Silver, Total Recoverable	0.12	0.23
Zinc, Total Recoverable	11.03	22.13
Chromium (III), Total Recoverable	59.27	118.93
Cyanide, Total Recoverable	1.03	2.06
*See Attachments 2 and 3 for calculations		

13. FINAL LIMITATIONS

The following effluent limitations or "report" requirements were placed in the permit based on the more stringent of the technology-based, water quality-based or previous NPDES permit limitations:

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Final Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
OUTFALL 001								
Chloride	Report	Report	N/A	N/A	Report	Report	Report	Report
Total Organic Carbon	N/A	N/A	N/A	10	N/A	10	N/A	10
Total Residual Chlorine	N/A	N/A	N/A	0.1	N/A	0.1	N/A	0.1
Total Purgeable Halocarbons	N/A	N/A	N/A	Report	N/A	Report	N/A	Report
Total Purgeable Aromatics	N/A	N/A	N/A	Report	N/A	Report	N/A	Report
Temperature	96°F (inst. max.)		N/A		86°F (inst. max.)		96°F (inst. max.)	
Turbidity	N/A	21 NTU	N/A		N/A	21 NTU	N/A	21 NTU
Sulfate	90	135	N/A	N/A	N/A	90	90	135
Oil and Grease (O & G)	10	15	N/A	N/A	10	15	10	15
pH	6.0 s.u. - 9.0 s.u.		N/A		6 s.u. - 9 s.u.		6.0 s.u. - 9.0 s.u.	
OUTFALL 002								
Chloride	129	193.5	N/A	N/A	Report	Report	129	193.5
Total Organic Carbon	N/A	N/A	N/A	35	N/A	35	N/A	35
Total Purgeable Halocarbons	N/A	N/A	N/A	0.1	N/A	0.1	N/A	0.1
Sulfate	250	375	N/A	N/A	N/A	Report	250	375
Total Dissolved Solids	500	750	N/A	N/A	N/A	N/A	500	750
Oil and Grease (O & G)	10	15	N/A	N/A	10	15	10	15
pH	6.0 s.u. - 9.0 s.u.		N/A		6 s.u. - 9 s.u.		6.0 s.u. - 9.0 s.u.	
OUTFALL 003								

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Final Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
Chloride	31	46.5	N/A	N/A	Report	Report	31	46.5
Total Organic Carbon	N/A	N/A	N/A	35	N/A	35	N/A	35
Total Purgeable Halocarbons	N/A	N/A	N/A	0.1	N/A	0.1	N/A	0.1
Sulfate	66	99	N/A	N/A	N/A	Report	66	99
Total Dissolved Solids	201	302	N/A	N/A	N/A	N/A	201	302
Oil and Grease (O & G)	10	15	N/A	N/A	10	15	10	15
Temperature	86 °F, inst. max.		N/A	N/A	N/A	N/A	86 °F, inst. max.	
pH	6.0 s.u. – 9.0 s.u.		N/A		6 s.u. - 9 s.u.		6.0 s.u. – 9.0 s.u.	
OUTFALL 004								
Chloride	98	147	N/A	N/A	Report	Report	98	147
Total Organic Carbon	N/A	N/A	N/A	35	N/A	35	N/A	35
Total Purgeable Halocarbons	N/A	N/A	N/A	0.1	N/A	0.1	N/A	0.1
Sulfate	Report	Report	N/A	N/A	N/A	Report	Report	Report
Total Dissolved Solids	500	750	N/A	N/A	N/A	N/A	500	750
Oil and Grease (O & G)	10	15	N/A	N/A	10	15	10	15
pH	6.0 s.u. – 9.0 s.u.		N/A		6 s.u. - 9 s.u.		6.0 s.u. – 9.0 s.u.	
OUTFALL 010								
Flow	Report	3 MGD	N/A	N/A	N/A	N/A	Report	3 MGD
CBOD5	50 lb/day	75 lb/day	N/A	N/A	N/A	N/A	50 lb/day	75 lb/day
TSS	750.6 lb/day	1125.9 lb/day	N/A	N/A	N/A	N/A	750.6 lb/day	1125.9 lb/day
NH3-N	12.5 lb/day	18.7 lb/day	N/A	N/A	N/A	N/A	12.5 lb/day	18.7 lb/day
O & G	250.2 lb/day	375.3 lb/day	N/A	N/A	N/A	N/A	250.2 lb/day	375.3 lb/day
D.O.	N/A	N/A	Report minimum		N/A	N/A	Report minimum	

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Final Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
TDS	N/A	N/A	Report	Report	N/A	N/A	Report	Report
Sulfates	N/A	N/A	Report	Report	N/A	N/A	Report	Report
Chlorides	N/A	N/A	Report	Report	N/A	N/A	Report	Report
Mercury, Total Recoverable	N/A	< 0.2 µg/l	N/A	N/A	N/A	N/A	N/A	<0.2 µg/l
Cadmium, Total Recoverable	0.33 lb/day	0.67 lb/day	N/A	N/A	N/A	N/A	0.33 lb/day	0.67 lb/day
Hexavalent Chromium, Dissolved	1.44 lb/day	2.90 lb/day	N/A	N/A	N/A	N/A	1.44 lb/day	2.90 lb/day
Copper, Total Recoverable	1.23 lb/day	2.48 lb/day	N/A	N/A	N/A	N/A	1.23 lb/day	2.48 lb/day
Lead, Total Recoverable	0.60 lb/day	1.20 lb/day	N/A	N/A	N/A	N/A	0.60 lb/day	1.20 lb/day
Nickel, Total Recoverable	21.35 lb/day	42.83 lb/day	N/A	N/A	N/A	N/A	21.35 lb/day	42.83 lb/day
Selenium, Total Recoverable	0.99 lb/day	1.98 lb/day	N/A	N/A	N/A	N/A	0.99 lb/day	1.98 lb/day
Silver, Total Recoverable	0.12 lb/day	0.23 lb/day	N/A	N/A	N/A	N/A	0.12 lb/day	0.23 lb/day
Zinc, Total Recoverable	11.03 lb/day	22.13 lb/day	N/A	N/A	N/A	N/A	11.03 lb/day	22.13 lb/day
Chromium (III), Total Recoverable	59.27 lb/day	118.93 lb/day	N/A	N/A	N/A	N/A	59.27 lb/day	118.93 lb/day
Cyanide, Total Recoverable	1.03 lb/day	2.06 lb/day	N/A	N/A	N/A	N/A	1.03 lb/day	2.06 lb/day
Total Phosphorus	N/A	N/A	Report	Report	N/A	N/A	Report	Report
FCB, colonies/100 ml	N/A	N/A	Report	Report	N/A	N/A	Report	Report
pH	6.0 s.u. – 9.0 s.u.		N/A		N/A		6.0 s.u. – 9.0 s.u.	

#### 14. BIOMONITORING

The biomonitoring requirements at Outfalls 001 and 003 are not changing. Therefore the following information concerns only the biomonitoring requirements at Outfalls 002 and 010.

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992. Biomonitoring of the effluent is thereby required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

##### TOXICITY TESTS

##### FREQUENCY

Chronic Biomonitoring  
Chronic Biomonitoring

Once/quarter – Outfall 002  
Once/quarter – Outfall 010

At Outfall 002, since 7Q10 is less than 100 cfs (ft<sup>3</sup>/sec) and dilution ratio is less than 100:1, chronic biomonitoring requirements will be included in the permit.

At Outfall 010, although the 7Q10 is greater than 100 cfs (ft<sup>3</sup>/sec), the dilution ratio is less than 100:1, chronic biomonitoring requirements will be included in the permit.

The calculations for dilution used for chronic biomonitoring are as follows:

$$\text{Critical dilution (CD)} = (Q_d / (Q_d + Q_b)) \times 100$$

##### OUTFALL 002

Waste waters from Great Lakes Chemical Company's South Plant will be routed to the Central Plant's sedimentation pond associated with Outfall 002. The permittee is

required to conduct biomonitoring of these waters at the South Plant. Therefore biomonitoring is required at the Central Plant in the event that the permittee must discharge through Outfall 002,

Since the 7Q10 of the receiving stream is 0 cfs, the critical dilution for Outfall 002 is 100%.

### OUTFALL 010

$Q_d = \text{Permitted flow} = 3 \text{ MGD} = 4.635 \text{ cfs}$

$7Q_{10} = 750 \text{ Cfs}$

$Q_b = \text{Background flow} = (0.25) \times 7Q_{10} = 187.5 \text{ cfs}$

$CD = (4.635) / (4.635 + 187.5) \times 100 = 2.4\%$

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations for Outfall 002 are 32%, 45%, 56%, 75%, and 100% and are the following for Outfall 010 – 1.1%, 1.4%, 1.8%, 2.4%, and 3.2% (See **Attachment I** of CPP). The low-flow effluent concentration (critical dilution) is defined as **100%** effluent at Outfall 002 and **2.4%** at Outfall 010. The requirement for chronic biomonitoring tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead Minnow (*Pimephales promelas*) are indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen conductivity, and alkalinity shall be reported according to EPA/600/4-91/002, July 1994 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further biomonitoring studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if biomonitoring data submitted to the Department shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 CFR 122.62, as adopted by reference in ADEQ Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8-4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

### Administrative Records

No administrative records exist since chronic biomonitoring has not been performed at Outfall 002 and there will be no discharge from Outfall 010 until after the issuance of this modified permit.

## 15. **SAMPLE TYPE AND SAMPLING FREQUENCY**

Regulations promulgated at 40 CFR 122.44(i) (1) require the permit to establish monitoring requirements which assure compliance with permit limitations.

Requirements for sample type and sampling frequency for Outfall 010 were based on recommended frequencies for self-monitoring of discharges for flows greater than 10 MGD and the judgment of the Water Division.

Requirements for sample type and sampling frequency have been based on the current NPDES permit for Outfalls 001, 002, 003, and 004.

All pollutants listed in Part IA (i.e., Outfall 010) of this permit must be sampled concurrently with the sampling requirements for Outfall 010 at Lion Oil Company (AR0000647), Outfall 010 at El Dorado Chemical Company (AR0000752), Outfall 010 at the City of El Dorado, and Outfall 010R for the joint pipeline (AR0050296). For the purposes of this permit, concurrently shall mean that the samples are taken within a two-hour period.

## 16. **CHANGES FROM THE PREVIOUSLY ISSUED PERMIT**

1. Parts II, III, and IV have been modified.
2. The pH limits for all outfalls have been changed to 6.0 – 9.0 s.u. to ensure the required accuracy in reporting.
3. Outfall 010 has been added to the permit. This outfall will discharge to the joint pipeline.
4. The coordinates for Outfall 003 have been corrected.
5. Outfall 010 has been included in the Compliance Plan and Schedule because of the due date for submittal of a Priority Pollutant Scan.
6. Specific dates for compliance with the final limits Outfalls 001, 002, 003, and 004 have been included in the permit. The interim and final limits remain unchanged from the current permit.
7. Chronic biomonitoring requirements have been added for Outfall 002. This was done because the permittee's South Plant will be routing waste water to Outfall 002 at this facility for discharge to the joint pipeline. The outfalls at the South Plant currently have chronic biomonitoring requirements.
8. All monitoring frequencies listed as "daily" have been changed to once/day for consistency purposes.

17. **SCHEDULE OF COMPLIANCE.**

Compliance with final effluent limitations is required by the following schedule:

**Outfall 001**

Compliance is required on the effective date of the permit.

**Outfalls 002 and 003**

Compliance is required on the effective date of the permit for all effluent limitations with the exception of chloride, sulfate, and total dissolved solids at Outfalls 002 and 003. Compliance with the interim limitations for chloride, sulfate, and total dissolved solids at Outfalls 002 and 003 and the temperature limit at Outfall 003 is required on the effective date of the permit.

The permittee shall submit progress reports as follows detailing the progress toward attaining the final effluent limitations for chloride, sulfate, and total dissolved solids at Outfalls 002 and 003 and temperature at Outfall 003.

1. One year from the effective date of the permit.
2. Two years from the effective date of the permit.

The permittee shall attain compliance with the final effluent limitations for chloride, sulfate, and total dissolved solids at Outfalls 002 and 003 and temperature at Outfall 003 no later than three years from the effective date of the permit (December 31, 2006).

**Outfall 003**

The background flow evaluation required in Other Condition No. 8 in Part III of the permit shall be submitted to the Department no later than three years from the effective date of the permit (December 31, 2006). During the Department's review of this study, the permittee is required to comply with the requirements of the permit.

This study is not required if the permittee routes the water to the joint pipeline for discharge. If the permittee continues to discharge through Outfall 003, this study will be required. If the permittee stops discharging through Outfall 003 and then wishes to resume the discharge at a later date, this study will then be required.

**Outfall 004**

Compliance is required on the effective date of the permit for all effluent limitations with the exception of chloride and total dissolved solids. Compliance with the interim



limitations for chloride and total dissolved solids is required on the effective date of the permit.

The permittee shall submit progress reports as follows detailing the progress toward attaining the final effluent limitations for chloride and total dissolved solids.

1. One year from the effective date of the permit.
2. Two years from the effective date of the permit.

The permittee shall attain compliance with the final effluent limitations for chloride and total dissolved solids at Outfall 004 no later than three years from the effective date of the permit (December 31, 2006).

#### **Outfall 010**

Compliance is required on the effective date of the permit for all effluent limitations.

The permittee must perform a Priority Pollutant Scan within 90 days of the first discharge to the joint pipeline.

#### **18. MONITORING AND REPORTING.**

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

The permittee is required to submit a monthly DMR for each outfall contained in this permit even if that outfall is not in use because the effluent is being routed to the joint pipeline.

#### **19. SOURCES.**

The following sources were used to draft the permit:

- A. NPDES application No. AR0001171 received 10/05/2004.
- B. Arkansas Water Quality Management Plan (WQMP).
- C. Regulation No. 2.
- D. Regulation No. 6.
- E. 40 CFRs 122, 125, 415.
- F. NPDES permit file AR0001171.
- G. Discharge Monitoring Reports (DMRs).
- H. "Arkansas Water Quality Inventory Report 2000 (305B)", ADEQ.
- I. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.
- J. Continuing Planning Process (CPP).

- K. Technical Support Document For Water Quality-based Toxic Control.
- L. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR 131.36.
- M. Fax from EPA to ADEQ dated July 22, 2005.
- N. Letter from Arkansas Game and Fish Commission to ADEQ dated March 22, 2005.
- O. Letter from Arkansas Department of Health to ADEQ dated January 8, 2005.
- P. Letter from Clyde Temple to ADEQ dated January 27, 2005.
- Q. Letter from Francis Thompson to ADEQ dated March 7, 2005.
- R. Letter from Joseph Stockel to ADEQ dated March 15, 2005.
- S. Letter from Richard Mays to ADEQ dated Feb 23, 2005.
- T. Letter from GBMC to ADEQ dated July 6, 2005.
- U. Letter from Louisiana Department of Environmental Quality to ADEQ dated June 16, 2005 and August 3, 2005.
- V. Letter from GBMC to ADEQ dated August 3, 2005.
- W. Letter from ADEQ to GBMC dated September 30, 2005.
- X. Letter from GBMC to ADEQ dated October 6, 2005.
- Y. Letter from US EPA Region VI to ADEQ dated February 3, 2006.
- Z. E-mail from Donnie Bryant to Doug Szenher dated 06/21/2006.
- AA. Letter from Robert J. Bridges to Doug Szenher dated 06/21/2006.
- BB. E-mail from Amanda Whiteside to Doug Szenher dated 06/21/2006.
- CC. E-mail from Fred Robinson to Doug Szenher dated 06/21/2006.
- DD. Letter from Zena Mae Pesnell to Doug Szenher dated 05/23/2006.
- EE. E-mail from Chris Sinclair to Doug Szenher dated 05/30/2006.
- FF. E-mail from Ashley Sinclair to Doug Szenher dated 05/30/2006.
- GG. E-mail from William R. Howard to Doug Szenher dated 06/19/2006.
- HH. E-mail from James Waterhouse to Doug Szenher dated 06/19/2006.
- II. E-mail from Terry Graves to Doug Szenher dated 06/17/2006.
- JJ. E-mail from Nicki Miller to Doug Szenher dated 05/24/2006.
- KK. E-mail from Jimmy Sledge to Doug Szenher dated 06/14/2006.
- LL. Letter from Kent Stegall to Doug Szenher dated 06/21/2006.
- MM. Letter from Dale Wheelington to Doug Szenher dated 06/08/2006.
- NN. E-mail from Brenda Burns to Doug Szenher dated 06/06/2006.
- OO. E-mail from Mary Joe Wisener to Doug Szenher dated 06/05/2006.
- PP. E-mail from Carl Heffner to Doug Szenher dated 04/18/2006.
- QQ. E-mail from Carl Heffner to Doug Szenher dated 05/05/2006.
- RR. Letter from Carl Heffner to Doug Szenher dated 05/24/2006.
- SS. E-mail from Carl Heffner to Doug Szenher dated 06/16/2006.
- TT. Letter from Marylee M. Orr to Loretta Reiber, P.E., dated 06/19/2006.
- UU. Letter from Cara Guinn and Danny White to Doug Szenher – not dated.
- VV. Letter from Julie Nolan to Doug Szenher – not dated.
- WW. Letter from Jewel Murphy to ADEQ – not dated.
- XX. Letter from Chris Horton to Doug Szenher dated 06/20/2006.
- YY. Letter from Sam Russell and Elsie Barron dated 06/17/2006.

- ZZ. Letter from Michael Caire, M.D. to Doug Szenher dated 06/07/2006.
- AAA. Letter from Roy Reynolds to Doug Szenher dated 06/19/2006.
- BBB. Letter from Pam Hulse to Doug Szenher dated 06/06/2006.
- CCC. Letter from Jerry C. Langley to Doug Szenher dated 06/20/2006.
- DDD. Letter from Gary R. Burbank to Doug Szenher dated 06/19/2006.
- EEE. Letter from Jim W. Byrd to Doug Szenher -- not dated.
- FFF. Letter from Curtis Blankenship, Jr. to Doug Szenher -- not dated.
- GGG. Letter from Mitchell Stegall to Doug Szenher -- not dated.
- HHH. Letter from Patsy Thornton to Doug Szenher -- not dated.
- III. Letter from Jerry Ethridge to Doug Szenher -- not dated.
- JJJ. Letter from Lara Weathers to Doug Szenher -- not dated.
- KKK. Letter from Summer Doss to Doug Szenher -- not dated.
- LLL. Letter from Mary L. Thompson to Doug Szenher -- not dated.
- MMM. Letter from R. Ray Rhymes, D.D.S. to Doug Szenher -- not dated.
- NNN. Letter from Jerod L. Cross to Doug Szenher -- not dated.
- OOO. Letter from Carmen M. Cross to Doug Szenher -- not dated.
- PPP. Letter from Carol Rhymes to Doug Szenher -- not dated.
- QQQ. Letter from Doyle W. Smith to Doug Szenher -- not dated.
- RRR. Letter from Tracye Johnson to Doug Szenher -- not dated.
- SSS. Letter from Christy Kersh to Doug Szenher -- not dated.
- TTT. Letter from Pamela Brooks to Doug Szenher -- not dated.
- UUU. Letter from John Tranger to Doug Szenher -- not dated.
- VVV. Letter from Michael E. Hearnberger to Doug Szenher -- not dated.
- WWW. Letter from Jennifer Mann to Doug Szenher -- not dated.
- XXX. Letter from Catherine Karnes to Doug Szenher -- not dated.
- YYY. Letter from Joe Towery to Doug Szenher -- not dated.
- ZZZ. Letter from Sheila Towery to Doug Szenher -- not dated.
- AAAA. Letter from Frank Wimberley to Doug Szenher -- not dated.
- BBBB. Letter from Gary Thornton to Doug Szenher -- not dated.
- CCCC. 2,771 letters submitted on behalf of residents of Arkansas & Louisiana by Kent Stegall -- not dated.
- DDDD. 24 letters submitted on behalf of residents of Southern Arkansas by Sam Russell -- not dated.
- EEEE. 7 letters submitted on behalf of residents of Southern Arkansas by Simmons First Bank of South Arkansas -- not dated.
- FFFF. 17 letters submitted on behalf of residents of Louisiana by the Louisiana Environmental Action Network -- not dated.
- GGGG. 54 letters submitted on behalf of residents of Southern Arkansas by Melody Spears -- not dated.
- HHHH. Letter from "Save the Ouachita" to ADEQ dated 06/19/2006.
- IIII. Letter from Clyde Temple to ADEQ dated 06/15/2006.
- JJJJ. Letter from Arkansas Game and Fish Commission (AGFC) to Doug Szenher dated 06/12/2006.

- KKKK. Letter from the State of Louisiana's Department of Wildlife and Fisheries to Doug Szenher dated 05/22/2006.
- LLLL. Letter from the State of Louisiana's Department of Culture, Recreation & Tourism to Doug Szenher dated 05/22/2006.
- MMMM. Letter from the Louisiana Department of Environmental Quality (LDEQ) to Doug Szenher dated 06/20/2006.
- NNNN. Letter from the United States Department of the Interior – Fish and Wildlife Service (USF&WS) to Martin Maner dated 06/20/2006.
- OOOO. Letter from GBMc & Associates to Martin Maner dated 06/20/2006.
- PPPP. Letter from GBMc & Associates to Martin Maner dated 06/21/2006.
- QQQQ. Letter from GBMc & Associates to Martin Maner dated 06/20/2006.
- RRRR. Letter from Lion Oil Company – El Dorado Refinery to Martin Maner dated 06/20/2006.
- SSSS. Letter from Great Lakes Chemical Company – Central Plant to Martin Maner dated 06/21/2006.
- TTTT. Letter from El Dorado Water Utilities to Martin Maner dated 06/13/2006.
- UUUU. Letter from El Dorado Chemical Company to Martin Maner dated 06/19/2006.
- VVVV. Final Nutrient Modeling Study.
- WWWW. Comments concerning the Final Nutrient Modeling Study submitted by EPA on 06/01/2006.
- XXXX. Comments concerning the Final Nutrient Modeling Study submitted by LDEQ dated 07/10/2006 and 08/01/2006.
- YYYY. Revised Nutrient Modeling Study submitted 02/13/2007.
- ZZZZ. APCEC Docket No. 07-006-P.

20. **NPDES POINT OF CONTACT.**

For additional information, contact:

Loretta Reiber, P.E.  
NPDES Branch, Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317  
Telephone: (501) 682-0622

ATTACHMENT 1

Priority Pollutant Scan Calculation

Committer	El Dorado Iron Pipeline		
Receiving Stream	Quachita River		
Permit number	AL0050296	Or for	
Flow (Qe)	20.00 MGD	Municipalities =	Design Flow
Flow (Qb)	30.00 CFS	Industrial Discharges =	Highest monthly average flow of the last two years
Flow (Q10)	750.00 CFS		
Long Term Average =	750.00 CFS	ISS for	
Using Diffusers	yes	Yes/No	Gulf Coastal = 5.5 mg/l      Ouachita Mount = 2 mg/l
pH =	6.85	SI	Ark River Valley = 3 mg/l      Ozark Highlands = 2.5 mg/l
Total Hardness	28.00 mg/l		Boston Mount = 1.3 mg/l      Delta = 8 mg/l
ISS	5.5 mg/l		
(% of Q10 for Chronic)	0.25	Total Hardness for	
(% of Q10 for Acute)	0.13	Arkansas River = 125 mg/l	Red River = 211 mg/l
		Quachita River = 28 mg/l	St. Francis River = 103 mg/l

For the following receiving enter 0.06 in cell C17 White River = 116 mg/l

Mississippi, Arkansas, Red River	Gulf Coastal = 31 mg/l	Quachita Mount = 31 mg/l
White (Below confluence with Black River)	Ozark Highlands = 148 mg/l	Ark River Valley = 25 mg/l
Quachita (below confluence with Little Miss. Rive	Boston Mount = 25 mg/l	Delta = 81 mg/l

Upstream Flow (Qb) = 187.50 (Chronic)      97.50 (Acute)  
 Pollutant Concentration Upstream (Cb) = 0 ug/l  
 Water Effect Ratio(WER) = 1.00  
 Cancer Risk Level: 1.00E-05 (STATE); 1.00E-6 (EPA)

IWC = Instream concentration of pollutant after mixing with the receiving stream

$$IWC = (C_a \cdot Q_e + C_b \cdot Q_b) / (Q_b + Q_e)$$

Ce = Pollutant concentration in the effluent (ug/l) : Reported value as Total Recov

Reported Value (Ce) (ug/l)	Ca '2,13 (ug/l)	EPA Acute (ug/l)	STATE Acute (ug/l)	IWC Acute (ug/l)	EPA Chronic (ug/l)	STATE Chronic (ug/l)	IWC Chronic (ug/l)	EPA Bioacc. (ug/l)	STATE Bioacc. (ug/l)	IWC Bioacc. (ug/l)	Violation of Acute	Violation of Chr	Bio
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MEALS and CYANIDE

1. Antimony Total	0.00	0.00	9000	.....	0.00	1600	.....	0.00	4300	.....	0.00	NO	NO	NO
2. Arsenic Total	0.00	0.00	633.81	.....	0.00	334.51	.....	0.00	1.40	.....	0.00	NO	NO	NO
3. Beryllium Total	0.00	0.00	130.00	.....	0.00	5.30	.....	0.00	0.076	.....	0.00	NO	NO	NO
4. Cadmium Total*	0.00	0.00	.....	3.91	0.00	.....	1.59	0.00	.....	0.00	0.00	NO	NO	NO
5. Chromium (III)*	0.00	0.00	.....	925.86	0.00	.....	300.31	0.00	.....	0.00	0.00	NO	NO	NO
7. Chromium (Hex)	0.00	0.00	.....	15.71	0.00	.....	10.58	0.00	.....	0.00	0.00	NO	NO	NO
8. Copper Total*	0.00	0.00	.....	13.44	0.00	.....	10.02	0.00	.....	0.00	0.00	NO	NO	NO
9. Lead Total*	0.00	0.00	.....	77.87	0.00	.....	3.03	0.00	.....	0.00	0.00	NO	NO	NO
10. Mercury Total*	0.00	0.00	.....	6.70	0.00	.....	0.0120	0.00	0.15	.....	0.00	NO	NO	NO
12. Nickel Total*	0.00	0.00	.....	973.88	0.00	.....	108.16	0.00	4600	.....	0.00	NO	NO	NO
13. Selenium Total	0.00	0.00	.....	20.00	0.00	.....	5.00	0.00	.....	0.00	0.00	NO	NO	NO
14. Silver Total*	0.00	0.00	.....	12672	0.00	.....	.....	0.00	.....	0.00	0.00	NO	NO	NO
15. Thallium Total	0.00	0.00	.....	1400	0.00	40.00	.....	0.00	6.30	.....	0.00	NO	NO	NO
16. Zinc Total*	0.00	0.00	.....	120.05	0.00	.....	109.63	0.00	.....	0.00	0.00	NO	NO	NO
120. Phenols, Total	0.00	0.00	.....	.....	.....	.....	.....	0.00	.....	0.00	0.00	NO	NO	NO
17. Cyanide Total	0.00	0.00	.....	22.36	0.00	.....	5.20	0.00	220000	.....	0.00	NO	NO	NO

\* See linear partition coefficient (Page 5)

Reported	Ca '2,13	EPA	STATE	IWC	EPA	STATE	IWC	EPA	STATE	IWC	Violation of
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	Value (Ce) (ug/l)	(ug/l)	Acute (ug/l)	Acute (ug/l)	Acute (ug/l)	Chronic (ug/l)	Chronic (ug/l)	Chronic (ug/l)	Bioacc (ug/l)	Bioacc. (ug/l)	Bioacc. (ug/l)	Acute Chr	Bio	
<b>DIOXIN</b>														
18 2,3,7,8-TCDF	0.00	0.00	0.01		0.00			0.00	1.40E-07	1.00E-09	0.00	NO	NO	NO
<b>VOLATILE COMPOUNDS</b>														
19 Acrolein	0.00	0.00	58.00		0.00	21.00		0.00	780.00		0.00	NO	NO	NO
20 Acrylonitrile	0.00	0.00	7550		0.00	2600		0.00	6.60		0.00	NO	NO	NO
21 Benzene	0.00	0.00	5300		0.00			0.00	710.00		0.00	NO	NO	NO
22 Bromoform	0.00	0.00			0.00			0.00	3600.00		0.00	NO	NO	NO
23 Carbon Tetr	0.00	0.00	35200		0.00			0.00	44.00		0.00	NO	NO	NO
24 Chlorobenzene	0.00	0.00	250.00		0.00	50.00		0.00	2.10E+04		0.00	NO	NO	NO
25 Chlorodibromomethane	0.00	0.00			0.00			0.00	340.00		0.00	NO	NO	NO
26 Chloroethane	0.00	0.00			0.00			0.00			0.00	NO	NO	NO
27 2-Chloroethylvinyl ether	0.00	0.00			0.00			0.00			0.00	NO	NO	NO
28 Chloroform	0.00	0.00	28900		0.00	1240		0.00	4700.00		0.00	NO	NO	NO
29 Dichlorobromomethane	0.00	0.00			0.00			0.00	220.00		0.00	NO	NO	NO
30 1,1-Dichloroethane	0.00	0.00			0.00			0.00			0.00	NO	NO	NO
31 1,2-Dichloroethane	0.00	0.00	118000		0.00	20000		0.00	990.00		0.00	NO	NO	NO
32 1,1-Dichloroethylene	0.00	0.00	11600		0.00			0.00	32.00		0.00	NO	NO	NO
33 1,2-Dichloropropane	0.00	0.00	23000		0.00	5700		0.00			0.00	NO	NO	NO
34 1,3-Dichloropropylene	0.00	0.00	6060		0.00	244.00		0.00	1700.00		0.00	NO	NO	NO
35 Ethylbenzene	0.00	0.00	32000		0.00			0.00	29000.00		0.00	NO	NO	NO
37 Methyl Chloride	0.00	0.00			0.00			0.00			0.00	NO	NO	NO
36 Methyl bromide	0.00	0.00			0.00			0.00	4000.00		0.00	NO	NO	NO
38 Methylene chloride	0.00	0.00			0.00			0.00	16000.00		0.00	NO	NO	NO
39 1,1,2,2-Tetrachloroethane	0.00	0.00	9320		0.00	2400		0.00	110.00		0.00	NO	NO	NO
40 Tetrachloroethylene	0.00	0.00	5280		0.00	840		0.00	88.50		0.00	NO	NO	NO
41 Toluene	0.00	0.00	17500		0.00			0.00	2.0E+05		0.00	NO	NO	NO
42 1,2-trans-dichloroethylene	0.00	0.00			0.00			0.00			0.00	NO	NO	NO
44 1,1,2,2-Trichloroethane	0.00	0.00	18000		0.00	9400		0.00	420.00		0.00	NO	NO	NO
43 1,1,1-Trichloroethane	0.00	0.00	18000		0.00			0.00			0.00	NO	NO	NO
45 Trichloroethylene	0.00	0.00	45000		0.00	21900		0.00	810.00		0.00	NO	NO	NO
46 Vinyl Chloride	0.00	0.00			0.00			0.00	5250.00		0.00	NO	NO	NO

	Reported Value (Ct) (ug/l)	Ca*2.13 (ug/l)	EPA Acute (ug/l)	STATE Acute (ug/l)	IWC Acute (ug/l)	EPA Chronic (ug/l)	STATE Chronic (ug/l)	IWC Chronic (ug/l)	EPA Bioacc. (ug/l)	STATE Bioacc. (ug/l)	IWC Bioacc. (ug/l)	Violation of Acute Ctr	Bio
<b>ACID COMPOUNDS</b>													
47 2-Chlorophenol	0.00	0.00	4380		0.00			0.00			0.00	NO	NO
48 2,4-Dichlorophenol	0.00	0.00	2020		0.00	365		0.00			0.00	NO	NO
49 2,4-Dimethylphenol	0.00	0.00			0.00			0.00			0.00	NO	NO
50 4,6-Dimethyl-Cresol	0.00	0.00			0.00			0.00	765.00		0.00	NO	NO
51 2,4-Dimethylphenol	0.00	0.00			0.00			0.00	14000		0.00	NO	NO
52 5,7-Nitrophenols	0.00	0.00	230		0.00	150		0.00			0.00	NO	NO
54 4-Chloro-3-methylphenol	0.00	0.00	30.00		0.00			0.00			0.00	NO	NO
55 Pentachlorophenol	0.00	0.00	2.48	7.80	0.00	4.92	4.92	0.00	82.00		0.00	NO	NO
56 Phenol	0.00	0.00	10200		0.00	2560		0.00	4600000		0.00	NO	NO
57 2,4,6-Trichlorophenol	0.00	0.00			0.00			0.00	65.00		0.00	NO	NO
<b>BASENEUTRAL COMPOUNDS</b>													
58 Acenaphthene	0.00	0.00	1700		0.00	520		0.00			0.00	NO	NO
59 Acenaphthylene	0.00	0.00			0.00			0.00			0.00	NO	NO
60 Anthracene	0.00	0.00			0.00			0.00	110000.00		0.00	NO	NO
61 Benzidine	0.00	0.00	2500		0.00			0.00	5.4E-03		0.00	NO	NO
62 Benzo(a)anthracene	0.00	0.00			0.00			0.00	0.310		0.00	NO	NO
63 Benzo(a)pyrene	0.00	0.00			0.00			0.00	0.310		0.00	NO	NO
64 3,4-benzofluoranthene	0.00	0.00			0.00			0.00	0.310		0.00	NO	NO
65 Benzo(g,h,i)perylene	0.00	0.00			0.00			0.00			0.00	NO	NO
66 Benzo(k)fluoranthene	0.00	0.00			0.00			0.00	0.310		0.00	NO	NO
67 Bis(2-chlorophenoxy)methane	0.00	0.00			0.00			0.00			0.00	NO	NO
68 Bis(2-chlorophenyl) ether	0.00	0.00			0.00			0.00	14.00		0.00	NO	NO
69 Bis(2-chloroisopropyl) eth	0.00	0.00			0.00			0.00	1.7E-05		0.00	NO	NO
70 Bis(2-ethylhexyl)phthalate	0.00	0.00			0.00			0.00	59.00		0.00	NO	NO
71 4-Bromophenyl phenyl ether	0.00	0.00			0.00			0.00			0.00	NO	NO
72 Butylbenzyl phthalate	0.00	0.00			0.00			0.00			0.00	NO	NO
73 2-chloroethylalene	0.00	0.00	1600		0.00			0.00			0.00	NO	NO
74 4-chlorophenyl phenyl ether	0.00	0.00			0.00			0.00			0.00	NO	NO
75 Chrysene	0.00	0.00			0.00			0.00	0.310		0.00	NO	NO
76 Dibenzo(a,h)anthracene	0.00	0.00			0.00			0.00	0.310		0.00	NO	NO
77-79 Dichlorobenzene(1,2,1,3-1,4)	0.00	0.00	1120		0.00	763		0.00	2600.00		0.00	NO	NO
80 3,3-Dichlorobenzidine	0.00	0.00			0.00			0.00	0.770		0.00	NO	NO
81 Diethyl Phthalate	0.00	0.00			0.00			0.00	1.2E+05		0.00	NO	NO
82 Dimethyl phthalate	0.00	0.00			0.00			0.00	2.9E+06		0.00	NO	NO
83 Di-n-Butyl phthalate	0.00	0.00			0.00			0.00	1.2E+04		0.00	NO	NO
84 2,4-Dinitrotoluene	0.00	0.00	330		0.00	230		0.00	91.00		0.00	NO	NO
85 2,6-Dinitrotoluene	0.00	0.00			0.00			0.00			0.00	NO	NO
86 Di-n-octyl phthalate	0.00	0.00			0.00			0.00			0.00	NO	NO
87 1,2-diphenylhydrazine	0.00	0.00	270		0.00			0.00	5.400		0.00	NO	NO
88 Fluorethene	0.00	0.00	3980		0.00			0.00	370.00		0.00	NO	NO
89 Fluorene	0.00	0.00			0.00			0.00	14000.000		0.00	NO	NO
90 Hexachlorobenzene	0.00	0.00			0.00			0.00	0.00770		0.00	NO	NO
91 Hexachlorobutadiene	0.00	0.00	90.00		0.00	9.30		0.00	500.000		0.00	NO	NO
92 Hexachlorocyclopentadiene	0.00	0.00	7.00		0.00	5.20		0.00	1.70E+04		0.00	NO	NO
93 Hexachloroethane	0.00	0.00	980		0.00	540		0.00	89.00		0.00	NO	NO
Hexachlorocyclohexane	0.00	0.00	2.00	2.00	0.00	0.08	0.08	0.00			0.00	NO	NO
94 Indeno(1,2,3-cd)pyrene	0.00	0.00			0.00			0.00	0.31000		0.00	NO	NO
95 Isophorone	0.00	0.00	117000		0.00			0.00	6000		0.00	NO	NO
96 Naphthalene	0.00	0.00	2300		0.00	620		0.00			0.00	NO	NO
97 Nitrobenzene	0.00	0.00	27000		0.00			0.00	1900.00		0.00	NO	NO
98 N-nitrosodimethylamine	0.00	0.00			0.00			0.00	81.00		0.00	NO	NO
99 N-nitrosodipropylamine	0.00	0.00			0.00			0.00			0.00	NO	NO
100 N-nitrosodiphenylamine	0.00	0.00			0.00			0.00	160.00		0.00	NO	NO
101 Phenanthrene	0.00	0.00			0.00			0.00			0.00	NO	NO
103 1,2,4-trichlorobenzene	0.00	0.00			0.00			0.00			0.00	NO	NO

Pesticides	Reported	Ce 2 13	EPA	STATE	IWC	EPA	STATE	IWC	EPA	STATE	IWC	Violation of		
	Value (Cr) (ug/l)	(ug/l)	Acute (ug/l)	Acute (ug/l)	Acute (ug/l)	Chronic (ug/l)	Chronic (ug/l)	Chronic (ug/l)	Bioacc. (ug/l)	Bioacc. (ug/l)	Bioacc. (ug/l)	Acute	Chr	Bio
104 Aldrin	0.00	0.00	3.00	3.00	0.00	.....	.....	0.00	0.00140	.....	0.00	NO	NO	NO
105 Alpha-BHC	0.00	0.00	.....	2.00	0.00	.....	0.08	0.00	1.300E-01	0.0373	0.00	NO	NO	NO
106 Beta-BHC	0.00	0.00	.....	2.00	0.00	.....	0.08	0.00	0.4600	.....	0.00	NO	NO	NO
107 Gamma-BHC	0.00	0.00	2.00	2.00	0.00	0.08	0.08	0.00	0.6300	.....	0.00	NO	NO	NO
108 Delta-BHC	0.00	0.00	.....	2.00	0.00	.....	0.08	0.00	.....	.....	0.00	NO	NO	NO
109 Chlordane	0.00	0.00	2.40	2.40	0.00	0.0043	0.0043	0.00	5.900E-03	0.0050	0.00	NO	NO	NO
110 4,4'-DDE	0.00	0.00	1.10	1.10	0.00	0.0010	0.0010	0.00	0.0059	.....	0.00	NO	NO	NO
111 4,4'-DDE	0.00	0.00	.....	1.10	0.00	.....	0.0010	0.00	0.0059	.....	0.00	NO	NO	NO
112 4,4'-DDD	0.00	0.00	.....	1.10	0.00	.....	0.0010	0.00	0.0084	.....	0.00	NO	NO	NO
113 Dieldrin	0.00	0.00	2.50	2.50	0.00	0.0019	0.0019	0.00	1.400E-03	0.0012	0.00	NO	NO	NO
114 Alpha-endosulfan	0.00	0.00	0.22	0.22	0.00	0.0560	0.0560	0.00	2.00	.....	0.00	NO	NO	NO
115 Beta-endosulfan	0.00	0.00	0.22	0.22	0.00	0.0560	0.0560	0.00	2.00	.....	0.00	NO	NO	NO
116 Endosulfan sulfate	0.00	0.00	.....	0.22	0.00	.....	0.0560	0.00	2.00	.....	0.00	NO	NO	NO
117 Endrin	0.00	0.00	0.18	0.18	0.00	0.0023	0.0023	0.00	8.100E-01	.....	0.00	NO	NO	NO
118 Endrin aldehyde	0.00	0.00	.....	0.18	0.00	.....	0.0023	0.00	8.100E-01	.....	0.00	NO	NO	NO
119 Heptachlor	0.00	0.00	0.52	0.52	0.00	0.0038	0.0038	0.00	0.0021	.....	0.00	NO	NO	NO
120 Heptachlor epoxide	0.00	0.00	0.52	0.52	0.00	0.0038	0.0038	0.00	0.0011	.....	0.00	NO	NO	NO
121 PCB-1242	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
122 PCB-1254	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
123 PCB-1221	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
124 PCB-1232	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
125 PCB-1248	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
126 PCB-1260	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
127 PCB-1016	0.00	0.00	.....	.....	0.00	0.0140	0.0140	0.00	4.500E-04	4.00E-04	0.00	NO	NO	NO
128 Toxaphene	0.00	0.00	0.73	0.73	0.00	0.00020	0.0002	0.00	4.500E-04	0.0063	0.00	NO	NO	NO
130 Chlorpyrifos	0.00	0.00	0.083	0.083	0.00	0.041	0.041	0.00	.....	.....	0.00	NO	NO	NO



	Reported Value (Ca) (ug/l)	Ca-7-13 (ug/l)	STATE Acute (ug/l)	IWC Acute (ug/l)	STATE Chronic (ug/l)	IWC Chronic (ug/l)	STATE Bioacc (ug/l)	IWC Bioacc (ug/l)	Violation of Acute	Violation of Chr	Bio
AWQ, Reg No 2											
Alpha-BHC	0.00	0.00	2.00	0.00	0.08	0.00	0.0373	0.00	NO	NO	NO
Beta-BHC	0.00	0.00	2.00	0.00	0.08	0.00			NO	NO	
Gamma-BHC	0.00	0.00	2.00	0.00	0.08	0.00			NO	NO	
Delta-BHC	0.00	0.00	2.00	0.00	0.08	0.00			NO	NO	
Pentachlorophenol	0.00	0.00	7.80	0.00	4.92	0.00			NO	NO	
Aldrin	0.00	0.00	3.00	0.00					NO		
Chlordane	0.00	0.00	2.40	0.00	0.0043	0.00	0.005	0.00	NO	NO	NO
4,4'-DDT	0.00	0.00	1.10	0.00	0.0010	0.00			NO	NO	
4,4'-DDE	0.00	0.00	1.10	0.00	0.0010	0.00			NO	NO	
4,4'-DDD	0.00	0.00	1.10	0.00	0.0010	0.00			NO	NO	
Dieldrin	0.00	0.00	2.50	0.00	0.0019	0.00	0.0012	0.00	NO	NO	NO
Alpha-endosulfan	0.00	0.00	0.22	0.00	0.0560	0.00			NO	NO	
Beta-endosulfan	0.00	0.00	0.22	0.00	0.0560	0.00			NO	NO	
Endosulfan sulfate	0.00	0.00	0.22	0.00	0.0560	0.00			NO	NO	
Endrin	0.00	0.00	0.18	0.00	0.0023	0.00			NO	NO	
Endrin aldehyde	0.00	0.00	0.18	0.00	0.0023	0.00			NO	NO	
Heptachlor	0.00	0.00	0.52	0.00	0.0038	0.00			NO	NO	
Heptachlor epoxide	0.00	0.00	0.52	0.00	0.0038	0.00			NO	NO	
Toxaphene	0.00	0.00	0.73	0.00	0.0002	0.00	0.0063	0.00	NO	NO	NO
Chlorpyrifos	0.00	0.00	0.083	0.00	0.0410	0.00			NO	NO	
Cadmium Total*	0.00	0.00	3.91	0.00	1.69	0.00			NO	NO	
Chromium (hex)	0.00	0.00	15.71	0.00	13.58	0.00			NO	NO	
Copper Total*	0.00	0.00	13.44	0.00	10.02	0.00			NO	NO	
Lead Total*	0.00	0.00	77.87	0.00	3.03	0.00			NO	NO	
Mercury Total*	0.00	0.00	6.70	0.00	0.0120	0.00			NO	NO	
Nickel Total*	0.00	0.00	973.88	0.00	108.16	0.00			NO	NO	
Selenium Total	0.00	0.00	20.00	0.00	5.00	0.00			NO	NO	
Silver Total*	0.00	0.00	1.2672	0.00					NO		
Zinc Total*	0.00	0.00	120.05	0.00	109.63	0.00			NO	NO	
Chromium (Tri)*	0.00	0.00	925.86	0.00	300.34	0.00			NO	NO	
Cyanide Total	0.00	0.00	22.36	0.00	5.20	0.00			NO	NO	
Beryllium Total	0.00	0.00					0.076	0.00			NO
PCB-1212	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
PCB-1254	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
PCB-1221	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
PCB-1232	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
PCB-1248	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
PCB-1260	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
PCB-1016	0.00	0.00			0.0140	0.00	4.00E-04	0.00	NO	NO	
2,3,7,8-TCDF	0.00	0.00					1E-06	0.00			NO

\* See Linear Partition Coefficient (Page 6)

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Linear Partition Coefficients

Metals	Streams	
	Kp	a
Arsenic		-0.73
Cadmium		-1.13
Chromium(3)		-0.93
Copper		-0.74
Lead		0.80
Mercury		-1.14
Nickel		-0.57
Zinc		-0.70
Silver		-1.03

$Kp = Kpc \times ISS^a$

Kp = Linear Partition Coefficient  
 ISS = Total Suspended Solids (mg/l)  
 Kpc = found from above table  
 a = found from above table

$C/Ci = 1 / (1 + Kp \times ISS \times 10^{-6})$

C / Ci = Fraction of Metal Dissolved

Metals	Streams	
	Kp	C / Ci
Arsenic	138285	0.5680
Cadmium	582707	0.2378
Chromium(3)	688338	0.2089
Copper	294554	0.3817
Lead	715926	0.2025
Mercury	415322	0.3045
Nickel	185434	0.4951
Zinc	379015	0.3242
Silver	414608	0.3048

Total Metal = Dissolved Metal / (C/Ci)

AQUATIC LIFE CRITERIA (DISSOLVED ACUTE VALUES)

Pollutant	Dissolved(ug/l)	Formula
Cadmium	0.93	WER X Conversion Factor <sup>1</sup> X e <sup>[1.128ln(hardness)]</sup> -1.828
Chromium(III)	193.46	WER X 0.316 X e <sup>[0.819ln(hardness)]</sup> +3.688
Chromium(V)	15.71	WER X 0.982 X 16
Copper	5.13	WER X 0.56 X e <sup>[0.9422ln(hardness)]</sup> -1.464
Lead	15.77	WER X Conversion Factor <sup>2</sup> X e <sup>[1.273ln(hardness)]</sup> -1.460
Mercury	2.04	WER X 0.65 X 2.4
Nickel	482.14	WER X 0.998 X e <sup>[0.8460ln(hardness)]</sup> +3.3612
Silver	0.3863	WER X 0.85 X e <sup>[1.72ln(hardness)]</sup> -6.52
Zinc	38.92	WER X 0.978 X e <sup>[0.8473ln(hardness)]</sup> +0.8604

<sup>1</sup> 1.136672 - [(ln hardness)(0.041838)]

<sup>2</sup> 1.46203 - [(ln hardness)(0.145712)]

AQUATIC LIFE CRITERIA (DISSOLVED CHRONIC VALUES)

Pollutant	Dissolved(ug/l)	Formula
Cadmium	0.40	WER X Conversion Factor <sup>1</sup> X e <sup>[0.7852ln(hardness)]</sup> -3.490
Chromium(III)	62.76	WER X 0.86 X e <sup>[0.819ln(hardness)]</sup> +1.561
Chromium(V)	10.58	WER X 10
Copper	3.82	WER X 0.96 X e <sup>[0.8545ln(hardness)]</sup> -1.465
Lead	0.61	WER X Conversion Factor <sup>2</sup> X e <sup>[1.273ln(hardness)]</sup> -4.705
Nickel	53.60	WER X 0.997 X e <sup>[0.8460ln(hardness)]</sup> +1.1645
Zinc	35.54	WER X 0.986 X e <sup>[0.8473ln(hardness)]</sup> +0.7614

<sup>1</sup> 1.101672 - [(ln hardness)(0.041838)]

<sup>2</sup> 1.46203 - [(ln hardness)(0.145712)]

ATTACHMENT 2

Permittee	El Dorado Joint Pipeline		
Receiving Stream	Quachita River		
Permit number	AR0050296		
Flow (On)	20.00 MGD		
Flow (Off)	30.90 CFS		
7Q10 =	750.00 CFS		
Long Term Average =	750.00 CFS		
Using Diffusers	yes	Yes/No	
pH =	6.85 SU		
Total Hardness	20.00 mg/l		
TSS	5.50 mg/l		
(% of 7Q10 for Chronic)	0.25	Ob	187.50
(% of 7Q10 for Acute)	0.13	Ob	97.50
Ch	0.00 ug/l		
AMF factor	1.55		
DML/AML	3.11		

	WQSc	WLAa	LTAa	WQSc	WLAc	LTAc	LTAa/LTAc	AML, ug/l	DML, ug/l	WQSc	WLAb	AML, ug/l	DML, ug/l
Carbonium Total	3.91	16.26	9.27	1.6891	11.94	8.60	8.60	13.32	26.73				
Chromium (hex)	15.71	65.29	37.21	10.5820	74.79	53.85	37.21	57.68	115.74				
Copper Total	13.44	55.83	31.82	10.0216	70.83	51.00	31.82	49.33	98.98				
Lead Total	77.87	323.56	184.43	3.0343	21.45	15.44	15.44	23.93	48.02				
Mercury Total	6.70	27.84	15.87	0.0120	0.08	0.06	0.06	0.09	0.19				
Nickel Total	973.88	4046.79	2306.67	.....	764.45	550.40	550.40	853.12	1711.75				
Selenium Total	20.00	83.11	47.37	5.0000	35.34	25.44	25.44	39.44	79.13				
Silver Total	1.27	5.27	3.00	.....	.....	.....	.....	3.00	4.65	9.33			
Zinc Total	120.05	498.87	284.35	.....	774.85	557.89	284.35	440.75	884.34				
Chromium (Tr)	925.86	3847.28	2192.95	.....	2122.80	1528.42	1528.42	2369.04	4753.37				
Cyanide Total	22.35	92.91	52.96	5.2000	36.75	26.46	26.46	41.02	82.30				

\* See Linear Partition Coefficient (Page 6)

	AML, lb/d	DML, lb/d
Carbonium Total	2.22	4.46
Chromium (hex)	9.62	19.30
Copper Total	8.23	16.51
Lead Total	3.99	8.01
Nickel Total	142.30	285.52
Selenium Total	6.58	13.20
Silver Total	0.78	1.56
Zinc Total	73.52	147.51
Chromium (Tr)	395.16	792.86
Cyanide Total	6.84	13.73

ATTACHMENT 3

	Joint Pipeline	Great Lakes Chemical Company			
Flow, MGD	20			3	3
Parameter	AML, lb/day	IDML, lb/day	AML, lb/day	IDML, lb/day	
Cadmium Total	2.22	4.46	0.33	0.67	
Chromium (hex)	9.62	19.3	1.44	2.90	
Copper Total	8.23	16.51	1.23	2.48	
Lead Total	3.99	8.01	0.60	1.20	
Nickel Total	142.3	285.52	21.35	42.83	
Selenium Total	6.58	13.2	0.99	1.98	
Silver Total	0.78	1.56	0.12	0.23	
Zinc Total	73.52	147.51	11.03	22.13	
Chromium (Tr)	395.16	792.86	59.27	118.93	
Cyanide Total	6.84	13.73	1.03	2.06	