

**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.),

The applicant's mailing address is:

El Dorado Chemical Company
P.O. Box 231
El Dorado, AR 71731-0231

The facility address is:

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

is authorized to discharge treated process wastewater, treated groundwater, contaminated stormwater, and treated domestic wastewater from a facility located as follows: on the north side of the City of El Dorado, approximately 1 mile west of Hwy. 7 Spur in Union County, Arkansas.

Latitude: 33° 15' 47.28"; Longitude: 92° 40' 58.75"

to receiving waters named:

Outfalls 001, 002, 003, 006, and 007 – an unnamed tributary of Flat Creek (a/k/a ELCC tributary), thence to Flat Creek, thence to Haynes Creek, thence to Smackover Creek, thence to the Ouachita River in Segment 2D of the Ouachita River Basin.


Outfall 010 (effluent from Outfall 001) – via the joint pipeline to the Ouachita River approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam in Segment 2D of the Ouachita River Basin.

The outfalls are located at the following coordinates:

Outfall 001: Latitude: 33° 15' 33.8"; Longitude: 92° 41' 14.2"
Outfall 002: Latitude: 33° 15' 45.3"; Longitude: 92° 41' 20.3"
Outfall 003: Latitude: 33° 15' 38"; Longitude: 92° 41' 07"
Outfall 006: Latitude: 33° 16' 03"; Longitude: 92° 41' 02"
Outfall 007: Latitude: 33° 16' 06.3"; Longitude: 92° 41' 16"
Outfall 010: Latitude: 33° 15' 32.6"; Longitude: 92° 41' 14.4"

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply on or before 180 days prior to the expiration of the permit for permit coverage past the expiration date.

Effective Date: October 1, 2017
Expiration Date: September 30, 2022


Caleb J. Osborne
Associate Director, Office of Water Quality
Arkansas Department of Environmental Quality


Issue Date

**PART I
 PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated process wastewater, treated groundwater, sanitary wastewater from septic tanks, and contaminated stormwater.

During the period beginning on the effective date and lasting three years, the permittee is authorized to discharge from Outfall 001. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	continuous	record
Total Suspended Solids (TSS)	700.6	1050.8	30	45	three/week	24-hr composite
Ammonia, NH3-N	Report ⁵	Report ⁵	12	18	three/week	24-hr composite
Nitrates as N	Report ⁵	Report ⁵	Report	Report	three/week	24-hr composite
Dissolved Oxygen						
(May – October)	N/A	N/A	4.0 (Minimum)		three/week	grab
(November – April)	N/A	N/A	5.0 (Minimum)		three/week	grab
Total Recoverable Copper ¹	0.28	0.57	12.2 µg/l	24.48 µg/l	once/month	24-hr composite
Total Recoverable Zinc ¹	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report	Report	38	57	once/month	24-hr composite
Sulfates	Report	Report	81	122	once/month	24-hr composite
Total Dissolved Solids	Report	Report	237	356	once/month	24-hr composite
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	continuous ⁴	grab ⁴
<u>Whole Effluent Lethality</u> (7-day NOEC) ^{2,3} 51714 (<i>P. promelas</i>) 51710 (<i>C. dubia</i>)	<u>Daily Average</u> <u>Minimum</u> Not < 100%		<u>7-day Minimum</u> Not <100%		once/2 months	24-hr composite
<u>Pimephales promelas (Chronic)</u> ³ Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) 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/2 months once/2 months once/2 months once/2 months once/2 months	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<u>Ceriodaphnia dubia (Chronic)</u> ³ Pass/Fail Growth (7-day NOEC) TLP3B Pass/Fail Lethality (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (reproduction) 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/2 months once/2 months once/2 months once/2 months once/2 months	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite

¹ See Condition No. 3 of Part II (Metals Requirements).

² See Condition No. 11 of Part II (Chronic WET Limits Conditions).

³ The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) 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. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

⁴ See Condition No. 20 of Part II (pH monitoring).

⁵ Technology based limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken following Lake Kildeer and prior to entering the receiving stream.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated process wastewater, treated groundwater, sanitary wastewater from septic tanks, and contaminated stormwater.

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	continuous	record
Total Suspended Solids (TSS)	700.6	1050.8	30	45	three/week	24-hr composite
Ammonia, NH3-N						
(April – October)	Report ⁵	Report ⁵	2.43	3.65	three/week	24-hr composite
(November – March)	Report ⁵	Report ⁵	5.5	8.25	three/week	24-hr composite
Nitrates as N	Report ⁶	Report ⁶	Report	Report	three/week	24-hr composite
Dissolved Oxygen						
(May – October)	N/A	N/A	4.0 (Minimum)		three/week	grab
(November – April)	N/A	N/A	5.0 (Minimum)		three/week	grab
Total Recoverable Copper ¹	0.28	0.57	12.2 µg/l	24.48 µg/l	once/month	24-hr composite
Total Recoverable Zinc ¹	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report ⁵	Report ⁵	19	28.5	once/month	24-hr composite
Sulfates	Report ⁵	Report ⁵	41	61.5	once/month	24-hr composite
Total Dissolved Solids	Report ⁵	Report ⁵	138	207	once/month	24-hr composite
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	continuous ⁴	grab ⁴
Whole Effluent Toxicity (7-day NOEC) ^{2,3} 51714 (<i>P. promelas</i>) 51710 (<i>C. dubia</i>)	<u>Daily Average Minimum Lethality</u> Not < 100%		<u>7-day Minimum Lethality</u> Not <100%		once/2 months	24-hr composite
	<u>Daily Average Minimum Sub- Lethality</u> not < 80%		<u>7-Day Minimum Sub- Lethality</u> not <80%		once/2 months	24-hr composite
<u>Pimephales promelas (Chronic)</u> ³ Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) 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/2 months once/2 months once/2 months once/2 months once/2 months	24-hr composite 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		
<u>Ceriodaphnia dubia (Chronic)</u> ³ Pass/Fail Growth (7-day NOEC)TLP3B Pass/Fail Lethality (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (reproduction) 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/2 months once/2 months once/2 months once/2 months once/2 months	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite

¹ See Condition No. 3 of Part II (Metals Requirements).

² See Condition No. 11 of Part II (Chronic WET Limits Conditions).

³ The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) 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. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

⁴ See Condition No. 20 of Part II (pH monitoring).

⁵ Limits based on TMDL are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 003.

⁶ Technology based limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken following Lake Kildeer and prior to entering the receiving stream.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 – overflow pond (treated process wastewater, treated groundwater, sanitary wastewater from septic tanks, and contaminated stormwater).

During the period beginning on the effective date and lasting three years, the permittee is authorized to discharge from Outfall 002. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day	estimate
Total Suspended Solids (TSS) ³	N/A	N/A	Report ³	Report ³	once/day	grab
Ammonia (NH3-N)	Report ⁴	Report ⁴	12	18	once/day	grab
Nitrates as N	Report ⁴	Report ⁴	Report	Report	once/day	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/day	grab
Total Recoverable Copper ¹	N/A	N/A	12.2 µg/l	24.48 µg/l	once/month	24-hr composite
Total Recoverable Lead ¹	N/A	N/A	3.8 µg/l	7.62 µg/l	once/month	24-hr composite
Total Recoverable Zinc ¹	N/A	N/A	115.62 µg/l	231.99 µg/l	once/month	24-hr composite
Chlorides	Report	Report	Report	Report	once/month	grab
Sulfates	Report	Report	250	375	once/month	grab
Total Dissolved Solids	Report	Report	500	750	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 WET Testing ²						
<u>Pimephales promelas (Chronic)</u> ² Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) 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/month once/month once/month once/month once/month	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<u>Ceriodaphnia dubia (Chronic)</u> ² Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) 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/month once/month once/month once/month once/month	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite

¹ See Condition No. 3 of Part II (Metals Requirements).
² See Condition No. 9 of Part II (Chronic WET testing Requirements).
³ See Condition No. 18 of Part II (TSS benchmark).
⁴ Technology based limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken following discharge from Lake Lee and prior to entering the receiving stream.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 – overflow pond (treated process wastewater, treated groundwater, sanitary wastewater from septic tanks, and contaminated stormwater).

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 002. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day	estimate
Total Suspended Solids (TSS) ⁵	N/A	N/A	Report	Report	once/day	grab
Ammonia (NH3-N)						
(April – October)	Report ³	Report ³	0	0	once/day	grab
(November – March)	Report ³	Report ³	0.32	0.48	once/day	grab
Nitrates as N	Report ⁴	Report ⁴	Report	Report	once/day	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/day	grab
Total Recoverable Copper ¹	N/A	N/A	12.2 µg/l	24.48 µg/l	once/month	24-hr composite
Total Recoverable Lead ¹	N/A	N/A	3.8 µg/l	7.62 µg/l	once/month	24-hr composite
Total Recoverable Zinc ¹	N/A	N/A	115.62 µg/l	231.99 µg/l	once/month	24-hr composite
Chlorides	Report ³	Report ³	19	28.5	once/month	grab
Sulfates	Report ³	Report ³	41	61.5	once/month	grab
Total Dissolved Solids	Report ³	Report ³	138	207	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 WET Testing ²						
<u>Pimephales promelas (Chronic)¹</u> Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) 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/month once/month once/month once/month once/month	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite
<u>Ceriodaphnia dubia (Chronic)¹</u> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) 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/month once/month once/month once/month once/month	24-hr composite 24-hr composite 24-hr composite 24-hr composite 24-hr composite

¹ See Condition No. 3 of Part II (Metals Requirements).
² See Condition No. 9 of Part II (Chronic WET Testing Requirements).
³ TMDL based mass limit is implemented at the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007.
⁴ Technology based limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002.
⁵ See Condition No. 18 of Part II (TSS benchmark).

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken following discharge from Lake Lee and prior to entering the receiving stream.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 003 - treated domestic wastewater.

During the period beginning on the effective date and lasting three years, the permittee is authorized to discharge from Outfall 003. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day	estimate
Carbonaceous Biochemical Oxygen Demand (CBOD5)	1.4	2.1	10	15	once/quarter	grab
Total Suspended Solids (TSS)	2.1	3.2	15	22.5	once/quarter	grab
Ammonia Nitrogen (NH3-N)						
(May – October)	0.7	1.1	5	7.5	once/quarter	grab
(November – April)	1.4	2.1	10	15	once/quarter	grab
Dissolved Oxygen						
(May – October)	N/A	N/A	2.0 (Inst. Min.)		once/quarter	grab
(November – April)	N/A	N/A	2.0 (Inst. Min.)		once/quarter	grab
Fecal Coliform Bacteria (FCB)			(colonies/100ml)			
	N/A	N/A	1000	2000	once/quarter	grab
Total Recoverable Copper ¹	Report	Report	Report µg/l	Report µg/l	once/quarter	24-hr composite
Total Recoverable Zinc ¹	Report	Report	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report	Report	Report	Report	once/month	grab
Sulfates	Report	Report	Report	Report	once/month	grab
Total Dissolved Solids	Report	Report	Report	Report	once/month	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab

¹ See Condition No. 3 of Part II (Metals 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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken following the sanitary sewer treatment plant and prior to entering the receiving stream.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 003 - treated domestic wastewater.

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 003. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day	estimate
Carbonaceous Biochemical Oxygen Demand (CBOD5)	1.4	2.1	10	15	once/quarter	grab
Total Suspended Solids (TSS)	2.1	3.2	15	22.5	once/quarter	grab
Ammonia Nitrogen (NH3-N)						
(April – October)	Report ³	Report ³	2.43	3.65	twice/7 months ¹	grab
(November – March)	Report ³	Report ³	5.5	8.25	twice/5 months ¹	grab
Dissolved Oxygen						
(May – October)	N/A	N/A	4.0 (Inst. Min.)		once/quarter	grab
(November – April)	N/A	N/A	2.0 (Inst. Min.)		once/quarter	grab
Fecal Coliform Bacteria (FCB)			(colonies/100ml)			
	N/A	N/A	1000	2000	once/quarter	grab
Total Recoverable Copper ²	Report	Report	Report µg/l	Report µg/l	once/quarter	24-hr composite
Total Recoverable Zinc ²	Report	Report	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report ³	Report ³	19	28.5	once/quarter	grab
Sulfates	Report ³	Report ³	41	61.5	once/quarter	grab
Total Dissolved Solids	Report ³	Report ³	138	207	once/quarter	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab

¹ One sample shall be taken during the months of April – July, August – October, November – December, and January – March.

² See Condition No. 3 of Part II (Metals Requirements).

³ Mass limits based on the TMDL are contained in the SUM TOTAL OUTFALL for Outfalls 001 and 003.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken following the sanitary sewer treatment plant and prior to entering the receiving stream.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 006 - contaminated stormwater.

During the period beginning on the effective date of the permit and lasting three years, the permittee is authorized to discharge from Outfall 006. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day ⁵	instantaneous
Stream Flow ³	N/A	N/A	Report MGD	Report MGD	once/day ⁵	instantaneous
Total Suspended Solids (TSS) ⁴	N/A	N/A	Report	Report	once/week	grab
Ammonia (NH3-N)	Report	Report	Report	Report	once/week	grab
Total Recoverable Copper ¹	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Total Recoverable Lead ^{1,7}	N/A	N/A	84.87 µg/l	170.29 µg/l	once/month	24-hr composite
Total Recoverable Zinc ^{1,7}	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report	Report	Report	Report	once/month	grab
Sulfates	Report	Report	Report	Report	once/month	grab
Total Dissolved Solids	Report	Report	Report	Report	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/week	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic WET Testing	See Outfall 104ST and Condition No. 24 of Part II for WET testing requirements.					

¹ See Condition No. 3 of Part II (Metals Requirements).

² Reserved.

³ See Condition Nos. 13 through 16 of Part II (stream flow monitoring requirements).

⁴ See Condition No. 18 of Part II (TSS benchmark).

⁵ When discharging.

⁶ These limits are effective for only six months following the effective date of this permit. After six months from the effective date of the permit, the permittee will be required to monitor and report the levels of Total Recoverable Lead at this outfall. The Total Recoverable Lead limit will be in place at SUM TOTAL Outfall 104ST after six months from the effective date of the permit.

⁷ Limits are implemented at Outfall 104ST.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken after all stormwater discharged through this outfall has commingled but prior to entering the receiving stream or commingling with other stormwater or wastewaters.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 006 - contaminated stormwater.

During the period beginning three years from the effective date of the permit and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 006. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day ⁶	instantaneous
Stream Flow ³	N/A	N/A	Report MGD	Report MGD	once/day ⁶	instantaneous
Total Suspended Solids (TSS) ⁴	N/A	N/A	Report	Report	once/week	grab
Ammonia (NH3-N)						
(April – October)	Report ⁵	Report ⁵	0	0	once/week	grab
(November – March)	Report ⁵	Report ⁵	0.32	0.48	once/week	grab
Total Recoverable Copper ¹	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Total Recoverable Lead ^{1, 7}	N/A	N/A	Report µg/l	Report µg/l	once/month	24-hr composite
Total Recoverable Zinc ^{1, 7}	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report ⁵	Report ⁵	19	28.5	once/month	grab
Sulfates	Report ⁵	Report ⁵	41	61.5	once/month	grab
Total Dissolved Solids	Report ⁵	Report ⁵	138	207	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/week	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic WET Testing	See Outfall 104ST and Condition No. 24 of Part II for WET testing requirements.					

¹ See Condition No. 3 of Part II (Metals Requirements).
² Reserved.
³ See Condition Nos. 13 through 16 of Part II (stream flow monitoring requirements).
⁴ See Condition No. 18 of Part II (TSS benchmark).
⁵ TMDL based mass limit is implemented at the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007.
⁶ When discharging.
⁷ Limits are implemented at Outfall 104ST.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken after all stormwater discharged through this outfall has commingled but prior to entering the receiving stream or commingling with other stormwater or wastewaters.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 007 - contaminated stormwater.

During the period beginning on the effective date of the permit and lasting three years, the permittee is authorized to discharge from Outfall 007. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day ⁵	instantaneous
Stream Flow ³	N/A	N/A	Report MGD	Report MGD	once/day ⁵	instantaneous
Total Suspended Solids (TSS) ⁴	N/A	N/A	Report	Report	once/week	grab
Ammonia-Nitrogen (NH3-N)	Report	Report	Report	Report	once/week	grab
Total Recoverable Copper ¹	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Total Recoverable Lead ^{1,7}	N/A	N/A	41.79 µg/l ⁶	83.84 µg/l ⁶	once/month	24-hr composite
Total Recoverable Zinc ^{1,7}	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report	Report	Report	Report	once/month	grab
Sulfates	Report	Report	Report	Report	once/month	grab
Total Dissolved Solids	Report	Report	Report	Report	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/week	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic WET Testing	See Outfall 104ST and Condition No. 24 of Part II for WET testing requirements.					

¹ See Condition No. 3 of Part II (Metals Requirements).

² Reserved.

³ See Condition Nos. 13 through 16 of Part II (stream flow monitoring requirements).

⁴ See Condition No. 18 of Part II (TSS benchmark).

⁵ When discharging.

⁶ These limits are effective for only six months following the effective date of this permit. After six months from the effective date of the permit, the permittee will be required to monitor and report the levels of Total Recoverable Lead at this outfall. The Total Recoverable Lead limit will be in place at SUM TOTAL Outfall 104ST after six months from the effective date of the permit.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken after all stormwater discharged through this outfall has commingled but prior to entering the receiving stream or commingling with other stormwater or wastewaters.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 007 - contaminated stormwater.

During the period beginning three years from the effective date of the permit and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 007. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	Report MGD	once/day ⁶	instantaneous
Stream Flow ³	N/A	N/A	Report MGD	Report MGD	once/day ⁶	instantaneous
Total Suspended Solids (TSS) ⁴	N/A	N/A	Report	Report	once/week	grab
Ammonia-Nitrogen (NH3-N)						
(April – October)	Report ⁵	Report ⁵	0	0	once/week	grab
(November – March)	Report ⁵	Report ⁵	0.32	0.48	once/week	grab
Total Recoverable Copper ¹	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Total Recoverable Lead ^{1,7}	N/A	N/A	Report µg/l	Report µg/l	once/month	24-hr composite
Total Recoverable Zinc ^{1,7}	N/A	N/A	Report µg/l	Report µg/l	once/quarter	24-hr composite
Chlorides	Report ⁵	Report ⁵	19	28.5	once/month	grab
Sulfates	Report ⁵	Report ⁵	41	61.5	once/month	grab
Total Dissolved Solids	Report ⁵	Report ⁵	138	207	once/month	grab
Oil and Grease (O & G)	N/A	N/A	10	15	once/week	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic WET Testing	See Outfall 104ST and Condition No. 24 of Part II for WET testing requirements.					

¹ See Condition No. 3 of Part II (Metals Requirements).
² Reserved.
³ See Condition Nos. 13 through 16 of Part II (stream flow monitoring requirements).
⁴ See Condition No. 18 of Part II (TSS benchmark).
⁵ TMDL based mass limit is implemented at the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007.
⁶ When discharging.
⁷ Limits are implemented at Outfall 104ST.

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken after all stormwater discharged through this outfall has commingled but prior to entering the receiving stream or commingling with other stormwater or wastewaters.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 010 – effluent from Outfall 001 - treated process wastewater, treated groundwater, treated sanitary wastewater from septic tanks, and contaminated stormwater (via the joint pipeline to the Ouachita River approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam [Latitude: 33° 17' 30"; Longitude: 92° 28' 12"]).

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 010. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report MGD	2 MGD	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	83.4	125.1	N/A	N/A	once/day ³	24-hr composite
(November – April)	166.8	250.2	N/A	N/A	once/day ³	24-hr composite
Total Suspended Solids (TSS)	500.4	750.6	N/A	N/A	once/day ³	24-hr composite
Ammonia – Nitrogen (NH3-N)	265.2	605	N/A	N/A	three/week ³	24-hr composite
Nitrate Nitrogen as N	581.3	1568.3	N/A	N/A	three/week	24-hr composite
Oil and Grease (O & G)	166.8	250.2	N/A	N/A	two/week	grab
Dissolved Oxygen (DO)	N/A	N/A	Report, minimum		three/week ³	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 ²	N/A	N/A	N/A	<0.2 µg/l	once/month	24-hr composite
Cadmium, Total Recoverable ²	0.22	0.45	N/A	N/A	once/month	24-hr composite
Hexavalent Chromium, Dissolved ²	0.96	1.93	N/A	N/A	once/month	24-hr composite
Copper, Total Recoverable ²	0.82	1.65	N/A	N/A	once/month	24-hr composite
Lead, Total Recoverable ²	0.40	0.80	N/A	N/A	once/month	24-hr composite
Nickel, Total Recoverable ²	14.23	28.55	N/A	N/A	once/month	24-hr composite
Selenium, Total Recoverable ²	0.66	1.32	N/A	N/A	once/month	24-hr composite
Silver, Total Recoverable ²	0.08	0.16	N/A	N/A	once/month	24-hr composite
Zinc, Total Recoverable ²	7.35	14.75	N/A	N/A	once/month	24-hr composite
Chromium (III), Total Recoverable ²	39.52	79.29	N/A	N/A	once/month	24-hr composite
Cyanide, Total Recoverable ²	0.68	1.37	N/A	N/A	once/month	grab
Total Phosphorous	N/A	N/A	Report	Report	once/day ³	24-hr composite
Fecal Coliform Bacteria (FCB)	col/100 ml					
	N/A	N/A	Report	Report	three/week ³	grab
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic WET testing ¹						

<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>Pimephales promelas (Chronic)</u> ¹ Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) TQP6C Growth (7-day NOEC) TPP6C <u>Ceriodaphnia dubia (Chronic)</u> ¹ Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) 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
			<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 See Condition No. 9 of Part II (Chronic WET testing requirements).
² See Condition No. 3 of Part II (Metals requirements).
³ See Condition No. 4 of Part II (Monitoring frequency reduction).

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. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples taken in compliance with the monitoring requirements specified above shall be taken at the Outfall 010 in the area of the following coordinates: Latitude: 33° 15' 55"; Longitude: 92° 41' 15" and prior to commingling with any other waters.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: Outfall 101ST - SUM TOTAL OUTFALL for Outfalls 001 and 002 - treated process wastewater, treated groundwater, sanitary wastewater from septic tanks, and contaminated stormwater.

During the period beginning on the effective date and lasting three years, the permittee is authorized to discharge from Outfalls 001 and 002. 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	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Ammonia-Nitrogen (NH3-N)	265.7 ¹	811.84 ¹	12	18	three/week ²	calculated
Nitrate Nitrogen as N	581.3 ¹	1568.3 ¹	N/A	N/A	three/week ²	calculated

¹ When Outfall 002 is discharging, NH3-N and Nitrates from Outfalls 001, 002, and 010 combined must not exceed the outfall sum.

² If Outfall 002 is discharging, the permittee must include that day in one of the required calculations.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: Outfall 101ST - SUM TOTAL OUTFALL for Outfalls 001 and 002 - treated process wastewater, treated groundwater, sanitary wastewater from septic tanks, and contaminated stormwater.

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfalls 001 and 002. 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)		Frequency	Sample Type
	Monthly Avg.	Daily Max		
Nitrate Nitrogen as N	581.3 ¹	1568.3 ¹	three/week ²	calculated

¹ When Outfall 002 is discharging, NH3-N and Nitrates from Outfalls 001, 002, and 010 combined must not exceed the outfall sum.

² If Outfall 002 is discharging, the permittee must include that day in one of the required calculations.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: Outfall 102ST - SUM TOTAL OUTFALL for Outfalls 001 and 003 - treated process wastewater, treated groundwater, contaminated stormwater, and treated sanitary wastewater.

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfalls 001 and 003. 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)		Frequency ³	Sample Type
	Monthly Avg.	Daily Max.		
Ammonia-Nitrogen (NH3-N)				
(April – October)	37.90	56.85	once/week ¹	calculated
(November – March)	85.78	128.67	once/week ²	calculated
Chlorides	265	397.5	once/month	calculated
Sulfates	503	754.5	once/month	calculated
Total Dissolved Solids	1,338	2,007	once/month	calculated

¹ Twice/seven months if there is no discharge at Outfall 001.

² Twice/five months if there is no discharge at Outfall 001.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: Outfall 103ST - SUM TOTAL OUTFALL for Outfalls 002, 006, and 007 - treated process wastewater from Outfall 002 and contaminated stormwater from Outfalls 002, 006, and 007.

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfalls 002, 006, and 007. 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)		Frequency ¹	Sample Type
	Monthly Avg.	Daily Max.		
Ammonia-Nitrogen (NH ₃ -N)				
(April – October)	0	0	once/week	calculated
(November – March)	5.16	7.74	once/week	calculated
Chlorides	73	109.5	once/month	calculated
Sulfates	33	49.5	once/month	calculated
Total Dissolved Solids	635	952.5	once/month	calculated

¹ Samples used to calculate the levels reported on the DMR for this outfall must all be taken on the same day. If Outfalls 002, 006, and 007 are all discharging on the same day, the permittee must note this in a letter accompanying the DMR.

**PART I
 PERMIT REQUIREMENTS**

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: Outfall 104ST - SUM TOTAL OUTFALL for Outfalls 006 and 007 - contaminated stormwater.

During the period beginning three years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfalls 006 and 007. 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>	
	Monthly Avg.	Daily Max.	Frequency	Sample Type
Total Recoverable Lead IWC (1114I)	3.40 ⁴ µg/l	6.82 ⁴ µg/l	once/month	calculated ³
Total Recoverable Zinc IWC (1094I)	119.50 ⁴ µg/l	239.77 ⁴ µg/l	once/quarter	calculated ³
Chronic WET Testing ^{2,3}				
<u>Pimephales promelas (Chronic)</u> ^{2,3} Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) 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/2 months once/2 months once/2 months once/2 months once/2 months	composite ⁵ composite ⁵ composite ⁵ composite ⁵ composite ⁵
<u>Ceriodaphnia dubia (Chronic)</u> ^{2,3} Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) 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/2 months once/2 months once/2 months once/2 months once/2 months	composite ⁵ composite ⁵ composite ⁵ composite ⁵ composite ⁵

¹ Reserved.
² See Condition No. 9 of Part II (Chronic WET testing Requirements).
³ See Condition No. 24 of Part II (Calculation Methods). This condition includes the requirements for obtaining the individual samples from Outfalls 006 and 007.
⁴ These limits will become effective six months after the effective date of the permit. The interim requirements for Lead and Zinc are contained in the interim tables for Outfalls 006 and 007.
⁵ The composite sample will consist of the instantaneous samples from both Outfall 006 and Outfall 007. The samples from Outfalls 006 and 007 must be flow-weighted when composited.

SECTION B. PERMIT COMPLIANCE

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

1. Compliance with the Final Effluent Limitations for DO during the months May through October at Outfall 003, NH₃-N, Chlorides, Sulfates, and TDS at Outfalls 001, 002, 003, 006, 007, 102ST, and 103ST is required three years after the effective date of the permit. Compliance with the *P. promelas* and *C. dubia* sub-lethal limits at Outfall 001 is also required three years after the effective date of the permit. The permittee shall submit progress reports addressing the progress towards attaining the Final Effluent Limitations for the parameters listed in the preceding sentence according to the following schedule:

<u>ACTIVITY</u>	<u>DUE DATE</u>
Progress Report ^{1,2}	One (1) year from effective date
Progress Report ^{1,3}	Two (2) years from effective date
Achieve Final Compliance ^{1,4}	Three (3) years from effective date

All progress reports must be submitted to the Department at the following address:

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

¹ If the permittee is already in compliance with the final permit limit, only documentation demonstrating compliance with the final limit will be required for the progress report.

² If the permittee is not in compliance with the Final Limitations following one (1) year of sampling, the initial Progress Report must detail how the permittee plans to come into compliance with the Final Effluent Limitations for DO during the months May through October at Outfall 003, NH₃-N, Chlorides, Sulfates, and TDS at Outfalls 001, 002, 003, 006, 007, 102ST, and 103ST, *P. promelas* and *C. dubia* sub-lethal limits at Outfall 001, within the remaining 2 years of the Interim period. Options must be provided that were considered along with which option* was selected. Any Best Management Practices (BMPs) that have been instituted to increase the DO in the effluent during the months May through October at Outfall 003, reduce the NH₃-N, Chlorides, Sulfates, and TDS levels at Outfalls 001, 002, 003, 006, 007, 102ST, and 103ST in the influent as well as toxicity in the effluent from Outfalls 001, 002, and 007 must also be discussed. If a study will be performed, a milestone schedule for the study must be provided.

* The permittee has the option to undertake any study deemed necessary to meet the final limitations during the interim period. Any additional treatment (including chemical addition) must be approved and construction approval granted prior to final installation.

³ The second Progress Report must contain an update on the status of the chosen option from the initial Progress Report. If the facility is not meeting any of the milestones provided in the initial Progress Report, the facility must update the milestone schedule to show how the final limits will be met by the deadline.

⁴ A final Progress Report must be submitted no later than 30 days following the final compliance date and include a certification that the final effluent limits were met on the effective date and that the limits are still being met.

2. The permittee must have the stream flow monitoring equipment installed to measure the stream flows downstream of Outfalls 006 and 007. This equipment must be operating within six (6) months of the effective date of the permit. The permittee must submit a written certification, signed by the responsible official, that the equipment has been installed and is operational 195 days of the effective date of the permit.

**PART II
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), Outfalls 010 North and South at the City of El Dorado (AR0049743), Outfall 010 at Great Lakes Chemical Corporation – Central Plant (AR0001171), 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 or under the terms of the sampling plan submitted to and approved by the Department.

The permittee must maintain the current sampling plan or submit proposed revisions to the Department. Any revised sampling plan submitted to the Department must demonstrate that the samples will be representative of each permittee’s discharge to the joint pipeline.

2. 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 with 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 water to another permitted outfall as may be reasonably necessary to protect human health and the environment.
3. The permittee may use any EPA approved method provided the MQL for the chosen method is equal to or less than what has been specified.

Pollutant	MQL (µg/l)
Mercury, Total Recoverable	0.005
Cadmium, Total Recoverable	0.5
Chromium (III), Total Recoverable	10
Hexavalent Chromium, Dissolved	10
Copper, Total Recoverable	0.5
Lead, Total Recoverable	0.5
Nickel, Total Recoverable	0.5
Selenium, Total Recoverable	5
Silver, Total Recoverable	0.5
Zinc, Total Recoverable	20
Cyanide, Total Recoverable	10

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.

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 permittee submits certification that the following conditions have been met:
 - A. Condition #1 of Part II; 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. The operator of this wastewater treatment facility shall have at least a Basic Industrial license from the State of Arkansas in accordance with Act 1103 of 1991, Act 556 of 1993, Act 211 of 1971, and Regulation No. 3, as amended.
7. 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 a relevant water body, or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

8. Other Specified Monitoring Requirements

The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

- The monitoring and analytical instruments are consistent with accepted scientific practices;
- The requests shall be submitted in writing to the Permits Section of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
- The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5; and
- All associated devices are installed, calibrated, and maintained to insure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. ADEQ must be notified in writing and the permittee must receive written approval from ADEQ if the permittee decides to return to the original permit monitoring requirements.

Whole Effluent Toxicity Testing Conditions

9. 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 OUTFALLS: 002, 006, 007, and 010

Outfall	Dilution Series	Critical Dilution	Testing Frequency
002	32%, 42%, 56%, 75%, & 100%	100%	once/month
006 & 007	See Part II.24.c		once/2 months
010	0.7%, 0.9%, 1.2%, 1.6%, & 2.1%	1.6%	once/quarter

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-821-R-02-013, 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-821-R-02-013, 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 herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) 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. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) 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.

2. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

In addition:

- a. Part I Testing Frequency Other Than Monthly
 - i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A 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 LETHAL EFFECTS HAVE BEEN DEMONSTRATED** If any of the 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 also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.
- iii. **IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED** If any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE_{SL}) 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 Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required for failure to perform the required retests.
- iv. The provisions of Item 2.a.i. 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 toxic effects at or below the critical dilution. A TRE may also be required due to a demonstration of intermittent lethal and/or sub-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 sub-lethal 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.
 - vii. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.
 - viii. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.
 - ix. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;
 - x. A PMSD range of 12 - 30 for Fathead minnow growth.
- 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/821/R-02-013 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/821/R-02-013 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 a survival 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. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.
- 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, on use, are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.
- iii. The permittee must collect all three flow-weighted composite samples within the monitoring period. Second and/or third composite samples shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.
- iv. 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 between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.
- v. 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 have collected 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.
- vi. 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.

vii. If chlorination is part of the treatment process, 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/821/R-02-013, 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.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency 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 WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST lethal and sub-lethal effects results for each species during the reporting period. The full reports for 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 Agency review.
- c. The permittee shall submit the results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. 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 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 for growth, 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 NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B
- (E) Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

5. TOXICITY REDUCTION EVALUATIONS (TREs)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE_{SL}) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE_L) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a TRE_{SL} where there are no effects at effluent dilutions of 75% or lower.

- a. Within ninety (90) days of confirming persistent toxicity, 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 goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes 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 (703) 487-4650, 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;
 - iii. 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;
 - iv. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
 - v. 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 toxicity 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 toxicity 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 toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.
- e. 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).

10. Reserved.

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

1. 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(S):	001
CRITICAL DILUTION:	100%
EFFLUENT DILUTION SERIES:	32%, 42%, 56%, 80%, & 100%
LETHAL LIMIT:	100%
SUB-LETHAL LIMIT:	80%
SCHEDULE OF COMPLIANCE:	YES (sub-lethal only)
TESTING FREQUENCY:	once/two months
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-821-R-02-013, 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-821-R-02-013, 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 herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) 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.

Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

- c. The conditions of this item are effective beginning with the effective date of the WET limits. When the testing frequency stated above is less than monthly and the effluent fails the chronic endpoint at or below the required limit specified in Item 1.a., 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 No Observed Effect 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. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.
- d. If under a TRE, the permittee may conduct quarterly testing as a minimum monitoring requirement for the organism(s) under investigation for the duration of the TRE. Upon completion of the TRE, monitoring will revert back to the conditions specified in Item 1.c.
- e. This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

2. 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 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 sub-lethal 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.
 - vii. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.
 - viii. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.
 - ix. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;
 - x. A PMSD range of 12 - 30 for Fathead minnow growth.
- 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-821-R-02-013 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-821-R-02-013, or the most recent update thereof.
 - iii. 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 a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 3 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 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 composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.
- ii. The permittee must collect all three flow-weighted composite samples within the monitoring period. 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 a regular or 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 between 0 and 6 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 have collected 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. If chlorination is part of the treatment process, 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.

3. 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-821-R-02-013, 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.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

- b. The permittee shall report the Whole Effluent Toxicity values for the 30-Day Average Minimum and the 7-Day Minimum under Parameter Nos. 51710 for C. dubia and 51714 for P. promelas, on the DMR for that reporting period in accordance with PART III.D.4 of this permit.

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 (in accordance with item 1.a.), the permittee shall report the lowest 30-Day Average Minimum NOEC and the lowest 7-Day Minimum NOEC for Whole Effluent Toxicity.

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 WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST lethal and sub-lethal effects results for each species during the reporting period. The full reports for 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 Agency review.

- c. The permittee shall submit the results of the valid toxicity test on the DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. 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 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 for growth, Parameter No. TQP6C
- F. Prior to the sub-lethal limit effective date, report the NOEC value for survival, Limit Parameter No. 51714

G. Once the sub-lethal limit is effective, report the lowest NOEC value for survival or growth, Limit Parameter No. 51714

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 NOEC for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B

E. Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

F. Prior to the sub-lethal limit effective date, report the NOEC value for survival, Limit Parameter No. 51710

G. Once the sub-lethal limit is effective, report the lowest NOEC value for survival or reproduction, Limit Parameter No. 51710

4. TOXICITY REDUCTION EVALUATIONS (TREs)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE_{SL}) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE_L) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a TRE_{SL} where there are no effects at effluent dilutions of 75% or lower.

- a. Within ninety (90) days of confirming persistent toxicity, 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 goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes 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 (703) 487-4650, 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;
- iii. 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;

- iv. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
 - v. 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 toxicity 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 toxicity 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 toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.
 - e. 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).

5. TOXICITY RE-OPENER

- a. If the TRE has identified the source of toxicity and led to the successful elimination of effluent toxicity at the critical dilution, the WET final effluent limits may be replaced by monitoring and reporting only requirement thru a major permit modification. Otherwise, the permittee must comply with the final WET effluent limits.

- b. If the TRE has not led to the successful elimination of effluent toxicity at the critical dilution, but has identified a causal parameter, the WET final effluent limit may be replaced by monitoring and reporting only requirement thru a major permit modification, with the addition of a limit for the causal parameter.

(Note: A modified permit must be effective prior to the effective date of the WET limits.)

12. Reserved.

Additional Monitoring Requirements for Outfalls 006 and 007

13. The permittee shall monitor the stream flow downstream of Outfalls 006 and 007 once per day pursuant to Part IA. The downstream flow must be used to calculate the upstream flow once per day using the following formula:

$$\text{Upstream Flow} = \text{Downstream Flow} - \text{Outfall 006 Flow} - \text{Outfall 007 Flow}$$

14. Reserved.

15. The permittee shall maintain the approved in-stream flow monitoring equipment and have the equipment serviced and calibrated on a regular basis. Records shall be kept and available for inspection upon request.

16. The ADEQ reserves the right to reopen the permit based on information submitted on the DMRs regarding compliance with the stream flow to effluent flow ratio. Items which may be modified to reflect stricter limitations include, but are not limited to, the following:

- A. Dilution series for acute or chronic WET testing;
- B. Critical dilution for acute or chronic WET testing; and
- C. Metals monitoring requirements.

17. Reserved.

18. TSS Benchmark

If the TSS monitoring results from Outfalls 002, 006, or 007 of Part IA of this permit exceed the parameter benchmark value of 100 mg/l, the facility shall investigate the cause and/or source of the elevated pollutant levels, review the BMPs, and determine and document a corrective action plan to address the benchmark exceedance. The facility shall commence with the above process within 30 calendar days of the exceedance.

The Corrective Action Plan must contain the following: the results of the review; the corrective actions the permittee will take to address the benchmark excursion, including

whether any BMP modifications are necessary; and an implementation schedule including alternative methods for implementing existing site controls or methods for implementing additional effective site controls, if the site controls have not already been implemented.

The permittee must document the date that corrective actions are initiated and are completed or expected to be completed. A copy should be retained onsite with the BMP documents.

Failure to meet the benchmark value of 100 mg/l may result in the inclusion of TSS or turbidity limits in the permit at the time of the next renewal.

19. Reserved.

Other Conditions

20. When the permittee continuously monitors pH pursuant to an option or requirement of the permit, the pH shall be monitored, calculated, and reported as an hourly average of the pH measurements taken each minute. Hourly averages outside of the permitted range are violations and the number of violations shall be reported as excursions in accordance with Part III.C.5.

21. When the permittee continuously monitors DO pursuant to an option or requirement of the permit, the DO level shall be monitored, calculated, and reported as an hourly average of all of the DO measurements taken each hour. Hourly averages below the permitted minimum DO level are violations and the number of violations shall be reported as excursions in accordance with Part III.C.5. This condition does not apply to Outfall 010.

22. Reserved.

23. Ammonia as N and Nitrates as N discharges from Outfalls 001 and 002 shall not exceed the Ammonia as N and Nitrates as N limits at the SUM Total Outfall (Page 21 of Part IA).

24. Calculation Methods for Sum Total Outfall 104ST

a. Reserved.

b. Calculate the In-Stream Waste Concentration in the following manner:

$$IWC = [(Q_{e006} * C_{e006}) + (Q_{e007} * C_{e007}) + ((Q_b * 0.67) * C_b)] / (Q_{e006} + Q_{e007} + (Q_b * 0.67))$$

Where:

IWC = in-stream waste concentration immediately after effluent streams from Outfall 006 and Outfall 007 commingle

Q_e = effluent discharge rate at Outfall 007

C_e = concentration measured at Outfall 007

Q_b = stream flow rate upstream of Outfall 006 and Outfall 007. Calculated by taking the downstream measurement and subtracting the effluent flows.

C_b = background concentrations in stream. Will be assumed to be 0 $\mu\text{g/l}$ since there is not any upstream data available.

c. WET Testing

In accordance with Part II, Condition 9.3.d.iv of the permit, the permittee shall combine the composite effluent samples in proportion to the 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.

The permittee is required to take instantaneous flow measurements at Outfall 006 and at Outfall 007 as well as for the stream flow. All three measurements must be taken within a 30 minute span.

The following formula shall be used to determine the critical dilution. The dilution series shall be determined by using the 0.75 dilution series.

$$\text{Critical dilution (CD)} = [(Q_{006} + Q_{007}) / (Q_{006} + Q_{007} + (Q_b * 0.67))] * 100\%$$

Q_b = instantaneous background flow, cfs

Q_{006} = instantaneous effluent flow from Outfall 006

Q_{007} = instantaneous effluent flow from Outfall 007

Dilution Series Calculations

D_0 will be used only if the critical dilution is determined to be greater than 75%. If D_0 is used, D_5 will not be used.

$$\begin{array}{ll} D_0 = 0.75 * D_1 & D_3 = 0.75 * CD \\ D_1 = 0.75 * D_2 & D_4 = CD \\ D_2 = 0.75 * D_3 & D_5 = CD/0.75 \end{array}$$

PART III 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; and/or for denial of a permit renewal application. Any values reported in the required Discharge Monitoring Report (DMR) 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 twenty-five thousand dollars (\$25,000) 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.
- B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
- C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- 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 APC&EC Regulation No. 9 (Permit fees) as required by Part III.A.11 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 III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APC&EC Regulation No. 2, as amended, 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 APC&EC Regulation No. 2, 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 for “Bypass of Treatment Facilities” (Part III.B.4), and “Upset” (Part III.B.5), 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 subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

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 to 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 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. Applicable Federal, State or Local Requirements

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal such as endangered species, state or local statute, ordinance or regulation.

11. Permit Fees

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APC&EC 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 Parts 122.64 and 124.5(d), as adopted in APC&EC Regulation No. 6 and the provisions of APC&EC 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

“Bypass” means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).

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 Parts III.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 III.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.
 - (c) The permittee submitted notices as required by Part III.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 III.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 based permit effluent limitations if the requirements of Part III.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 III.D.6.
 - 4. The permittee complied with any remedial measures required by Part III.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

- A. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 CFR Part 503, 40 CFR Part 257, and 40 CFR Part 258.

- B. Any changes to the permittee's disposal practices described in Part II of the permit will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

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 discharge 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.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Department approved method (i.e., as allowed under Part II.8), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department.

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**

40 CFR 127.11 (a)(1) and 40 CFR 127.16 (a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory Authorities must initially request access for a NetDMR account. Once a NetDMR account is established, access to electronic filing should use the following link <https://netdmr.epa.gov>. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 CFR 127.15. Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR dated and submitted no later than the 25th day of the month, following the completed reporting period beginning on the effective date of the permit.

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 Part 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 individual(s) who performed the sampling or measurements.
- C. The date(s) and time analyses were performed.
- D. The individual(s) who performed the analyses.
- E. The analytical techniques or methods used.
- 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.
- 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 to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 CFR 122.41(l)]. Notice is required only when:

- A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR 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 subject to effluent limitations in the permit, or to the notification requirements under 40 CFR 122.42(b).

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 III.C.5. **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.
 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.
 3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Section of the Office of Water Quality of the ADEQ.
- C. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours to the Enforcement Section of the Office of Water Quality of the ADEQ.

7. Other Noncompliance

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

8. Changes in Discharge of Toxic Substances for Industrial Dischargers

The Director shall be notified as soon as the permittee knows or has reason to believe:

- A. That any activity has occurred or will occur which would result in the discharge on 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 APC&EC Regulation No. 6.

11. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

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:
 - (a) 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.
 - (b) 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.
 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:
 - (a) The chief executive officer of the agency.
 - (b) 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).
 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 APC&EC Regulation No. 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 III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

14. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

PART IV DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 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. **“APC&EC”** means the Arkansas Pollution Control and Ecology Commission.
4. **“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.
5. **“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 (APC&EC) Regulation No. 2, as amended.
6. **“Best Management Practices (BMPs)”** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
7. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).
8. **“Composite sample”** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
9. **“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.
 - A. **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.
 - B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
10. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month.
11. **“Department”** means the Arkansas Department of Environmental Quality (ADEQ).
12. **“Director”** means the Director of the Arkansas Department of Environmental Quality.

13. **“Dissolved oxygen limit”** shall be defined as follows:
 - a. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month.
 - b. 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.
14. **“E-Coli”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the Daily Maximum as the highest “daily discharge” during the calendar month, and the Monthly Average as the geometric mean of all “daily discharges” within a calendar month, in colonies per 100 ml.
15. **“Fecal Coliform Bacteria (FCB)”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest “daily discharge” during the calendar month, and the Monthly Average as the geometric mean of all “daily discharges” within a calendar month, in colonies per 100 ml.
16. **“Grab sample”** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
17. **“Industrial User”** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
18. **“Instantaneous flow measurement”** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
19. **“Instantaneous Maximum”** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
20. **“Instantaneous Minimum”** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
21. **“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) or E-Coli, report the Monthly Average as the geometric mean of all “daily discharges” within a calendar month.
22. **“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 (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.

 - A. **MONTHLY:**

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

B. BI-MONTHLY:

is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

C. 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.

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 are: May through July, August through October, November through January, and February through April.

D. 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.

E. 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.

23. **“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.
24. **“POTW”** means Publicly Owned Treatment Works;
25. **“Reduction of CBOD5/BOD5 and TSS in mg/l Formula”**
[(Influent – Effluent) / Influent] x 100
26. **“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.
27. **“Sewage sludge”** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
28. **“7-Day Average”** Also known as “average weekly” means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or E-Coli is the

geometric mean of the “daily discharges” of all effluent samples collected during a calendar week in colonies per 100 ml.

29. **“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.
30. **Units of Measure:**
 - “MGD” shall mean million gallons per day.
 - “mg/l” shall mean milligrams per liter or parts per million (ppm).
 - “µg/l” shall mean micrograms per liter or parts per billion (ppb).
 - “cfs” shall mean cubic feet per second.
 - “ppm” shall mean parts per million.
 - “s.u.” shall mean standard units.
31. **“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 of preventive maintenance, or careless of improper operations.
32. **“Visible sheen”** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
33. **“Weekday”** means Monday – Friday.

Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This draft permitting decision is for renewal of the discharge Permit Number AR0000752 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 70-00040 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, Arkansas 72118

2. APPLICANT.

The applicant's mailing address is:

El Dorado Chemical Company
P.O. Box 231
El Dorado, AR 71731-0231

The facility address is:

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

3. PREPARED BY.

The permit was prepared by:

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4. PREVIOUS PERMIT ACTIVITY.

Effective Date: July 1, 2002
Modification Date: June 1, 2004
Expiration Date: June 30, 2007

The permittee submitted a permit renewal application on December 21, 2006, with all additional information submitted by December 2, 2016. It is proposed that the current NPDES permit be reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

NPDES Permit No. AR0000752 was reissued to El Dorado Chemical Company (EDCC) on July 1, 2002. A modified permit with an effective date of July 1, 2004, was issued to settle several issues (such as metals limits), which had been appealed in the reissued permit. The reissued permit as well as the modified permit contained two outfalls (Outfall 010 and Outfall 011) for the permittee to discharge directly to the Ouachita River via an individual pipeline. Those two outfalls, one of which would be located approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam, were included because the permittee had not yet decided the route of the pipeline and therefore the discharge location.

EDCC made the decision to enter into a joint pipeline agreement with two area industries – Lion Oil Company – El Dorado Refinery and Great Lakes Chemical Company – Central Plant as well as El Dorado Water Utilities. This decision necessitated the need to modify NPDES Permit No. AR0000752 to allow for the necessary changes (i.e., modification of Outfall 010) and to issue a new permit to all of the joint pipeline participants (AR0050296) with limits for the outfall at the Ouachita River.

A modified version of AR0000752 (which allowed EDCC to discharge to the Ouachita River via the joint pipeline) was issued on February 28, 2007, and subsequently appealed. An administrative hearing was held in the fall of 2007 and a recommended decision was issued by the Administrative Hearing Officer (AHO) on May 8, 2008. Oral arguments before the APCEC took place on June 27, 2008. This permit incorporates the changes mandated by the APCEC on June 27, 2008.

The decision made by the APCEC was appealed in Circuit Court within the required time frame. On March 31, 2009, the Honorable David Guthrie of the 13th Judicial District issued a Judgment of the Court upholding the APCEC's ruling. That decision was then appealed to the State Supreme Court. Arguments before the State Supreme Court occurred on September 23, 2010. A decision upholding the issuance of the permits as outlined in the Administrative Hearing Officer's recommended decision was issued on October 7, 2010.

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management plan
BOD₅ - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
CBOD₅ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
EDCC – El Dorado Chemical Corp. (used in reference to facility)
ELCC – El Dorado Chemical Corp. (used in reference to the receiving stream)
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH₃-N - ammonia nitrogen
NO₃ + NO₂-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Reg. 2 - APCEC Regulation No. 2
Reg. 6 - APCEC Regulation No. 6
Reg. 8 - APCEC Regulation No. 8
Reg. 9 - APCEC Regulation No. 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
TP - total phosphorus

TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USFWS - United States Fish and Wildlife Service
WET - Whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

DMR/Legal Notice Review

Compliance and Enforcement History for this facility can be reviewed by using the following web link:

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Compliance%20Review_20150828.txt

5. FINANCIAL ASSURANCE

The permittee is not required to submit financial assurance in regards to this NPDES permit because the sanitary wastewater treatment plant serves only this business.

6. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT.

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. The description of the physical location has been expanded in order to give more information concerning where the facility is located.
2. The facility and the outfall coordinates have been updated based upon data collected during the site visit on September 19, 2007.
3. The following changes have been made at Outfall 001 in the permit:
 - a. The final NH₃-N limits are based on the TMDL. Interim limits and a schedule of compliance for the more stringent limits have been included in the permit. See Item No. 13.A.1.i, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
 - b. The temperature limit has been removed based upon a study conducted by the permittee. See Item No. 13.B of this Fact Sheet for additional information.
 - c. The monitoring location has been clarified to state that the required samples must be taken after the final treatment unit and prior to entering the receiving stream or commingling with other wastewaters. This will allow for small changes to the monitoring location without the need to modify the permit and will ensure that the samples are representative of the discharge.

- d. Sub-lethal WET limits for *P. promelas* and *C. dubia* have been added. See Item No. 14 of this Fact Sheet for additional information.
 - e. Mineral limits based on the TMDL have been included. Interim limits and a schedule of compliance for the more stringent limits have been included in the permit. See Item No. 13.A.1.i, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
 - f. The WET testing frequency has been changed to once every two months. See Item No. 14 of this Fact Sheet for additional information.
 - g. Treated groundwater and sanitary wastewater from septic tanks have been added to the effluent description.
 - h. The mass limits for TSS and metals have increased due to an increase in the highest monthly average flow.
 - i. The Nitrates limits are now applied only at the SUM TOTAL OUTFALL for Outfalls 001 and 002.
 - j. Reserved.
 - k. Total Recoverable Selenium limits have been removed from the permit. See Item Nos. 13.B and 13.D of this Fact Sheet for additional information.
 - l. The Total Recoverable Zinc limits have been replaced with monitoring and reporting requirements. See Item Nos. 13.B and 13.D of this Fact Sheet for additional information. The monitoring frequency has been reduced to once per quarter. See Item No. 15 of this Fact Sheet for additional information.
4. The following changes have been made at Outfall 002 in the permit:
- a. The final NH₃-N concentration limits are based on the TMDL. Interim limits and a schedule of compliance for the more stringent limits have been included in the permit. See Item No. 13.A.1.i, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
 - b. The monitoring location has been clarified to state that the required samples must be taken after the final treatment unit and prior to entering the receiving stream or commingling with other wastewaters. This will allow for small changes to the monitoring location without the need to modify the permit and will ensure that the samples are representative of the discharge.
 - c. Mineral limits based on the TMDL have been included (note – Chlorides requirements have been included for the first time at this outfall). Interim limits and a schedule of compliance for the more stringent limits have been included in the permit. See Item No. 13.A.1.i, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
 - d. The Acute WET testing requirements have been replaced with Chronic WET testing requirements. See Item No. 14 of this Fact Sheet for additional information.
 - e. The Nitrates limits are now applied only at the SUM TOTAL OUTFALL for Outfalls 001 and 002.
 - f. Total Recoverable Selenium limits have been removed from the permit. See Item Nos. 13.B and 13.D of this Fact Sheet for additional information.

5. The following changes have been made at Outfall 003 in the permit:
 - a. Minimum required DO levels have been added in order to ensure that the water quality standards in Reg. 2.505 are met. An interim requirement for the months of May through October and a schedule of compliance have been included in the permit. See Item No. 13.A.1.i and Item No. 16 of this Fact Sheet for additional information.
 - b. The TSS daily maximum concentration has been corrected to be exactly 1.5 times the monthly average limit. As a result of this correction, the mass limit has also been changed. This change is based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.
 - c. The monitoring location has been clarified to state that the required samples must be taken after the final treatment unit and prior to entering the receiving stream or commingling with other wastewaters. This will allow for small changes to the monitoring location without the need to modify the permit and will ensure that the samples are representative of the discharge.
 - d. Mineral limits based on the TMDL have been included. Interim limits and a schedule of compliance for the more stringent limits have been included in the permit. See Item No. 13.A.1.i, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
 - e. Monitoring and reporting requirements for Total Recoverable Copper and Total Recoverable Zinc have been added to the permit based on the 2008 303(d) list. See Item No. 8.a of this Fact Sheet for additional information.
 - f. The final NH₃-N limits are based on the TMDL. Interim limits and a schedule of compliance for the more stringent limits have been included in the permit. See Item No. 13.A.1.i, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
6. Outfall 004 has been deleted. The permittee has made changes to their stormwater management program and no longer needs this outfall. The stormwater previously discharged through Outfall 004 is now discharged through Outfall 001.
7. Outfall 005 has been deleted. The permittee has made changes to their stormwater management program and no longer needs this outfall. The stormwater previously discharged through Outfall 005 is now discharged through Outfall 001.
8. The following changes have been made at Outfalls 006 and 007 in the permit:
 - a. The permittee is required to monitor the flow of the receiving stream downstream from both of the outfalls. See Item No. 13.A.1.ii of this Fact Sheet for additional information.
 - b. Reserved.
 - c. The Cadmium limits (at Outfall 006 only) have been removed. Based upon the stream flow to effluent flow ratios developed through the stormwater flow study conducted by the permittee, the discharge no longer presents reasonable potential for water quality violations. See Item No. 8.A, 13.A.1.ii, and Item No. 13.D of this Fact Sheet for additional information.

- d. Monitoring and reporting requirements for Copper have been added because the receiving stream is on the 303(d) list for this parameter. See Item No. 8.a and Item No. 13.D of this Fact Sheet for additional information.
 - e. The final TDS concentration limits are now based on the TMDL. In the interim, the permittee will be required to monitor and report the levels of TDS in the effluent from Outfalls 006 and 007. See Item No. 13.A.1.ii, Item No. 16, and Item No. 8.b of this Fact Sheet for additional information.
 - f. Reserved.
 - g. Chronic WET testing requirements have replaced the Acute WET test conditions. The WET testing will be one test with the sample being a flow weighted composite of the effluent from Outfalls 006 and 007. See Item No. 13.A.1.ii and Item No. 14 of this Fact Sheet for additional information. Also see information regarding Outfall 104ST.
 - h. The monitoring locations have been clarified to state that the samples taken in compliance with the monitoring requirements must be taken after all stormwater discharged through this outfall have commingled but prior to entering the receiving stream or commingling with other stormwater or wastewaters. This is necessary due to the use of the stormwater flow study. (See Part IA of the permit.)
 - i. NH₃-N, Chlorides, and Sulfates limits based on the TMDL have been added. Interim monitoring and reporting requirements as well as a schedule of compliance have been included in the permit. See Item No. 13.A.1.ii, Item No. 8.b, and Item No. 16 of this Fact Sheet for additional information.
 - j. The WET testing frequency has been changed to once every two months. See Item Nos. 14 and 15 of this Fact Sheet for additional information.
 - l. The requirement to develop a program for ensuring that the first 2.0 inches of rainfall in a 24-hour period are routed through Outfall 010 instead of Outfalls 006 and 007 has been removed. See Item No. 13.A.ii of this Fact Sheet for additional information.
 - m. The Total Recoverable Lead and Total Recoverable Zinc limits are now at Outfall 104ST. See Item No. 13.A.1.ii and Item No. 13.D of this Fact Sheet for additional information.
 - n. The effluent flow sample types have been changed from estimate to instantaneous since the permittee has Parshall flumes at both outfalls.
9. The following change has been made to Outfall 010.
 - a. The outfall coordinates have been updated. It is important to note that the coordinates in the previous permit were estimated since the pipeline had not yet been constructed.
 - b. Outfalls 006 and 007 have been deleted from the effluent description. See Item No. 13.A.1.ii of this Fact Sheet for additional information.
 - c. The monitoring frequencies for CBOD₅, NH₃-N, FCB, and DO have been reduced. See Item No. 15 of this Fact Sheet for additional information.
 10. The following change has been made to the SUM TOTAL OUTFALL for Outfalls 001 and 002.
 - a. NH₃-N has been removed from the final limits. This is a sum total outfall for technology based limits which are only applicable at Outfalls 001 and 002. The

- technology based NH₃-N limit is being removed because the water quality based limit required by the TMDL is more stringent. A schedule of compliance for the more stringent TMDL limit has been placed in the permit. The interim NH₃-N limits will be the limits contained in the previous permit for this outfall.
- b. This outfall is now designated as Outfall 101ST.
11. A SUM TOTAL OUTFALL for Outfalls 001 and 003 has been added to the permit. This outfall contains the loads in the TMDL for NH₃-N, Chlorides, Sulfates, and TDS for the non-stormwater sources. The TMDL has designated Outfalls 001 and 003 as the non-stormwater sources for this facility. See Item No. 13.A.1.i of this Fact Sheet for additional information. This outfall is designated as Outfall 102ST.
12. A SUM TOTAL OUTFALL for Outfalls 002, 006, and 007 has been added to the permit. This outfall contains the loads in the TMDL for NH₃-N, Chlorides, Sulfates, and TDS for the stormwater sources. The TMDL has designated Outfalls 002, 006, and 007 as the stormwater sources at this facility. See Item No. 13.A.1.iii of this Fact Sheet for additional information. This outfall is designated as Outfall 103ST.
13. The following changes have been made to Part II (formerly Part III):
- a. Condition No. 1 has been updated to specify that the facility can submit a sampling plan to ensure that the samples taken for all facilities discharging to the joint pipeline are representative. This change has been made to allow the facilities involved in the joint pipeline to set a sampling schedule which will be agreeable to them as well as to the Department.
 - b. Condition No. 2 has been modified to allow the facility to divert flows from Outfall 010 to other permitted outfalls during non-emergency and non-maintenance events provided notification requirements are met. This change has been made to provide the permittee flexibility in controlling its discharges and was included in the AHO's recommended decision.
 - c. Several MQLs for metals contained in Part II, Condition No. 3 of the permit have been updated to more stringent requirements as more sensitive testing is now available.
 - d. The required class of the licensed operator for this facility has been specified as Basic Industrial and is based on the requirements contained in Reg. 3. See Part II, Condition No. 6 of the permit.
 - e. Stream flow monitoring conditions for Outfalls 006 and 007 have been added because the limits for those outfalls are based on ratios of discharge flows to stream flows during storm events. The ratios were developed through use of a stormwater flow study conducted by the permittee. The continued stream flow monitoring is necessary to verify the ratios over a longer term. See Item No. 13.A.1.ii of this Fact Sheet for additional information. Also see Part II, Condition Nos. 13 through 16 of the permit.
 - f. Part II, Condition No. 17 has been added to the permit. This is a condition specifically prohibiting the discharge of any waters other than contaminated stormwater through Outfalls 006 and 007 has been added to the permit. The limits for

- those outfalls are based on ratios of discharge flows to stream flows during storm events. See Item No. 13.A.ii of this Fact Sheet for additional information.
- g. The WET language (Part II, Condition Nos. 9, 10, 11, and 12) has been updated to reflect the requirements placed in permits for all facilities required to conduct WET testing. See Item No. 14 of this Fact Sheet for additional information.
 - h. The SWPPP language has been removed. The permittee is required to obtain alternate permit coverage for stormwater runoff associated with industrial activity which is not discharged through one of the outfalls included in NPDES Permit No. AR0000752.
 - i. BMP language (Part II, Condition No. 18) has been added to the permit since the facility is permitted to discharge stormwater runoff.
 - j. The condition requiring the composite samples to be taken at 10 AM, 12 PM, 2 PM, and 4 PM has been removed. The samples at Outfalls 006 and 007 cannot always be taken at these times since the discharges consist solely of stormwater runoff. The requirements of the definition of composite sample in Part IV of the permit are sufficient to ensure that representative samples are obtained.
14. Part III.C.5 now requires the permittee to submit the DMRs electronically via NetDMR.
15. SUM TOTAL Outfall 104ST has been added to the permit. This outfall will cover the flow-weighted composite sampling required for the Total Recoverable Lead, Total Recoverable Zinc, and WET testing. See Item No. 13.A.1.ii of this Fact Sheet for additional information.

7. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfalls are located at the following coordinates:

Outfall 001:	Latitude: 33° 15' 33.8";	Longitude: 92° 41' 14.2"
Outfall 002:	Latitude: 33° 15' 45.3";	Longitude: 92° 41' 20.3"
Outfall 003:	Latitude: 33° 15' 38";	Longitude: 92° 41' 07"
Outfall 006:	Latitude: 33° 16' 03";	Longitude: 92° 41' 02"
Outfall 007:	Latitude: 33° 16' 06.3";	Longitude: 92° 41' 16"
Outfall 010:	Latitude: 33° 15' 32.6";	Longitude: 92° 41' 14.4"

The receiving waters named:

Outfalls 001, 002, 003, 006, and 007 – unnamed tributaries of Flat Creek (a/k/a Elcc Tributary), thence to Flat Creek, thence to Haynes Creek, thence to Smackover Creek, thence to the Ouachita River in Segment 2D of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 8040201 and reach #606 is a Water of the State classified for secondary contact recreation, raw water source for industrial and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses. The removal of the drinking water use was approved by EPA in a letter dated November 9, 2007.

Outfall 010 – via a joint pipeline to the Ouachita River approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam in Segment 2D of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 8040201 and reach #002 is a Water of the State classified for primary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

8. 303(d) LIST, TOTAL MAXIMUM DAILY LOADS (TMDLS), ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.

a. 303(d) List

Unnamed tributary of Flat Creek (a/k/a ELCC Tributary) and Flat Creek - Outfalls 001, 002, 003, 006, and 007

The unnamed tributary to Flat Creek (a/k/a ELCC tributary) and Flat Creek are on the 2008 303(d) list for Copper, and Zinc in Category 5e. Category 5e includes those stream segments impaired by point source dischargers where it is anticipated that future permit restrictions will correct the problem. See Item # 13.A.1.i and ii for additional information concerning these parameters in this permit.

The unnamed tributary of Flat Creek is on the 2008 303(d) list for Nitrates in Category 5e. The domestic water supply use was removed from the list of designated uses of the receiving stream in 2007. (Note: EPA approved this removal November 9, 2007.) Therefore, drinking water standards do not apply to the receiving stream. No action is necessary regarding this listing. Nitrates is only included at Outfalls 001, 002, 010, and the SUM TOTAL OUTFALL for Outfalls 001 and 002 in this permit because of the technology based standards in 40 CFR Part 418 which are applicable to this facility.

The unnamed tributary is also on the 303(d) list in category 4a for Chlorides, Sulfates, TDS, and Ammonia. *TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas* (TMDL) was finalized in 2002. See paragraph b below for additional information.

The permit contains the following requirements for Copper and Zinc. Please refer to the two paragraphs following the table for justification of the requirements.

Outfall	Copper	Zinc
001	limit	monitor and report
002	limit	limit
003	monitor and report	monitor and report
006	monitor and report	monitor and report

Outfall	Copper	Zinc
007	monitor and report	monitor and report
104 ST	N/A	limit

Outfalls 001 and 002

Copper limits have been continued for Outfalls 001 and 002 as well as Zinc at Outfall 002 because the facility has demonstrated reasonable potential for water quality violations. Zinc limits have not been included at Outfall 001 because the permittee has demonstrated that reasonable potential for water quality violations at this outfall do not exist. Therefore this outfall is not causing or contributing to an in-stream excursion of the water quality standard for Zinc. See the PPS calculations in Item #13.D for additional information. Also see Item #13.B of this Fact Sheet for additional information.

Monitoring and reporting requirements for Total Recoverable Zinc have been included in the permit at the direction of EPA based on the receiving stream's inclusion on the 2008 303(d) list for this parameter.

Outfall 003

Only monitoring and reporting requirements have been included for Outfall 003 since no information is available concerning the levels of these parameters in the effluent from this outfall. The facility is only permitted to discharge treated sanitary wastewater through Outfall 003. The drinking water standard for Copper is 1 mg/l while the secondary drinking water standard for Zinc is 5 mg/l, both which are well above the standards for protection of all uses in Reg. 2.508. Therefore, the levels of Copper and Zinc in the treated sanitary wastewater could be contributing to the impairment in the receiving stream. The quarterly monitoring and reporting requirements will provide sufficient information to determine if limits or further monitoring is needed at the time of the next permit renewal.

Outfalls 006 and 007

The permittee will be required to demonstrate that the effluent from Outfalls 006 and 007 are not causing an exceedance of the water quality standard for Zinc in the receiving stream. This demonstration will be required at Outfall 104ST. See Item No. 13.D of this Fact Sheet for additional information.

The permittee did submit one test result for Copper at both Outfall 006 and Outfall 007 with the renewal application. Both results were "non-detect." However, since the effluent from these outfalls consists solely of stormwater runoff and no other test data is available at this time, additional information is needed in order to determine if the discharges from these outfalls are contributing to the impairment of the receiving stream.

The quarterly monitoring and reporting requirements will provide sufficient information to determine if limits or further monitoring is needed at the time of the next permit renewal.

Via the Joint Pipeline to the Ouachita River - Outfall 010

The Ouachita River is on the 2008 303(d) list for Mercury in Category 4a due to unknown causes. *TMDLs for Segments Listed for Mercury in Fish Tissue for the Ouachita River Basin, and Bayou Bartholomew, Arkansas and Louisiana to Columbia* was finalized in 2002. See Item No. 8.b below for additional information.

b. TMDLs

TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary was finalized October 3, 2002. This TMDL assigns WLAs for Chlorides, Sulfates, TDS, and Ammonia to this facility. Those WLAs have been incorporated into the permit. A copy of the TMDL may be found using the following web link:

http://www2.adeg.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/ELCC_Tributary_2002_10_03.pdf

TMDLs for Segments Listed for Mercury in Fish Tissue for the Ouachita River Basin, and Bayou Bartholomew, Arkansas and Louisiana to Columbia was finalized in 2002. A daily maximum mercury limit of <0.2 µg/l was included in the modified permit at Outfall 010 issued in 2007 and will be maintained in the renewed permit. (See Order No. 9 of Docket No. 07-006-P and APCEC Minute Order 08-023.) A copy of the TMDL may be found using the following web link:

http://www2.adeg.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Ouachita_and_Bayou_Bartholomew_Hg_2002_12_18_Final.pdf

c. Endangered Species

No comments on the application were received from the U.S. Fish and Wildlife Service (USF&WS). The draft permit and Fact Sheet will be sent to the USF&WS for their review.

d. Anti-Degradation

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Antidegradation Policy and all other applicable water quality standards found in APC&EC Regulation No. 2.

9. **OUTFALL, TREATMENT PROCESS DESCRIPTION, AND CONSTRUCTION.**

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

- a. **Flows:** Outfall 001 – 2.8 MGD (April 2012)
 Outfall 002 – variable (emergency discharge outfall)
 Outfall 006 – background flow to effluent flow ratio of 53.6:1 (inst. min.)
 Outfall 007 – background flow to effluent flow ratio of 15:1 (inst. min.)
 Design Flow: Outfall 003 – 0.017 MGD
 Permitted Flow: Outfall 010 – 2 MGD (Daily maximum permit limit)
- b. **Type of Treatment:** Outfalls 001 and 010 - pH neutralization, aeration pond, & equalization pond.
 Outfall 002 – pH neutralization and aeration pond.
 Outfall 003 - Imhoff tank and sand filter.
 Outfalls 006 and 007 - none.
- c. **Discharge Description:** Outfalls 001 – treated process wastewater, treated groundwater, & contaminated stormwater.
 Outfall 002 – treated process wastewater and contaminated stormwater.
 The wastewaters which are discharged through Outfall 002 are normally sent to Lake Kildeer for discharge through Outfall 001 or to Outfall 010. Wastewaters from Outfall 002 are not diverted directly to the joint pipeline associated with Outfall 010. Discharges from Outfall 002 only occur during periods of heavy rain where the volume of wastewater is increased to such a level that it cannot all be pumped to Lake Kildeer.
 Outfall 003 – treated sanitary wastewater.
 Outfalls 006 and 007 – contaminated stormwater.
 Outfall 010 – Effluent from Outfall 001 - treated process wastewater, treated groundwater, and contaminated stormwater (via the joint pipeline to the Ouachita River approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam [Latitude: 33° 17' 30"; Longitude: 92° 28' 12"]). Note: Wastewaters from Outfalls 002 and 003 are not diverted to Outfall 010.

Per the EPA Form 2C submitted by the permittee, the treated process wastewater consists of rail car cleaning water, decanted water from the vaporizer associated with the manufacturing of nitric acid, wash down of solid material spills from the ammonium nitrate prilling shipping and storage area, and condensate from the ammonia storage

containers. Cooling tower blowdown, boiler blowdown, and a reverse osmosis waste stream are also discharged as treated process wastewater.

Cooling water is obtained from the Sparta Aquifer or the Union County Water Conservation Board. Therefore, Section 316(b) of the Clean Water Act is not applicable to this facility.

d. SUM Total Outfalls:

Outfall 101ST - SUM TOTAL OUTFALL for Outfalls 001 and 002 - treated process wastewater and contaminated stormwater (technology based limits): This is not a physical outfall. It was created as a method of demonstrating compliance with the technology based limits for Nitrates calculated in accordance with 40 CFR 418. Compliance with the limits for this outfall will be demonstrated by measuring the concentrations for the permitted parameters and calculating the loadings for both of the individual outfalls. The data for the individual outfalls will then be used to calculate the concentrations and loadings for the SUM TOTAL of Outfalls 001 and 002.

Outfall 102ST - SUM TOTAL OUTFALL for Outfalls 001 and 003 – treated process wastewater and contaminated stormwater (Outfall 001) and treated sanitary wastewater (Outfall 003): This is not a physical outfall. The TMDL deemed these two outfalls to be non-stormwater outfalls and assigned a combined load to these two outfalls. The SUM TOTAL OUTFALL was created as a method of demonstrating compliance with the TMDL based mass limits for NH₃-N, Chlorides, Sulfates, and TDS for non-stormwater sources. Compliance with the limits for this outfall will be demonstrated by measuring the concentrations for the permitted parameters and calculating the loadings at each of the individual outfalls. The data for the individual outfalls will then be used to calculate the total loadings for this SUM TOTAL OUTFALL. This will provide the permittee flexibility in their discharges while maintaining the requirements of the TMDL.

Outfall 103ST - SUM TOTAL OUTFALL for Outfalls 002, 006, and 007 – treated process wastewater and contaminated stormwater from Outfalls 002, 006, and 007: This is not a physical outfall. It was created as a method of demonstrating compliance with the TMDL based limits for stormwater outfalls for NH₃-N, Chlorides, Sulfates, and TDS. Compliance with the limits for this outfall will be demonstrated by measuring the concentrations for the permitted parameters and calculating the loadings at each of the individual outfalls. The data for the individual outfalls will then be used to calculate the total loadings for this SUM TOTAL OUTFALL. This will provide the permittee flexibility in their discharges while maintaining the requirements of the TMDL.

Outfall 104ST – SUM TOTAL OUTFALL for Outfalls 006 and 007 – contaminated stormwater. This is not a physical outfall. It was created to ensure that the combination of the effluent from these two outfalls will not create toxic conditions in the receiving stream due to WET, Total Recoverable Lead, or Total Recoverable Zinc.

- e. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score is greater than 80, this facility is classified as a major industrial.
- f. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Reg. 6.202.

10. APPLICANT ACTIVITY.

Under the standard industrial classification (SIC) code 2873 or the North American Industry Classification System (NAICS) code of 325311, the applicant's activities are the operation of a fertilizer manufacturing plant.

11. SOLIDS PRACTICES.

Solids are accumulating on the bottom of the ponds (Outfalls 001 and 002) and in the sanitary wastewater treatment plant (Outfall 003).

Treated process wastewater and contaminated stormwater pass through Lake Lee (Outfall 002) prior to being routed to Lake Kildeer (Outfall 001). Most of the solids settle out in Lake Lee. The solids were removed from Lake Lee in 2006 and hauled off site for disposal by a third party. Based on the size of Lake Kildeer and the fact that most of the solids settle out in Lake Lee, solids have not been removed from Lake Kildeer.

The solids will be removed from Outfall 003 by a licensed septic tank hauler as necessary.

12. RESERVED.

13. DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS.

The Arkansas Department of Environmental Quality has determined to issue a draft permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR Part 403 and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et. seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the draft permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations and Conditions

Following regulations promulgated at 40 CFR Part 122.44, the draft 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 as follows:

Parameter	Water Quality-Based		Technology-Based		Previous NPDES Permit		Draft 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								
TSS	N/A	N/A	30	45	30	45	30	45
NH3-N								
(April – October)	2.43 mg/l Report lbs/day	3.65 mg/l Report lbs/day	311.6 lbs/day	943.2 lbs/day	12 mg/l 265.7 lbs/day	18 mg/l 811.84 lbs/day	2.43 mg/l Report lbs/day	3.65 mg/l Report lbs/day
(November – March)	5.5 mg/l Report lbs/day	8.25 mg/l Report lbs/day	311.6 lbs/day	943.2 lbs/day	12 mg/l 265.7 lbs/day	18 mg/l 811.84 lbs/day	5.5 mg/l Report lbs/day	8.25 mg/l Report lbs/day
Nitrates as N	N/A	N/A	Report ¹ lbs/day	Report ¹ lbs/day	405.02 lbs/day	1153.73 lbs/day	Report ¹ lbs/day	Report ¹ lbs/day
DO								
(May – October)	4.0 (Minimum)		N/A	N/A	4.0 (Minimum)		4.0 (Minimum)	
(November – April)	5.0 (Minimum)		N/A	N/A	5.0 (Minimum)		5.0 (Minimum)	
Total Recoverable Copper	12.2 µg/l	24.48 µg/l	N/A	N/A	12.2 µg/l	24.48 µg/l	12.2 µg/l	24.48 µg/l
Total Recoverable Zinc	N/A	N/A	Report µg/l	Report µg/l	115.62 µg/l	231.99 µg/l	Report µg/l	Report µg/l
Chlorides	19	28.5	N/A	N/A	38	57	19	28.5

Parameter	Water Quality-Based		Technology-Based		Previous NPDES Permit		Draft 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
Sulfates	41	61.5	N/A	N/A	81	122	41	61.5
TDS	138	207	N/A	N/A	237	356	138	207
pH	6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
Chronic Lethal WET Limit	Not <100%		N/A		Not <100%		Not <100%	
Sub-Lethal WET Limit	Not <80%		N/A		Report %		Not <80%	
OUTFALL 002								
TSS	N/A	N/A	Report	Report	Report	Report	Report	Report
NH3-N								
(April – October)	0 mg/l	0 mg/l	311.6 lbs/day	943.2 lbs/day	12 mg/l 265.7 lbs/day	18 mg/l 811.84 lbs/day	0 mg/l	0 mg/l
(November – March)	0.32 mg/l	0.48 mg/l	311.6 lbs/day	943.2 lbs/day	12 mg/l 265.7 lbs/day	18 mg/l 811.84 lbs/day	0.32 mg/l	0.48 mg/l
Nitrates as N	N/A	N/A	Report ¹ lbs/day	Report ¹ lbs/day	405.02 lbs/day	1153.73 lbs/day	Report ¹ lbs/day	Report ¹ lbs/day
O & G	10	15	N/A	N/A	10	15	10	15
Total Recoverable Copper	12.2 µg/l	24.48 µg/l	N/A	N/A	12.2 µg/l	24.48 µg/l	12.2 µg/l	24.48 µg/l
Total Recoverable Lead	3.8 µg/l	7.62 µg/l	N/A	N/A	3.8 µg/l	7.62 µg/l	3.8 µg/l	7.62 µg/l
Total Recoverable Zinc	115.62 µg/l	231.99 µg/l	N/A	N/A	115.62 µg/l	231.99 µg/l	115.62 µg/l	231.99 µg/l
Chlorides	19	28.5	N/A	N/A	N/A	N/A	19	28.5
Sulfates	41	61.5	N/A	N/A	250	375	41	61.5
TDS	138	207	N/A	N/A	500	750	138	207
pH	6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
Chronic WET Testing	N/A		Report %		N/A ³		Report%	

Parameter	Water Quality-Based		Technology-Based		Previous NPDES Permit		Draft 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 003								
CBOD5	N/A	N/A	10	15	10	15	10	15
TSS	N/A	N/A	15	22.5	15	23	15	22.5
NH3-N								
(April)	2.43	3.65	N/A	N/A	10	15	2.43	3.65
(May – October)	2.43	3.65	N/A	N/A	5	7.5	2.43	3.65
(November – March)	5.5	8.25	N/A	N/A	10	15	5.5	8.25
DO								
(May – October)	4.0 (Inst. Min.)		N/A	N/A	N/A	N/A	4.0 (Inst. Min.)	
(November – April)	2.0 (Inst. Min.)		N/A	N/A	N/A	N/A	2.0 (Inst. Min.)	
FCB, col/100 ml	1000	2000	N/A	N/A	1000	2000	1000	2000
Total Recoverable Copper	N/A	N/A	Report µg/l	Report µg/l	N/A	N/A	Report µg/l	Report µg/l
Total Recoverable Zinc	N/A	N/A	Report µg/l	Report µg/l	N/A	N/A	Report µg/l	Report µg/l
Chlorides	19	28.5	N/A	N/A	N/A	N/A	19	28.5
Sulfates	41	61.5	N/A	N/A	N/A	N/A	41	61.5
Total Dissolved Solids	138	207	N/A	N/A	N/A	N/A	138	207
pH	6.0 – 9.0 s.u.		N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
OUTFALL 006								
TSS	N/A	N/A	Report	Report	Report	Report	Report	Report
NH3-N								
(April – October)	0	0	N/A	N/A	Report	Report	0	0
(November – March)	0.32	0.48	N/A	N/A	Report	Report	0.32	0.48
Total Recoverable Copper	N/A	N/A	Report µg/l	Report µg/l	N/A	N/A	Report µg/l	Report µg/l

Parameter	Water Quality-Based		Technology-Based		Previous NPDES Permit		Draft 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
(May – October)	83.4 lbs/day	125.1 lbs/day	N/A	N/A	83.4 lbs/day	125.1 lbs/day	83.4 lbs/day	125.1 lbs/day
(November – April)	166.8 lbs/day	250.2 lbs/day	N/A	N/A	166.8 lbs/day	250.2 lbs/day	166.8 lbs/day	250.2 lbs/day
TSS	N/A	N/A	500.4 lbs/day	750.6 lbs/day	500.4 lbs/day	750.6 lbs/day	500.4 lbs/day	750.6 lbs/day
NH3-N	265.2 lbs/day	605 lbs/day	265.7 lbs/day	811.84 lbs/day	265.2 lbs/day	605 lbs/day	265.2 lbs/day	605 lbs/day
Nitrate Nitrogen as N	N/A	N/A	581.3 lbs/day	1568.3 lbs/day	405.02 lbs/day	1153.73 lbs/day	581.3 lbs/day	1568.3 lbs/day
O & G	166.8 lbs/day	250.2 lbs/day	N/A	N/A	166.8 lbs/day	250.2 lbs/day	166.8 lbs/day	250.2 lbs/day
DO	N/A		Report, minimum		Report, minimum		Report, minimum	
TDS	N/A	N/A	Report	Report	Report	Report	Report	Report
Sulfates	N/A	N/A	Report	Report	Report	Report	Report	Report
Chlorides	N/A	N/A	Report	Report	Report	Report	Report	Report
Mercury, Total Recoverable	N/A	<0.2 µg/l	N/A	N/A	N/A	<0.2 µg/l	N/A	<0.2 µg/l
Cadmium, Total Recoverable	0.22 lbs/day	0.45 lbs/day	N/A	N/A	0.22 lbs/day	0.45 lbs/day	0.22 lbs/day	0.45 lbs/day
Hexavalent Chromium, Dissolved	0.96 lbs/day	1.93 lbs/day	N/A	N/A	0.96 lbs/day	1.93 lbs/day	0.96 lbs/day	1.93 lbs/day
Copper, Total Recoverable	0.82 lbs/day	1.65 lbs/day	N/A	N/A	0.82 lbs/day	1.65 lbs/day	0.82 lbs/day	1.65 lbs/day
Lead, Total Recoverable	0.40 lbs/day	0.80 lbs/day	N/A	N/A	0.40 lbs/day	0.80 lbs/day	0.40 lbs/day	0.80 lbs/day
Nickel, Total Recoverable	14.23 lbs/day	28.55 lbs/day	N/A	N/A	14.23 lbs/day	28.55 lbs/day	14.23 lbs/day	28.55 lbs/day
Selenium, Total Recoverable	0.66 lbs/day	1.32 lbs/day	N/A	N/A	0.66 lbs/day	1.32 lbs/day	0.66 lbs/day	1.32 lbs/day
Silver, Total Recoverable	0.08 lbs/day	0.16 lbs/day	N/A	N/A	0.08 lbs/day	0.16 lbs/day	0.08 lbs/day	0.16 lbs/day
Zinc, Total Recoverable	7.35 lbs/day	14.75 lbs/day	N/A	N/A	7.35 lbs/day	14.75 lbs/day	7.35 lbs/day	14.75 lbs/day

Parameter	Water Quality-Based		Technology-Based		Previous NPDES Permit		Draft 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
Chromium (III), Total Recoverable	39.52 lbs/day	79.29 lbs/day	N/A	N/A	39.52 lbs/day	79.29 lbs/day	39.52 lbs/day	79.29 lbs/day
Cyanide, Total Recoverable	0.68 lbs/day	1.37 lbs/day	N/A	N/A	0.68 lbs/day	1.37 lbs/day	0.68 lbs/day	1.37 lbs/day
Total Phosphorous	N/A	N/A	Report	Report	Report	Report	Report	Report
FCB, col/100 ml	N/A	N/A	Report	Report	Report	Report	Report	Report
pH	6.0 – 9.0 s.u.		N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
Chronic WET Testing	N/A		Report %		Report %		Report%	
OUTFALL 101ST - SUM TOTAL OUTFALL for Outfalls 001 and 002								
Nitrates as N	N/A	N/A	581.3 lbs/day	1568.3 lbs/day	405.02 lbs/day	1153.73 lbs/day	581.3 lbs/day	1568.3 lbs/day
OUTFALL 102ST - SUM TOTAL OUTFALL for Outfalls 001 and 003								
NH3-N								
(April – October)	37.90 lbs/day	56.85 lbs/day	N/A	N/A	N/A	N/A	37.90 lbs/day	56.85 lbs/day
(November – March)	85.78 lbs/day	128.67 lbs/day	N/A	N/A	N/A	N/A	85.78 lbs/day	128.67 lbs/day
Chlorides	265 lbs/day	397.5 lbs/day	N/A	N/A	N/A	N/A	265 lbs/day	397.5 lbs/day
Sulfates	503 lbs/day	754.5 lbs/day	N/A	N/A	N/A	N/A	503 lbs/day	754.5 lbs/day
TDS	1,338 lbs/day	2007 lbs/day	N/A	N/A	N/A	N/A	1,338 lbs/day	2007 lbs/day
OUTFALL 103ST - SUM TOTAL OUTFALL for Outfalls 002, 006, and 007								
NH3-N								
(April – October)	0 lbs/day	0 lbs/day	N/A	N/A	N/A	N/A	0 lbs/day	0 lbs/day
(November – March)	5.16 lbs/day	7.74 lbs/day	N/A	N/A	N/A	N/A	5.16 lbs/day	7.74 lbs/day
Chlorides	73 lbs/day	109.5 lbs/day	N/A	N/A	N/A	N/A	73 lbs/day	109.5 lbs/day
Sulfates	33 lbs/day	49.5 lbs/day	N/A	N/A	N/A	N/A	33 lbs/day	49.5 lbs/day

Parameter	Water Quality-Based		Technology-Based		Previous NPDES Permit		Draft 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
Total Dissolved Solids	635 lbs/day	952.5 lbs/day	N/A	N/A	N/A	N/A	635 lbs/day	952.5 lbs/day
OUTFALL 104ST - SUM TOTAL OUTFALL for Outfalls 006 and 007								
Total Recoverable Lead IWC (1114I)	3.40	6.82	N/A	N/A	N/A	N/A	3.40	6.82
Total Recoverable Zinc IWC (1094I)	119.50	239.77	N/A	N/A	N/A	N/A	119.50	239.77
Chronic WET Testing	N/A		Report %		N/A ³		Report%	

- ¹ Technology based limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002
- ² Reserved.
- ³ The previous permit required Acute WET testing.
- ⁴ Reserved.
- ⁵ Limit is now applicable at Outfall 104ST.

A. Justification for Limitations and Conditions of the Draft Permit

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 418 Fertilizer Manufacturing Point Source Category, Subpart D – Ammonium Nitrate Subcategory and Subpart E – Nitric Acid Subcategory. The permittee may discharge process wastewater only through Outfalls 001, 002, or 010.

i. Outfalls 001, 002, and 003 – Process Wastewater, Contaminated Stormwater, and Sanitary Wastewater Discharges to an unnamed tributary of Flat Creek, a/k/a ELCC Tributary

Only the justification for the final limits is in the following table. Justification for the interim limits is included in the narrative following the table.

Parameter	Water Quality or Technology	Justification
OUTFALL 001		
TSS	Technology	Judgment of previous permit writer, continued from previous permit, and 40 CFR 122.44(l)
NH3-N		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
Nitrates	Technology	40 CFR 418.43, 40 CFR 418.53(b), updated production levels submitted May 5, 2016, 40 CFR 122.44(l), and previous permit
DO	Water Quality	Reg. 2.505, CWA §402(o), and previous permit
Total Recoverable Copper	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Chlorides		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
Sulfates		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
TDS		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
pH	Water Quality	Reg. 2.504, CWA §402(o), and previous permit
Chronic WET Limits	Technology	Reg. 2.409, 40 CFR 122.44(l), and previous permit
OUTFALL 002		
TSS	Technology	Judgment of previous permit writer, ARR000000, 40 CFR 122.44(l), and previous permit.
NH3-N		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
Nitrates	Technology	40 CFR 418.43, 40 CFR 418.53(b), updated production levels submitted May 5, 2016, 40 CFR 122.44(l), and previous permit
Oil and Grease	Water Quality	Reg. 2.510, CWA §402(o), and previous permit
Total Recoverable Copper	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Total Recoverable Lead	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Total Recoverable Zinc	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Total Recoverable Selenium	Water Quality	Reg.2.508, CWA §402(o), and previous permit

Parameter	Water Quality or Technology	Justification
Chlorides		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
Sulfates		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
TDS		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>
pH	Water Quality	Reg. 2.504, CWA §402(o), and previous permit
Chronic WET Testing	Technology	Reg. 2.409
OUTFALL 003		
CBOD5	Technology	Reg. 6.401(A)(1), MultiSMP Model dated 07/11/2007, 40 CFR 122.44(l), and previous permit
TSS	Technology	Reg. 6.401(A)(1), 40 CFR 122.44(l), and previous permit
NH3-N		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
DO	Water Quality	MultiSMP Model dated July 11, 2007, Reg. 2.505, CWA §402(o), and previous permit
FCB	Water Quality	Reg. 2.507, CWA §402(o), and previous permit
Total Recoverable Copper	Technology	2008 303(d) list
Total Recoverable Zinc	Technology	2008 303(d) list
Chlorides		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
Sulfates		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
TDS		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
pH	Water Quality	Reg. 2.504, CWA §402(o), and previous permit
OUTFALL 101ST - SUM TOTAL OUTFALL FOR OUTFALLS 001 AND 002		
Nitrates	Technology	40 CFR 418.43, 40 CFR 418.53(b), updated production levels submitted May 5, 2016, 40 CFR 122.44(l), and previous permit
OUTFALL 102ST - SUM TOTAL OUTFALL FOR OUTFALLS 001 AND 003		
NH3-N		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
Chlorides		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
Sulfates		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
TDS		<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>

Outfall 001

TSS has been included in the permit to protect the designated uses of the receiving waters. 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 Reg. 2.408, "The receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature..." ADEQ acknowledges that there are no Water Quality Standards for TSS; however, as TSS increases in a stream, light is blocked from aquatic plants, and then fish and other aquatic organisms are affected by the cloudy conditions. Therefore, these limits are necessary to protect the water quality of the receiving stream. Additionally, elevated TSS could cause high turbidity in the receiving stream. TSS can also influence the benthic environment after settling in the receiving stream. Suspended solids that settle in the receiving stream can exert oxygen demand in the receiving stream, which can contribute to unacceptable level of dissolved oxygen sags in the receiving stream as result of high-suspended solids. The TSS limits, which have remained unchanged since prior to 1990, are further carried over from the existing permit in accordance with anti-backsliding requirements found in 40 CFR 122.44(l).

The minimum required DO levels are also not changing with this permit renewal. The DO levels are based on a MultiSMP model and are necessary to protect the water quality of the receiving stream. The permittee is allowed to demonstrate compliance with the minimum required DO levels by averaging all samples taken each hour. See Condition No. 20 of Part II of the permit and LIS 03-067, Item No. 1.1 of the Order and Agreement for additional information.

The Total Recoverable Copper limits are remaining unchanged with this permit renewal since the permittee has continued to demonstrate reasonable potential for water quality violations due to the levels of this parameter in the effluent.

Monitoring and reporting requirements for Total Recoverable Zinc have replaced the limits. The permittee does not demonstrate reasonable potential for water quality violations due to the levels of Zinc in the effluent. Monitoring and reporting requirements have been included at the direction of EPA due to the inclusion of the receiving stream on the 2008 303(d) list for this parameter.

The pH limit is remaining at the standards required by Reg. 2.504. The permittee may demonstrate compliance with the pH standards by use of a continuous monitor and averaging the results of all samples taken each hour. See Condition No. 19 of Part II of the permit and LIS 03-067, Item No. 1.m of the Order and Agreement.

Nitrates Limits

The Nitrates concentration limits have been replaced with monitoring and reporting requirements. The removal of the drinking water use from the receiving stream was approved by EPA in a letter dated November 9, 2007. Reg. 2 does not contain a water quality standard for this parameter. Therefore, the only applicable standards are the technology based standards contained in 40 CFR Part 418. Those standards do not require concentration limits be placed in the permit.

Updated production levels were submitted on May 5, 2016, due to completion of a plant expansion. The production based ELGs in 40 CFR Part 418, Subparts D and E, were used to calculate the technology based limits for Nitrates. Stormwater runoff from outside the battery area of the ammonium nitrate manufacturing operations and cooling tower blowdown are not subject to 40 CFR Part 418, Subpart D (40 CFR 418.40).

Since stormwater from outside the battery area of the ammonium nitrate manufacturing operations and the cooling tower blowdown are not regulated waste streams and are combined with the regulated streams prior to any treatment occurring, the combined waste stream formula in 40 CFR 403.6(e) was used to calculate alternative mass and concentration limits. The watershed analysis determined the amount of Nitrates as Nitrogen which were in the unregulated streams to be 113.5 lbs/day.

A copy of the technology based limits may be found using the following link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Technology%20Based%20Calculations%20for%20Ammonia%20and%20Nitrate%20s_20160525.pdf

The technology based mass limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002. The permittee is also required to report the mass of Nitrates discharged at the individual outfalls on the DMRs for Outfall 001 and Outfall 002.

Interim and Final Ammonia-Nitrogen Limits

Concentration and mass limits based upon the TMDL must be included in this permit in accordance with 40 CFR 122.44(d)(1)(vii)(B). The final monthly average mass limits will be equal to the mass limits as found in Table 4.2 of the TMDL. The final monthly average concentration limits are contained in Appendix F, Table F.2 of the TMDL. The daily maximum concentration and mass limits are 1.5 times the monthly average limits in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

A review of the NH₃-N data submitted on the DMRs during the term of the previous permit has shown that the facility cannot meet the limits based on the WLA in the TMDL, therefore a three-year schedule of compliance has been granted in accordance with Reg. 2.104. The interim limits are based on the final limits from the previous permit.

The Department compared the technology based limits calculated from the ELGs to the TMDL based limits. Since the TMDL based limits are more stringent, they must be placed in the permit.

Mineral Limits

Concentration and mass limits based upon the TMDL must be included in this permit in accordance with 40 CFR 122.44(d)(1)(vii)(B). The concentration limits upon which the mass limits were based in Appendix D, Table D.2 of the TMDL will be applied at Outfall 001. The loading limits, as set forth in Table 4. will be applied at the SUM Total Outfall for Outfalls 001 and 003.

The monthly average concentration limits for Chlorides, Sulfates, and TDS are based on Appendix D, Table D.2 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits and mass limits are 1.5 times the monthly average limits in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

The previous permit contained limits for all three minerals. With the exception of the average monthly limit for TDS, the permittee is able to meet the previous permit limits which were based on Reg. 2.511(B). However, a review of the DMR data for minerals at this outfall showed that the permittee is unable to meet the lower proposed permit limits based on the Waste Load Allocation in the TMDL. Therefore, a three-year schedule of compliance for the new water quality based limits has been included in the permit as allowed by Reg. 2.104. The mineral requirements from the previous permit are being carried forth as the interim limits.

Outfall 002

Discharges from this outfall are expected to have the same characteristics as the discharges from Outfall 001. However, discharges from Outfall 002 will normally only occur in response to a heavy rain event.

Technology based limits for NH₃-N (interim only) and Nitrates will also be applicable to Outfall 002 since process wastewater is allowed to be discharged through this outfall. The technology based limits are applied at SUM TOTAL OUTFALL for Outfalls 001 and 002.

The O &G, and pH limits are continued unchanged from the previous permit. These parameters are typically included in outfalls where stormwater is a major component of the effluent.

The permit will continue to require that the permittee monitor and report the levels of TSS in the

effluent from this outfall. A review of the DMR data for this outfall showed that the TSS levels exceeded the benchmark value of 100 mg/l contained in the general permit for stormwater runoff associated with industrial activity (ARR000000) 25% of the time during the period of December 2011 through May 2015. Since the permittee should be able to implement BMPs which would lower the levels of TSS in the effluent, the permit will contain conditions similar to those in ARR000000 which will require the permittee to investigate the cause of any TSS level exceeding the benchmark value of 100 mg/l and to implement corrective actions.

The Department has added Condition No. 18 to Part II of the permit requiring the permittee to investigate the cause and/or source of the elevated pollutant levels, review the BMPs, and determine and document a corrective action plan to address the benchmark exceedance in the event that the TSS level is above 100 mg/l. Failure to reduce the TSS levels in the effluent from these outfalls may result in TSS or turbidity limits being included in the permit at the time of the next renewal.

The Total Recoverable Copper, Total Recoverable Lead, and Total Recoverable Zinc limits are continued unchanged from the previous permit. The permittee continued to demonstrate reasonable potential for water quality violations during the term of the previous permit. The limits were calculated in accordance with the procedures set forth in the CPP. See Item #13.D of this Fact Sheet for additional information.

The Total Recoverable Selenium limits will remain unchanged from the previous permit. The permittee has not submitted information which would allow the removal of these limits without violating the anti-backsliding standards of 40 CFR 122.44(i).

Nitrates Limits

The Nitrates concentration limits have been replaced with monitoring and reporting requirements. The removal of the drinking water use from the receiving stream was approved by EPA in a letter dated November 9, 2007. Reg. 2 does not contain a water quality standard for this parameter. Therefore, the only applicable standards are the technology based standards contained in 40 CFR Part 418. Those standards do not require concentration limits be placed in the permit.

Updated production levels were submitted on May 5, 2016, due to completion of a plant expansion. The production based ELGs in 40 CFR Part 418, Subparts D and E, were used to calculate the technology based limits for Nitrates. Stormwater runoff from outside the battery area of the ammonium nitrate manufacturing operations and cooling tower blowdown are not subject to 40 CFR Part 418, Subpart D (40 CFR 418.40).

Since stormwater from outside the battery area of the ammonium nitrate manufacturing operations and the cooling tower blowdown are not regulated waste streams and are combined with the regulated streams prior to any treatment occurring, the combined waste stream formula

in 40 CFR 403.6(e) was used to calculate alternative mass and concentration limits. The watershed analysis determined the amount of Nitrates as Nitrogen which were in the unregulated streams to be 113.5 lbs/day.

A copy of the technology based limits may be found using the following link:

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Technology%20Based%20Calculations%20for%20Ammonia%20and%20Nitrate_s_20160525.pdf

The technology based mass limits are applied at the SUM TOTAL OUTFALL for Outfalls 001 and 002. The permittee is also required to report the mass of Nitrates discharged at the individual outfalls on the DMRs for Outfall 001 and Outfall 002.

Interim and Final Ammonia-Nitrogen Limits

Concentration and mass limits based upon the TMDL must be included in the permit in accordance with 40 CFR 122.44(d)(1)(vii)(B). The final monthly average concentrations upon which the mass limits were based are contained in Section 4.2.5 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits are 1.5 times the monthly average limit in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

A review of the NH₃-N data submitted on the DMRs during the term of the previous permit has shown that the facility cannot meet the mass limits based on the TMDL. Therefore, a three-year schedule of compliance has been granted in accordance with Reg. 2.104. The interim limits are based on the final limits from the previous permit.

The mass limits based on the TMDL are contained in the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007. See Item A.1.iii of this section of the Fact Sheet for information regarding the SUM TOTAL OUTFALL.

Mineral Limits

Concentration and mass limits based upon the TMDL must be included in the permit in accordance with 40 CFR 122.44(d)(1)(vii)(B). The final monthly average concentrations upon which the mass limits were based are contained in Appendix D, Table D.2 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits are 1.5 times the monthly average limit in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

The previous permit contained limits which were equal to the secondary drinking water standards for Sulfates and Total Dissolved Solids but did not contain any requirements for

Chlorides at this outfall. A review of the DMR data for Sulfates and Total Dissolved Solids showed that the permittee is unable to meet the new concentration limits for those parameters. Limited information gathered during a UAA regarding the Chlorides levels at this outfall is available so the Department is unable to verify that the permittee would be able to meet the Chlorides limits at this time. Therefore, a three year schedule of compliance has been granted in accordance with Reg. 2.104. The previous permit limits for Sulfates and Total Dissolved Solids will be the interim limits for those parameters. Since there is no data available concerning the levels of Chlorides in the effluent from this outfall, the interim requirements for Chlorides will be monitoring and reporting.

The mass limits based on the TMDL are contained in the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007. See Item A.1.iii of this section of the Fact Sheet for information regarding the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007.

Outfall 003

The CBOD5, the TSS, the FCB, and the pH limits are continued unchanged from the previous permit.

Minimum required DO levels have been added to the permit based upon the review of the MultiSMP model. The MultiSMP model showed that those DO levels are necessary to maintain the standards set forth in Reg. 2.505. The Department recognizes that the DO requirements for this outfall are not as stringent as the requirements for Outfall 001. The difference is due to the significantly lower flow for Outfall 003.

Monitoring and reporting requirements for Total Recoverable Copper and Total Recoverable Zinc have been included in the permit since the receiving stream is on the 303(d) list for these parameters. No data is available regarding the levels of these parameters in the discharge from this sanitary sewer outfall. See Item No. 8.a of this Fact Sheet for additional information.

Ammonia-Nitrogen and Minerals

Concentration and mass limits based upon the TMDL must be included in this permit in accordance with 40 CFR 122.44(d)(1)(vii)(B).

The monthly average concentration limits for Ammonia-Nitrogen are based on Appendix F, Table F.2 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits and mass limits are 1.5 times the monthly average limits in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

Two effluent NH3-N test results from the time frame of January 2008 through October 2012 were over the new limits. Since the test data shows that the permittee is not always capable of meeting the new limits, a three year schedule of compliance will be given in accordance with

Reg. 2.104. The interim limits will be the limits based on maintaining the DO standard in the receiving stream and were in effect during the term of the previous permit.

The monthly average concentration limits for Chlorides, Sulfates, and TDS are based on Appendix D, Table D.2 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits and mass limits are 1.5 times the monthly average limits in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

Previous permits have not included provisions requiring the facility to monitor the Chlorides, Sulfates, and TDS levels in the effluent from Outfall 003. Therefore, information concerning Chlorides, Sulfates, and TDS from Outfall 003 is not available. Since the Department cannot verify that the permittee would be able to meet water quality based limits upon issuance, a three year schedule of compliance will be given in accordance with Reg. 2.104. In the interim, the permittee must monitor and report the mineral levels in the effluent from this outfall.

OUTFALL 101ST - SUM TOTAL OUTFALL for Outfalls 001 and 002

Compliance with the limits at this outfall will be demonstrated by using the test results from Outfalls 001 and 002 and flow-weighted calculations.

When Outfall 002 is discharging, the Nitrates from Outfall 001 and Outfall 002 combined must not exceed the outfall sum. This outfall is necessary to ensure that the applicable technology based standards are not exceeded when discharges are occurring from both outfalls. NH₃-N limits have only been included as interim limits at the SUM TOTAL OUTFALL for Outfalls 001 and 002. The interim NH₃-N limits will be the limits which were in the previous permit for this outfall. After the interim period of three years, the permittee will be required to comply with NH₃-N limits which are based on the TMDL.

For additional information concerning this outfall, please see Item #9.d of this Fact Sheet.

OUTFALL 102ST - SUM TOTAL OUTFALL for Outfalls 001 and 003

Compliance with the limits at this outfall will be demonstrated by using the test results from Outfalls 001 and 003 and flow-weighted calculations.

The combined discharges from Outfalls 001 and 003 must not exceed the total listed in the permit for the SUM TOTAL OUTFALL. This outfall is necessary to ensure that the total WLA in the TMDL is not exceeded while allowing the facility flexibility in the amounts discharged through each outfall.

ii. **OUTFALLS 006, 007, and 104ST – Stormwater outfalls discharging to an unnamed tributary of Flat Creek, a/k/a ELCC Tributary**

Only the justification for the final limits is in the following table. Justification for the interim limits is included in the narrative following the table.

Parameter	Water Quality or Technology	Justification
OUTFALLS 006 and 007		
Stream Flow	Water Quality	Stormwater flow study
TSS	Technology	Judgment of permit writer, ARR000000, previous permit, 40 CFR 122.44(l), and previous permit
NH3-N	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA</i>	
Total Recoverable Copper	Technology	2008 303(d) list
Total Recoverable Lead	Technology	Reg. 2.508, CWA §402(o), and previous permit
Total Recoverable Zinc	Technology	2008 303(d) list
Chlorides	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>	
Sulfates	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>	
TDS	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas, CWA §402(o), and previous permit</i>	
O & G	Water Quality	Reg. 2.510, CWA §402(o), and previous permit
pH	Water Quality	Reg. 2.504, CWA §402(o), and previous permit
OUTFALL 104ST		
Total Recoverable Lead	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Total Recoverable Zinc	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Chronic WET Testing	Technology	Reg. 2.409

The permittee conducted a stormwater flow study regarding the receiving stream for Outfall 006 and Outfall 007 which demonstrated that there is water in the receiving stream when discharges are occurring from those outfalls. As a result, many of the permit limits and requirements for these outfalls have been modified.

When the permit was modified to allow for discharge to the Ouachita River via the joint pipeline, a requirement to develop a program to ensure that the first two inches of rain in a 24-hour period would be routed to Outfall 010 was included in the permit. This requirement was included in the permit because it would send the stormwater from the first flush of the watershed to the pipeline. At that time, it was assumed that the stormwater from the first flush would have significantly higher concentrations of metals than stormwater from the end of a 24-hour rain event.

In an e-mail dated December 17, 2010, which was submitted on behalf of the permittee, a request was made to remove the condition requiring that the permittee demonstrate how they would ensure that the first two inches of rain were routed to Outfall 010. The e-mail stated that, based on the findings of the stormwater flow study, it is anticipated that there is no need to route those outfalls to the treatment system for ultimate discharge through Outfall 010.

On November 4, 2016, the permittee, their consultants, and the Department had a meeting. During this meeting, the need for diverting stormwater runoff from Outfalls 006 and 007 to Outfall 010 was discussed. The permittee outlined several actions which had been taken over the past several years. These actions included reducing the size of the watersheds draining to Outfalls 006 and 007. The permittee also conducted testing to determine if the levels of metals in the stormwater decreased as the storm event continued. The testing showed that the levels of metals in the effluent were not affected by the time at which they were taken during the storm event. Therefore, the permittee requested again that the 2 inch rainfall requirement be removed from the permit.

Based on the reason for adding the requirement to the permit and the additional information submitted by the permittee, the requirement will be removed from the permit. The information presented in the November 2016 meeting as well as the test data mentioned in the preceding paragraph may be found using the following links:

2” Rainfall Permitting Timeline

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_2%20Inch%20Rainfall%20Permitting%20Timeline_20161202.pdf

Historical and Current Pollution Prevention Actions

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Historical%20and%20Current%20Pollution%20Prevention%20Actions_20161202.pdf

Outfall 006 and 007 Metals Data

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20006%20Zinc%20Levels_20161202.pdf

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20006%20Lead%20Levels_20161202.pdf

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20007%20Lead%20Levels_20161202.pdf

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20007%20Zinc%20Levels_20161202.pdf

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfalls%20006%20and%20007%20Raw%20Data_20161202.pdf

The permittee is still required to monitor and report the levels of TSS in the effluent from both Outfall 006 and Outfall 007. During a review of the DMR data submitted during the term of the previous permit, the TSS levels often exceeded the benchmark value of 100 mg/l contained in the general permit for stormwater runoff associated with industrial activity (ARR000000).

The Department has added Condition No. 18 to Part II of the permit requiring the permittee to investigate the cause and/or source of the elevated pollutant levels, review the BMPs, and determine and document a corrective action plan to address the benchmark exceedance in the event that the TSS level is above 100 mg/l. Failure to reduce the TSS levels in the effluent from these outfalls may result in TSS or turbidity limits being included in the permit at the time of the next renewal.

The limits for Total Recoverable Cadmium (Outfall 006) have been removed from the permit. The Total Recoverable Cadmium limits have been removed due to lack of reasonable potential. See Item No. 13.D of this Fact Sheet for additional information.

The Total Recoverable Lead and the Total Recoverable Zinc limits have been replaced with monitoring and reporting requirements. The facility will be required to monitor the stream flow as well as continuing to monitor the effluent flow. This information will then be used to calculate the in-stream waste concentration (IWC) of each metal. The permit requires the IWC to be less than or equal to the applicable WQS. If the permittee reports an IWC above the WQS, it will be considered a violation of a permit limit. This method has been included in the permit since the facility has completed a background flow study which has demonstrated that there is background flow in the receiving stream when the facility is discharging through Outfalls 006 and 007.

Monitoring and reporting requirements for Total Recoverable Copper have been added to the permit because the receiving stream is on the 303(d) list for that parameter. A TMDL has not yet been completed for Total Recoverable Copper.

See Item 13.B and Item 13.D of this Fact Sheet for additional information concerning the requirements for metals at Outfalls 006 and 007.

O & G requirements are remaining unchanged from the previous permit. O & G can be a pollutant of concern in stormwater runoff associated with industrial activity if the appropriate BMPs are not in place.

The pH limits are remaining unchanged.

Ammonia-Nitrogen

Concentration and mass limits based upon the TMDL must be included in the permit in accordance with 40 CFR 122.44(d)(1)(vii)(B). The final monthly average concentrations upon which the mass limits were based are contained in Section 4.2.5 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits are 1.5 times the monthly average limit in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

A review of the NH₃-N data submitted on the DMRs during the term of the previous permit has shown that the facility cannot meet the limits based on the TMDL. Therefore, a three-year schedule of compliance has been granted in accordance with Reg. 2.104. The previous permit contained only monitoring and reporting requirements for NH₃-N at Outfalls 006 and 007. The monitoring and reporting requirements have been included in this permit as the interim requirements for NH₃-N at Outfalls 006 and 007.

The loading limits based on the TMDL are contained in the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007. See Item A.1.iii of this section of the Fact Sheet for information regarding the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007.

Minerals

Concentration and mass limits based upon the TMDL must be included in the permit in accordance with 40 CFR 122.44(d)(1)(vii)(B). The final monthly average concentrations upon which the loadings were based are contained in Appendix D, Table D.2 of the TMDL and 40 CFR 122.45(f)(2). The daily maximum concentration limits are 1.5 times the monthly average limit in accordance with Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

The previous permit contained Total Dissolved Solids limits but no requirements for Chlorides and Sulfates at both outfalls. Based on a review of TDS data submitted on the DMRs, the permittee is currently unable to meet limits based on the TMDL. Limited information gathered during a UAA regarding the Chlorides and Sulfates levels at these outfalls is available so the Department is unable to verify that the permittee would be able to meet the Chlorides and Sulfates limits at this time. Therefore, a three-year schedule of compliance for the new water quality based limits has been included in the permit as allowed by Reg. 2.104.

During the term of the previous permit, the permittee conducted a stormwater flow study. The results of the stormwater flow study showed that the background flow used to calculate the limits in the previous permit is not valid. Therefore, the previous permit limits cannot be used as interim limits. Since the permit must contain a final TDS limit based on the TMDL, the

permittee will only be required to monitor and report the levels of TDS in the effluent from Outfalls 006 and 007 in the interim.

The loading limits based on the TMDL are contained in the SUM TOTAL OUTFALL for Outfalls 002, 006, and 007. See Item A.1.iii of this section of the Fact Sheet for information regarding this SUM TOTAL OUTFALL.

WET Testing

The Acute WET limits have been replaced by Chronic WET requirements at the request of EPA Region VI. The request was made based on the critical dilutions at both outfalls.

The Department has reviewed the locations of the two outfalls and the point at which the discharges commingle. Based on the close proximity, the Department has revised the WET testing requirements so that only one test will be required. The WET test will be required to be conducted using flow weighted composite samples from each outfall. The combining of the effluent from two outfalls to conduct one WET test is already required by Part II.9.3.d.vi of the permit.

See Item #14 of this Fact Sheet for additional information.

iii. OUTFALL 103ST - SUM TOTAL OUTFALL for Outfalls 002, 006, and 007

Parameter	Justification
NH3-N	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
Chlorides	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
Sulfates	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>
TDS	<i>TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.</i>

Outfalls 002, 006, and 007 are designated as stormwater dischargers by the TMDL. (Note: Outfalls 004 and 005 were included in the TMDL. These outfalls have been removed from this permit at the request of the permittee. The stormwater from areas of the facility which previously drained to Outfalls 004 and 005 have been rerouted.)

Outfall 002 normally discharges once per year or less while discharges from Outfalls 006 and 007 normally occur at least once per month. Due to the infrequent discharges from Outfall 002, the allocation in the TMDL cannot be divided between the three outfalls in an equitable manner. Therefore, the TMDL based limits have been established at a SUM TOTAL OUTFALL as a mechanism for demonstrating compliance with the requirements of the TMDL.

Concentration limits have not been included at this outfall. Concentration limits for NH3-N, Chlorides, Sulfates, and TDS based on the TMDL have been included at Outfalls 002, 006, and 007. Compliance with the mass limits at this outfall will be demonstrated by calculating the loadings of NH3-N, Chlorides, Sulfates, and TDS from Outfalls 002, 006, and 007 and totaling the loadings for each parameter.

For additional information concerning this outfall, please see Item Nos. 8.b, 9.d, and 13.A.ii of this Fact Sheet.

iv. **OUTFALL 010 – effluent from Outfall 001 - treated process wastewater, treated groundwater, and contaminated stormwater (via the joint pipeline to the Ouachita River approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam [Latitude: 33° 17' 30"; Longitude: 92° 28' 12"])**.

Parameter	Water Quality or Technology	Justification
Flow	Water Quality	Model performed by permittee & approved by ADEQ & EPA, CWA §402(o), and previous permit
CBOD5	Water Quality	Model performed by permittee & approved by ADEQ & EPA, CWA §402(o), and previous permit
TSS	Technology	Judgment of Office of Water Quality staff, 40 CFR 122.44(l), and previous permit
NH3-N	Water Quality	Model performed by permittee & approved by ADEQ & EPA, CWA §402(o), and previous permit
Nitrate Nitrogen as N	Technology	40 CFR 418.43, 40 CFR 418.53(b), 40 CFR 122.44(l)
O & G	Water Quality	Reg. 2.510, CWA §402(o), and previous permit
DO	Technology	Judgment of permit writer, 40 CFR 122.44(l), and previous permit
TDS	Technology	Judgment of permit writer, 40 CFR 122.44(l), and previous permit
Sulfates	Technology	Judgment of permit writer, 40 CFR 122.44(l), and previous permit
Chlorides	Technology	Judgment of permit writer, 40 CFR 122.44(l), and previous permit
Mercury, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Cadmium, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Hexavalent Chromium, Dissolved	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Copper, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Lead, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Nickel, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Selenium, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Silver, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit

Parameter	Water Quality or Technology	Justification
Zinc, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Chromium (III), Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Cyanide, Total Recoverable	Water Quality	Reg. 2.508, CWA §402(o), and previous permit
Total Phosphorous	Technology	Reg. 6.402, 40 CFR 122.44(l), and previous permit
FCB	Technology	Judgment of permit writer and previous permit, 40 CFR 122.44(l), and previous permit
pH	Water Quality	Reg. 2.504, CWA §402(o), and previous permit
Chronic WET Testing	Technology	Reg. 2.409

The daily maximum flow limit of 2 MGD has been continued from the permit modified in 2007 because the limits obtained from the water quality studies were based on this flow limit. A limit is necessary because there are only mass limits for most of the parameters included in the permit at this outfall. The permittee agreed to this limit during the appeal of the modified permit. This limit will not be changed to a monthly average limit because that would change the terms of the agreement between the Department and the facility.

The CBOD5 mass limits were calculated using the permitted flows of 2 MGD, effluent concentrations obtained from a model performed by the permittee and approved by the Department and US EPA, and the formula below. These limits are included in the updated Water Quality Management Plan (WQMP). The concentration limits for CBOD5 have only been included in the joint permit (AR0050296) as required by EPA in the February 3, 2006, letter to ADEQ.

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

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 Section 2.408 of APCEC Regulation No. 2, “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 Section 2.503 of APCEC Regulation No. 2. Regulation No. 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.

TSS mass limitations were calculated using the permitted maximum flow of 2 MGD and concentrations of 30 mg/l on a monthly average and 45 mg/l on a daily maximum and the following formula:

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

El Dorado Chemical Company's current permit contains technology based effluent limitations for Nitrates as Nitrogen through the SUM TOTAL Outfall for Outfalls 001 and 002.

Oil and Grease limits have been included in the permit at Outfall 010 because the outfall in question is part of the joint pipeline. Oil and Grease limits are included in the joint pipeline permit (AR0050296).

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.

Outfall 001, which is now routed to the pipeline, has been shown to contain minerals in levels which required numerical limits to be placed in the existing individual permits. Based on the judgment of the Office of Water Quality staff, monitoring and reporting requirements for sulfates, chlorides, and total dissolved solids have been included in the permit.

Metals limits have been included in the permit in lieu of monthly WET test. Mercury limits were included in the permit because the receiving stream is on the 303(d) list for this parameter. As of the date of this permit, the permittee has not demonstrated that detectable levels of mercury are in the effluent.

Based on information submitted to the Department (i.e., nutrient study), total phosphorus monitoring and reporting requirements have been included in the permit. The data gathered by the required testing will enable the Department to determine the source(s) of any exceedances at the joint pipeline. The joint pipeline permit (AR0050296) contains numerical limits for total phosphorous based upon Reg. 6.402.

Monitoring and reporting requirements for fecal coliform bacteria have been included based on the judgment of the Office of Water Quality. There are monitoring and reporting requirements for fecal coliform bacteria in the joint pipeline permit (AR0050296) because the El Dorado Water Utilities will be allowed to discharge over 50% of the effluent through the joint pipeline under NPDES Permit No. AR0049743.

The pH limits have been changed to 6.0 – 9.0 s.u. to ensure the required accuracy in reporting.

Ammonia-Nitrogen (NH3-N)

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 Reg. 2.512 and an ADEQ internal 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 = design flow = 2 MGD = 3.09 cfs

The 7Q10 of 750 cfs is based on flow data from the USGS Camden gauge (No. 07362000) for the time frame 1982 – 2001.

Q_b = 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 OUA 0037 – Ouachita River downstream of Camden, AR)

The following pH and temperature were used for the Gulf Coastal Plains Ecoregion:

Month	pH s.u.	Temperature °C	IWC (Monthly Avg)	IWC (Daily Max)
April-October	6.6	30	2.4 mg/l	6.1 mg/l
November-March	6.6	14	6.8 mg/l	17.0 mg/l

Notes:

- Daily Max = 4-day Average in APCEC Regulation No. 2
- Monthly Average = 30-day Average in APCEC Regulation No. 2

Calculations

Monthly Average Limits

April – October

$$C_d = (2.4(3.09 + 187.5) - 0.04*187.5)/3.09 = 145.6 \text{ mg/l} = 2428.6 \text{ lbs/day}$$

November – March

$$Cd = (6.8(3.09 + 187.5) - 0.04*187.5)/3.09 = 417.0 \text{ mg/l} = 6955.6 \text{ lbs/day}$$

Daily Maximum Limits

April – October

$$Cd = (6.1(3.09 + 187.5) - 0.04*187.5)/3.09 = 373.8 \text{ mg/l} = 6235.0 \text{ lbs/day}$$

November – March

$$Cd = (17.0(3.09 + 187.5) - 0.04*187.5)/3.09 = 1046.1 \text{ mg/l} = 17448.9 \text{ lbs/day}$$

By request of the City of El Dorado and El Dorado Chemical Company, the ammonia daily maximum value will be reduced by 86 lbs/day for the City’s North Plant and 121 pounds per day for the City’s South Plant. As a result, El Dorado Chemical Company’s ammonia daily maximum value will be increased by 207 lbs/day for the DO based limits only.

Comparison between Arkansas Water Quality Standard DO based limits, calculated toxicity limits, and technology based limits for Ammonia Nitrogen (NH3-N):

Month	DO Based Limits		Calculated Toxicity Limits		Technology Based Limits		Final Water Quality Limits	
	Monthly Avg. (lbs/day)	Daily Max (lbs/day)	Monthly Avg. (lbs/day)	Daily Max (lbs/day)	Monthly Avg. (lbs/day)	Daily Max (lbs/day)	Monthly Avg. (lbs/day)	Daily Max (lbs/day)
(April – October)	265.2	605.0	2428.6	6235.0	265.7	811.84	265.2	605.0
(November – March)	265.2	605.0	6955.6	17448.9	265.7	1153.73	265.2	605.0

B. Anti-backsliding

The draft permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA 402(o)(2), CWA 303(d)(4), or 40 CFR 122.44 (l)(2)(i).

Outfall(s)	Change	Justification
001	Temperature limit removed	New information - Permittee submitted a study demonstrating that the rise in temperature in Lake Kildeer during the summer months was due to climatic conditions. This study was approved by the Department in a letter dated January 5, 2007. (CWA §402(o)(2)(B)(i))
001	Total Recoverable Copper and TSS mass limits increased	New information – The highest monthly average flow has increased. (40 CFR 122.44(l)(2)(i)(B)(I))
001	Selenium and Zinc limits removed	Material and substantial change – The facility now obtains the majority of its process and cooling water from the Ouachita River in lieu of the Sparta Aquifer. Re-evaluations of the metals at this outfall were warranted since the levels of parameters in each body of water are different. Monitoring and reporting requirements for Total Recoverable Zinc have been included in the permit at the direction of EPA Region VI due to the receiving stream’s inclusion on the 2008 303(d) list for this parameter. (40 CFR 122.44(l)(2)(i)(A))
002	Selenium limit removed	Material and substantial change – The facility now obtains the majority of its process and cooling water from the Ouachita River in lieu of the Sparta Aquifer. Re-evaluations of the metals at this outfall were warranted since the levels of parameters in each body of water are different. (40 CFR 122.44(l)(2)(i)(A))

Outfall(s)	Change	Justification
001, 002, and 101ST (SUM TOTAL Outfall for 001 & 002)	Nitrates mass limits increased	Material and substantial alterations or additions to the permitted facility – Production levels have increased due to a recently completed plant expansion. The permit now only applies the technology based Nitrates limits at the SUM TOTAL OUTFALL. Limits at the individual outfalls are not necessary because the discharge of Nitrates is limited at the SUM TOTAL OUTFALL. (40 CFR 122.44(l)(2)(i)(A))
001, 002, and 101ST (SUM TOTAL Outfall for 001 & 002)	Nitrates concentration limit removed	New information - The drinking water use was removed from the receiving stream in 2007. The permittee also now rarely discharges from these outfalls since the effluent is now discharged to the Ouachita River via the joint pipeline. (CWA §402(o)(2)(B)(i))
006 & 007	Total Recoverable Cadmium (Outfall 006) removed	New information – The permittee conducted a stormwater flow study at this outfall. The use of the stream flow shows that there is not reasonable potential at this time. Calculations have demonstrated that RP does not exist at a stream flow to effluent flow ratio lower than the lowest one observed in the study. (CWA §402(o)(2)(B)(i))
006 & 007	Total Recoverable Lead, and Total Recoverable Zinc replaced with requirement to demonstrate IWC is less than the applicable WQS at Outfall 104ST	New information – The permittee conducted a stormwater flow study at this outfall. This study demonstrated that there is background flow in the receiving stream when effluent is being discharged through Outfalls 006 and 007. The permittee will be required to demonstrate that the IWCs are less than the required water quality standards. Therefore, the permittee will still be demonstrating that they are not causing exceedances of the water quality standards. (CWA §402(o)(2)(B)(i))
006 & 007	Acute WET limits removed	Chronic WET testing requirements have replaced the Acute requirements. This change has been made at the request of EPA Region VI due to the critical dilution at each outfall.

C. **208 Plan (Water Quality Management Plan)**

The 208 Plan, developed by the ADEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary. The following listed updates to the 208 Plan are proposed to be made:

1. DO instantaneous minimum limits of 5.0 mg/L during November – April and 4.0 mg/L during May – October were added at Outfall 001 based on the 12/9/2015 modeling analysis.
2. DO instantaneous minimum limits of 2.0 mg/L during November – April and 4.0 mg/L during May – October were added at Outfall 003 based on the 12/9/2015 modeling analysis.
3. NH₃-N monthly average concentration limits of 2.43 mg/L during April-October and 5.5 mg/L during November-March were added at Outfalls 001 and 003, based on TMDL dated October 3, 2002.
4. NH₃-N monthly average mass limits of 37.9 lb/day during April-October and 85.78 lb/day during November-March for the sum of Outfalls 001 and 003 were added based on TMDL dated October 3, 2002.
5. NH₃-N monthly average concentration limits of 0.0 mg/L during April-October and 0.32 mg/L during November-March were added at Outfalls 002, 006, 007, based on TMDL dated October 3, 2002.
6. NH₃-N monthly average mass limits of 0.0 lb/day during April-October and 5.16 lb/day during November-March for the sum of Outfalls 002, 006, 007 were added based on TMDL dated October 3, 2002.
7. Chlorides monthly average concentration limit of 19 mg/L, Sulfates monthly average concentration limit of 41 mg/L, and TDS monthly average concentration limit of 138 mg/L at Outfalls 001, 003, 002, 006, and 007 were added based on TMDL dated October 3, 2002.
8. Chlorides monthly average mass limit of 265 lb/day, Sulfates monthly average mass limit of 503 lb/day, and TDS monthly average mass limit of 1338 lb/day, for the sum of Outfalls 001 and 003, were added based on TMDL dated October 3, 2002.
9. Chlorides monthly average mass limit of 73 lb/day, Sulfates monthly average mass limit of 33 lb/day, and TDS monthly average mass limit of 635 lb/day, for the sum of Outfalls 002, 006, 007, were added based on TMDL dated October 3, 2002.

D. Toxics Pollutants

ADEQ has reviewed and evaluated the effluent in accordance with the potential toxicity of each analyzed pollutant using the procedures outlined in the Continuing Planning Process (CPP).

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality Standards (AWQS), Regulation No. 2 (Reg. 2.508) and criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)".

Under Federal Regulation 40 CFR Part 122.44(d), as adopted by Regulation No. 6, if a discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard, the permit must contain an effluent limitation for that pollutant. Effluent limitations for the toxicants listed below have been derived in a manner consistent with the Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA, March 1991), the CPP, and 40 CFR Part 122.45(c).

The following items were used in calculations. Outfall 007 is less than one mile upstream of Outfall 006. Therefore, the permit limits for Outfall 007 were used to calculate the background concentration used in the calculations for Outfall 006.

Parameter	Value	Source
Outfall 001 and Outfall 002		
Flow = Q (Outfall 001)	2.8 MGD = 4.33 cfs	DMR data
Flow = Q (Outfall 002)	0.75 MGD = 1.16 cfs	DMR data
7Q10 & LTA	0 cfs	U.S.G.S.
TSS	5.5 mg/l	CPP
Hardness as CaCo3	31 mg/l	CPP
pH	6.56 s.u.	OUA0027

The following pollutants were reported above the required maximum MQL or the MQL achieved during the testing process.

The metals data for Outfalls 001 and 002 were evaluated even though the metals were already limited in the permit. This is due to the change in the source of process water.

Outfall	Pollutant	Concentration Reported, µg/l	Required Max. MQL, µg/l
001	Total Recoverable Copper	12.2 ¹	0.5
001	Total Recoverable Selenium	ND ¹	5
001	Total Recoverable Zinc	59 ¹	20
002	Total Recoverable Copper	15.64 ²	0.5
002	Total Recoverable Lead	13.51 ²	0.5
002	Total Recoverable Selenium	1.21 ²	5
002	Total Recoverable Zinc	80.22 ²	20

¹ Highest test result of over 20 tests.

² Geometric mean of 8 test results.

Instream Waste Concentrations (IWCs) were calculated in the manner described in Appendix D of the CPP and compared to the applicable Criteria. The following tables summarize the results of the analysis. The complete evaluation can be viewed on the Department's website at the following address:

Outfall 001

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20001%20PPS%20Updated_20160620.pdf

Outfall 002

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20002%20PPS%20Updated_20160620.pdf

1. Aquatic Toxicity Evaluation

a. Acute Criteria Evaluation

Pollutant	Concentration Reported (C_e) $\mu\text{g/l}$	$C_e \times 2.13^1$	Instream Waste Concentration (IWC)	Criteria ²	Reasonable Potential (Yes/No)
			Acute, $\mu\text{g/l}$	Acute, $\mu\text{g/l}$	
OUTFALL 001					
Total Recoverable Copper	12.2	12.2 ³	12.2	14.79	NO
Total Recoverable Selenium	0	0 ³	0	20	NO
Total Recoverable Zinc	59	59 ³	59	130.87	NO
OUTFALL 002					
Total Recoverable Copper	15.64	33.31	33.31	14.79	YES
Total Recoverable Lead	13.51	28.78	28.78	87.29	NO
Total Recoverable Selenium	1.21	2.58	2.58	20	NO
Total Recoverable Zinc	80.22	170.87	170.87	130.87	YES

¹ Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.

² Criteria are from Reg. 2.508 unless otherwise specified.

³ Highest reported value of over 20 data points.

b. Chronic Criteria Evaluation

Pollutant	Concentration Reported (C_e) $\mu\text{g/l}$	$C_e \times 2.13^1$	Instream Waste Concentration (IWC)	Criteria ²	Reasonable Potential (Yes/No)
			Chronic, $\mu\text{g/l}$	Chronic, $\mu\text{g/l}$	
OUTFALL 001					
Total Recoverable Copper	12.2	12.2 ³	12.2	10.93	YES
Total Recoverable Selenium	0	0 ³	0	5	NO

Pollutant	Concentration Reported (C _e) µg/l	C _e x 2.13 ¹	Instream Waste Concentration (IWC)	Criteria ²	Reasonable Potential (Yes/No)
			Chronic, µg/l	Chronic, µg/l	
Total Recoverable Zinc	59	59 ³	59	119.50	NO
OUTFALL 002					
Total Recoverable Copper	15.64	33.31	33.31	10.93	YES
Total Recoverable Lead	13.51	28.78	28.78	3.40	YES
Total Recoverable Selenium	1.21	2.58	2.58	5	NO
Total Recoverable Zinc	80.22	170.87	170.87	119.50	YES

¹ Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.

² Criteria are from Reg. 2.508 unless otherwise specified.

³ Highest reported value of over 20 data points.

Since reasonable potential for Total Recoverable Copper is still demonstrated at Outfall 001, the limit from the previous permit will be continued unchanged. Monitoring and reporting requirements for Total Recoverable Zinc at Outfall 001 has been included in the permit at the direction of EPA Region VI due to the receiving stream's inclusion on the 2008 303(d) list for this parameter.

c. Human Health (Bioaccumulation) Limits

ADEQ has determined from the information submitted by the permittee that there is not a reasonable potential for the discharge to cause an instream excursion above the state numeric bioaccumulation standards as specified in Section 6(H) of the AWQS, Regulation No. 2.

d. ADEQ has determined from the submitted information that the discharge does not pose the reasonable potential to cause or contribute to an exceedance above a listed Criteria for some of the listed parameters. However, as can be seen in the tables above, the calculated IWCs for the pollutants in the following table were sufficiently higher than the referenced Arkansas Water Quality Criteria. Therefore, limits for those pollutants must be calculated in the manner described in Appendix D of the CPP and are included in the permit as follows:

Final Limits		
Substance	Monthly Average µg/l	Daily Maximum µg/l
OUTFALL 001		
Total Recoverable Copper	12.20	24.48
OUTFALL 002		
Total Recoverable Copper	12.20	24.48
Total Recoverable Lead	3.80	7.62
Total Recoverable Zinc	115.62	231.99

Outfalls 006 and 007

Since the permittee is required to demonstrate that the IWCs are lower than the water quality standards, PPS calculations for Outfalls 006 and 007 are not included in this Fact Sheet. The average monthly water quality standards listed in Part II.24 of the permit were calculated using the criteria in Reg. 2.508 as well as the ecoregion TSS and hardness values listed in Appendix D of the CPP. The calculations of the average monthly standards may be found in the PPS calculations for Outfall 001 and Outfall 002. The DML standards have been calculated in the following manner based on Appendix D, page D-38, of the CPP.

$$(AML/1.55) = (DML/3.11)$$

The permittee is only required to report the levels of Total Recoverable Copper in the effluent from Outfalls 006 and 007 since the PPS data submitted with the renewal application did not detect this parameter. Also, no data is available for which the EPA’s current requirements of a MQL of 0.5 µg/l and test method 200.8 were used. The Department reserves the right to reopen the permit if the Total Recoverable Copper levels are such that they negatively affect the water quality in the receiving stream.

Calculations demonstrate that RP does not exist for Total Recoverable Cadmium at Outfall 006 and that RP does exist for Total Recoverable Lead and Total Recoverable Zinc at Outfalls 006 and 007. These calculations may be found using the following link:

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_IWC%20Calculations_20170613.pdf

Outfall 010

Permit limits for the joint pipeline were calculated in the manner described in Appendix D of the CPP and are protective of the water quality of the receiving stream.

The mass limits were then calculated using the following formulas:

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

$$\text{Joint Pipeline Mass (lbs/day)} = 20 \text{ MGD (Inst. Max. Limit)} * \text{Concentration (mg/l)} * 8.34$$

$$\text{Qe as \% of Total Pipeline Flow (TPF)} = \text{Permitted Flow, 2 MGD} / 20 \text{ MGD}$$

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

The Joint Pipeline Mass limits were calculated for the issuance of NPDES Permit No. AR0050296. A copy of those calculations may be found as Attachment 2 of AR0050296 at the following link:

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/IssuedPermits/AR0050296_Final_20070228.pdf

Background concentrations for Outfall 010 were not used in the calculations. The closest upstream monitoring station for Outfall 010 is approximately 25 miles upstream. This distance is considered to be too great to accurately represent the background data for Outfall 010. This was affirmed by the Administrative Hearing Officer during the appeal of the modified permit issued on February 28, 2007, the circuit court, and the Arkansas Supreme Court.

The mass limits at Outfall 010 for this permittee are as follows:

Arkansas Numerical Aquatic Toxicity Limits		
Pollutant	AML, lbs/day	DML, lbs/day
Cadmium, Total Recoverable	0.22	0.45
Hexavalent Chromium, Dissolved	0.96	1.93
Copper, Total Recoverable	0.82	1.65
Lead, Total Recoverable	0.40	0.80

Arkansas Numerical Aquatic Toxicity Limits		
Pollutant	AML, lbs/day	DML, lbs/day
Nickel, Total Recoverable	14.23	28.55
Selenium, Total Recoverable	0.66	1.32
Silver, Total Recoverable	0.08	0.16
Zinc, Total Recoverable	7.35	14.75
Chromium (III), Total Recoverable	39.52	79.29
Cyanide, Total Recoverable	0.68	1.37

14. WHOLE EFFLUENT TOXICITY TESTING.

On July 25, 2016, the Department sent a draft renewal permit for this facility to EPA Region VI for their review and approval. This draft permit contained provisions to allow for Acute WET testing if the discharge from Outfall 001 was 5 days or less in duration. The draft permit also continued the Acute WET testing requirements for Outfalls 002, 006, and 007 from the current permit with limits added as necessary.

EPA Region VI disagreed with the inclusion of Acute WET testing requirements at any outfall due to the critical dilutions at each of the outfalls. EPA's reasoning stated that the Department's CPP allows for Acute WET testing only if the dilution ratio is greater than 100:1 and the 7Q10 of the receiving stream is greater than 100 cfs. These conditions are not met at Outfalls 001, 002, 006, and 007.

EPA's written explanation of this issue may be found using the following link:

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_EPA%20WET%20Review_20161020.pdf

EPA's inquiry related to Permit Appeal Resolution LIS 03-067 (PAR), which was issued to reflect the terms of a resolution of a permit appeal in 2002 that led to the current permit, Permit AR0000752, issued on April 30, 2004. In particular, the PAR required EDCC to undertake a background flow study, which ADEQ could use to reopen and modify the water quality based permit limits for the storm water outfalls, and the PAR further provided in Paragraph 1(g) that "Until such time as the permit is reopened and modified, the effluent limits for Outfall 004 contained in the 1990 Permit shall be applied to all storm water outfalls, and the toxicity testing requirements as stated in paragraph (h) below shall remain in effect for all storm water outfalls." The PAR further stated in Paragraph 1(f) that "The toxicity testing requirements for the storm water outfalls, Outfalls 002, 004, 005, 006 and 007 will be revised to provide for acute instead of chronic toxicity testing, and until such time as

the watershed analysis provided for in paragraph (f) above is completed and the permit modification resulting from such analysis is effective, the acute testing shall be a “monitor and report” requirement.”

Subsequent to the PAR, on April 30, 2004, ADEQ issued a NPDES Permit to implement the terms of the PAR. The 2004 Permit required acute, not chronic, biomonitoring, for Outfalls 002 (Pages 7 and 8 of Part IA), Outfall 004 (Pages 11 and 12 of Part IA), and Outfalls 005, 006 and 007 (Pages 13 and 14 of Part IA). The 2004 Permit stated on Page 1 of Part I.B. that “Until such time as the permit is reopened and modified, the effluent limits and toxicity testing requirements in this permit remain in effect.” As stated above, the toxicity testing requirements “in this permit” were acute toxicity testing for the storm water outfalls, Outfalls 002, 004, 005, 006 and 007. This was explained in the Fact Sheet as follows: “Because the discharges from Outfalls 002, 004, 005, 006 and 007 consist only of storm water (some of which may be contaminated) and are therefore not occurring on a regular basis, the Department has determined that acute biomonitoring requirements are appropriate.” ADEQ noted in the Fact Sheet that this change from chronic to acute biomonitoring testing for Outfalls 002, 004, 005, 006 and 007 was a “change from the previously issued permit.” On February 28, 2007 ADEQ modified the NPDES Permit to provide effluent limits applicable to discharge into the El Dorado Joint Pipeline at Outfall 010. The 2007 Permit also eliminated Outfalls 004 and 005 from the permit

During a meeting between EPA Region VI and Department personnel in Texarkana, AR on September 28, 2016, the Department expressed concerns about the allowable sample holding times expiring prior to completion of the tests. EPA cited Part II.9.3.d.v of the permit which states:

“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 have collected 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.”

EPA stated that exceedances of allowable holding times are approved by the above condition in the event of short term discharges.

Therefore, at the direction of EPA, the Department has included only chronic WET testing requirements in the permit for Outfalls 001, 002, 006, and 007. (Note: The Department did not propose Acute WET testing for Outfall 010.)

The Department has reviewed the locations of Outfalls 006 and 007 and the point at which the discharges commingle. Based on the close proximity, the Department has revised the WET testing requirements so that only one test covering both Outfalls 006 and 007 will be required. The WET test will be required to be conducted using flow weighted composite samples from each outfall. The combining of the effluent from two outfalls to conduct one WET test is already required by Part II.9.3.d.vi of the permit.

Chronic WET Test – Limits

Chronic WET limits (lethal) for *P. promelas* and *C. dubia* at Outfall 001 have been continued from the previous permit. Sub-lethal limits for both species have been added with this renewal.

A. Post Third Round Policy and Strategy

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....." To ensure that the CWA's prohibitions for toxics are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants (49 FR 9016-9019, 3/9/84)." In support of the national policy, Region 6 adopted the "Policy for Post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. 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.

The Regional policy and strategy are designed to ensure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State Water Quality Standard (WQS) resulting in non-conformance with the provisions of 40 CFR Part 122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

Whole effluent toxicity (WET) testing has been establishing for assessing and protecting against impacts upon water quality and designated use caused by the aggregate toxic effect of the discharge of pollutants. The stipulated test species, which are appropriate to measure whole effluent toxicity, are consistent with the requirements of the State Water Quality Standards. The WET testing frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

B. Implementation

Arkansas has established a narrative water quality standard under the authority of Section 303 of the CWA 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 toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to receiving stream or water body, at the appropriate instream critical dilution. Pursuant to 40 CFR 122.44(d)(1)(v), ADEQ has determined from the permittee's self reporting that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative standard within the applicable State Water Quality Standards, in violation of Section 101(a)(3) of the Clean Water Act. Therefore, the draft permit must establish both monthly average and 7-day minimum effluent limitations for lethality following Regulations promulgated by 40 CFR 122.44(d)(1)(v). These effluent limitations for lethality (7-day NOEC) are continued from the previous permit at Outfall 001. The daily average lethality (7-day NOEC) and 7-day minimum lethality (7-day NOEC) value shall not be less than 100% (Critical Dilution) effluent for Outfall 001.

WET testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The WET testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
Chronic WET Limit Outfall 001	Once/2 months

Since 7Q10 is less than 100 cfs (ft³/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit.

The calculations for dilution used for chronic WET testing are as follows

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

Outfall 001

$$Q_d = \text{flow} = 1.85 \text{ MGD} = 2.86 \text{ cfs}$$

$$7Q_{10} = 0 \text{ cfs}$$

$$Q_b = \text{Background flow} = (0.67) \times 7Q_{10} = 0 \text{ cfs}$$

$$CD = (2.86) / (2.86 + 0) \times 100\% = 100\%$$

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 are 32%, 45%, 56%, 80%, and 100% (Section 6.3 of the CPP). The low-flow effluent concentration (critical dilution) is defined as 100% effluent based on a 0 cfs 7Q10 flow of the receiving stream.

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/600/4-89/001 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

C. Administrative Records

The following information summarized toxicity test failures submitted by the permittee during the term of the current permit at Outfall 001.

Permit Number:	AR0000752	AFIN: 70-00040	Outfall Number:	001
Date of Review:	10/20/2016	Reviewer: M. Barnett		
Facility Name:	El Dorado Chemical Company			
Previous Dilution series:	32, 42, 56, 75, 100	Proposed Dilution Series:	32, 42, 56, 80, 100	
Previous Critical Dilution:	100	Proposed Critical Dilution:	100	
Previous TRE activities:	Sub-lethal study plan approved May 7, 2010. Final report received August 31, 2012.			

Frequency recommendation by species

<i>Pimephales promelas</i> (Fathead minnow):	once per two months
<i>Ceriodaphnia dubia</i> (water flea):	once per two months

TEST DATA SUMMARY

TEST DATE	Vertebrate		Invertebrate	
	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC
	1/31/2010	100	100	100
2/28/2010	100	100	100	100 *
3/31/2010	100	0	100	100
3/31/2010	100	100	100	100 UV 100%
4/30/2010	100	100	100	100
4/30/2010	100	100	*100	*100 UV 100%
5/31/2010	100	100	100	100
5/31/2010	100	100	100	100 UV 100%
6/30/2010	100	100	100	100
6/30/2010	100	100	100	100 UV 100%
9/30/2010	100	0	100	100
9/30/2010	100	0	100	100 UV 100%
11/30/2010	100	0	100	0
11/30/2010	100	100	100	0 UV 100%
12/31/2010	100	100	100	0
12/31/2010	100	100	100	0 UV 100%
1/31/2011	100	100	100	0
1/31/2011	100	100	100	0 UV 100%
2/28/2011	100	100	100	32
2/28/2011	100	100	100	0 UV 100%
3/31/2011	100	100	100	100
3/31/2011	100	100	100	100 UV 100%
5/30/2011	100	100	100	56
6/30/2011	100	100	100	100
6/30/2011	100	100	100	100 UV 100%
7/31/2011	100	100	100	100
7/31/2011	100	100	100	0 UV 100%
8/31/2011	100	100	100	0
8/31/2011	100	100	100	0 UV 100%
9/30/2011	100	100	100	32
9/30/2011	100	100	100	0 UV 100%
10/31/2011	100	100	100	56
11/30/2011	100	100	100	0
11/31/2011	100	100	100	0 UV 100%
12/31/2011	100	100	100	0
12/31/2011	100	100		UV 100%
1/31/2012	100	100	100	0
1/31/2012	100	100	100	0 UV 100%
2/29/2012	100	100	100	0
2/29/2012	100	100	100	0 UV 100%
3/31/2012	100	100	100	0
3/31/2012	100	100	100	0 UV 100%
4/30/2012	100	32	100	0
4/30/2012	100	0	100	0 UV 100%

5/31/2012	100	100	75	0
5/31/2012	100	100		UV 100%
6/30/2012	100	100	100	0
6/30/2012	100	100	100	0 UV 100%
7/31/2012	100	100	100	0
7/31/2012	100	100	100	0 UV 100%
9/30/2012	100	100	100	32
9/30/2012	100	100	100	0 UV 100%
10/31/2012	100	100	100	56
10/31/2012	100	100	100	0 UV 100%
11/30/2012	75	0	100	0
11/31/2012			100	0 UV 100%
12/31/2012	42	42	100	0
12/31/2012	100	100	100	0 UV 100%
1/31/2013	100	75	100	100
1/31/2013	100	100		UV 100%
2/28/2013	100	75	100	100
2/28/2013	100	100		UV 100%
3/31/2013	100	100	100	100
4/30/2013	100	100	100	100
5/31/2013	100	100	100	100
6/30/2013	75	0	100	42
7/31/2013	100	32	100	0
8/31/2013	100	100	100	75
11/30/2013	100	100	100	56

* Hardness adjustment

Failures noted in BOLD

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	42	31	75	1
TU at Min Observed	2.38	3.23	1.33	100.00
Count	68	68	65	65
Failure Count	3	12	1	43
Mean	1.030	1.322	1.005	3.826
Std. Dev.	0.176	0.761	0.041	12.160
CV	0.2	0.6	0	3.2
RPMF	1.1	1.4	0	2
Reasonable Potential	2.619	4.516	0.000	200.000
100/Critical dilution	1.000	1.000	1.000	1.000
Does Reasonable Potential Exist	Yes	Yes	No	Yes

PERMIT ACTION

P. promelas Chronic - limit 51714; lethality 100%; sub-lethality 80% - 3 year schedule of compliance for sub-lethality
C. dubia Chronic - limit 51710; lethality 100%; sub-lethality 80% - 3 year schedule of compliance for sub-lethality

Additional requirements (including WET Limits) rationale/comments concerning permitting:

Current lethal limits for *P. promelas* and *C. dubia* are required and appropriate.

Reasonable potential exists for *P. promelas* and *C. dubia* sub-lethality. Permit will include a 3 year compliance schedule for the *P. promelas* and *C. dubia* sub-lethal limits.

The permittee shall submit progress reports addressing the progress towards attaining the final effluent limits for *P. promelas* and *C. dubia* sub-lethality according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	One (1) year from effective date
Progress Report	Two (2) years from effective date
Achieve Final Limits	Three (3) years from effective date

Compliance with final limits for *P. promelas* and *C. dubia* sub-lethality limits is required three (3) years from the effective date of the permit.

The permittee has the option to undertake any study deemed necessary to meet the final limitations during the interim period. Any additional treatment must be approved and construction approval granted prior to final installation.

According to EPA Region 6 WET Permitting Strategy (May, 2005) due to the potential difficulty of resolving toxicity and/or identifying toxicants responsible for sub-lethal effects in effluent concentrations greater than 75% effluent, sub-lethal limits will be implemented at the 80% effluent level at this time.

Chronic WET Testing – Monitoring and Reporting

The permittee is only required to monitor and report the results of the chronic WET tests for *P. promelas* and *C. dubia* at Outfalls 002, 006, 007, 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 testing 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, and EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies, revised March 13, 2000. WET testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The WET testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
Outfall 002	Once/month
Outfall 104ST (Outfalls 006 and 007)	Once/two months
Outfall 010	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs (ft³/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit.

The calculations for dilution used for chronic WET testing are as follows:

Outfall 002

Since the 7Q10 of the receiving stream is 0 cfs, the critical dilution is 100%

Outfall 104ST (Outfalls 006 and 007)

In accordance with Part II, Condition 9.3.d.iv of the permit, the permittee shall combine the composite effluent samples in proportion to the 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.

The permittee is required to take instantaneous flow measurements at Outfall 006 and at Outfall 007 as well as for the stream flow. All three measurements must be taken within a 30 minute span.

The following formula shall be used to determine the critical dilution. The dilution series shall be determined by using the 0.75 dilution series.

$$\text{Critical dilution (CD)} = [(Q_{006} + Q_{007}) / (Q_{006} + Q_{007} + (Q_b * 0.67))] \times 100\%$$

Q_b = instantaneous background flow, cfs

Q_{006} = instantaneous effluent flow from Outfall 006

Q_{007} = instantaneous effluent flow from Outfall 007

Dilution Series Calculations

D_0 will be used only if the critical dilution is determined to be greater than 75%. If D_0 is used, D_5 will not be used.

$$D_0 = 0.75 * D_1$$

$$D_1 = 0.75 * D_2$$

$$D_2 = 0.75 * D_3$$

$$D_3 = 0.75 * CD$$

CD

$$D_5 = CD / 0.75$$

Outfall 010

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

$$Q_d = \text{Permitted flow} = 2 \text{ MGD} = 3.09 \text{ cfs}$$

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

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

$$CD = (3.09) / (3.09 + 187.5) \times 100\% = 1.6\%$$

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 are as follows:

Outfall	Dilution Series	Critical Dilution
002	32%, 42%, 56%, 75%, & 100%	100%
104ST	See calculations for Outfalls 006 and 007 listed above.	
010	0.7%, 0.9%, 1.2%, 1.6%, & 2.1%	1.6%

The requirement for chronic WET testing 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 WET testing 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 WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing 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

The following information summarized toxicity test submitted by the permittee during the term of the current permit at Outfalls 002, 006, 007, and 010.

Permit Number:	AR0000752	AFIN:	70-00040	Outfall Number:	002
Date of Review:	10/20/2016	Reviewer:	M. Barnett		
Facility Name:	El Dorado Chemical Company				
Previous Acute Dilution series:	32, 42, 56, 75, 100				
Previous Acute Critical Dilution:	100				
Proposed Chronic Dilution Series:	32, 42, 56, 75, 100				
Proposed Chronic Critical Dilution:	100				
Previous TRE activities:	None				
Frequency recommendation by species					
<i>Pimephales promelas</i> (Fathead minnow):	once per month				
<i>Ceriodaphnia dubia</i> (water flea):	once per month				
TEST DATA SUMMARY					
	Vertebrate		Invertebrate		
TEST DATE	Lethal NOEC		Lethal NOEC		
Jan-10	100		100		
Dec-11	100		0		
Mar-12	100		75		
Sep-12	100		100		
Jun-13	100		32		
Oct-13	0		0		
Nov-13	100		100		
Dec-13	100		0		
Jul-14	100		100		
Failures are noted in BOLD					
REASONABLE POTENTIAL CALCULATIONS					
	Vertebrate Lethal		Invertebrate Lethal		
Min NOEC Observed	31		31		
TU at Min Observed	3.23		3.23		
Count	4		4		
Failure Count	1		5		
Mean	1.556		2.113		
Std. Dev.	1.113		1.285		
CV	0.6		0.6		
RPMF	2.6		2.6		
Reasonable Potential	8.387		8.387		
100/Critical dilution	1.000		1.000		
Does Reasonable Potential Exist	Yes		Yes		
PERMIT ACTION					
<i>P. promelas</i> Chronic - Monitoring					
<i>C. dubia</i> Chronic -Monitoring					

Additional requirements (including WET Limits) rationale/comments concerning permitting:
 Chronic testing is required instead of Acute testing as per October 2016 documentation from EPA Region 6.

Permit Number:	AR0000752	AFIN: 70-00040	Outfall Number:	006	
Date of Review:	10/20/2016	Reviewer: M. Barnett			
Facility Name:	El Dorado Chemical Company				
Previous Acute Dilution series for Outfall 006:	32, 42, 56, 75, 100				
Previous Acute Critical Dilution for Outfall 006:	100				
Proposed Chronic Dilution Series for Combined 006 & 007 WET test:	Dependent on measured stream flow and measured effluent flow				
Proposed Chronic Critical Dilution for Combined 006 & 007 WET test:	Dependent on measured stream flow and measured effluent flow				
Previous TRE activities:	TRE Plan was received on December 22, 2010. Final TRE report received January 24, 2013				
Frequency recommendation by species					
<i>Pimephales promelas</i> (Fathead minnow):	once per two months				
<i>Ceriodaphnia dubia</i> (water flea):	once per two months				
TEST DATA SUMMARY					
TEST DATE	Vertebrate		Invertebrate		
	Lethal	NOEC	Lethal	NOEC	
10/31/2011		100		100	*
11/30/2011		32		0	*
12/31/2011		100		22	*
1/31/2012		100		100	*
2/29/2012		100		75	*
3/31/2012		100		100	*
4/30/2012		100		100	*
6/30/2012		75		0	*
7/31/2012		100		100	*
8/31/2012		75		75	*
9/30/2012		100		100	*
10/31/2012		100		100	*
11/30/2012		0		0	*
12/31/2012		100		100	*
1/31/2013		100		100	*
2/28/2013		100		100	*
3/31/2013		100		100	*
4/30/2013		100		100	*
5/30/2013		0		0	*
6/30/2013		100		100	*
7/31/2013		100		100	*
9/30/2013		100		100	*
10/31/2013		100		100	*
11/30/2013		100		100	*
12/31/2013		22		100	*
1/31/2014		100		100	*
2/28/2014		100		100	*
4/30/2014		100		100	*
5/31/2014		100		100	*
6/30/2014		100		100	*
7/31/2014		100		56	*

8/30/2014	100		100	*
9/30/2014	0		0	*
10/31/2014	100		100	*
11/30/2014	100		100	*
12/31/2014	100		100	*
1/31/2015	100		75	*
2/28/2015	100		100	*
3/31/2015	100		100	*
4/30/2015	100		100	*
5/31/2015	100		75	*
6/30/2015	100		100	*
7/31/2015	100		0	*
10/31/2015	100		100	*
11/30/2015	100		75	*
1/31/2016	100		100	*
2/29/2016	100		100	*
3/31/2016	100		100	
4/3/2016	100		100	*
5/31/2016	100		100	*
6/30/2016	100		100	*
7/28/2016	100		100	*
8/18/2016	100		100	
9/23/2016	100		100	*

Failures are noted in BOLD

* Dilution series included a 22% dilution

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Invertebrate Lethal
Min NOEC Observed	100	100
TU at Min Observed	1.00	1.00
Count	53	53
Failure Count at 100%	7	13
Failure Count at 22%	3	6
Mean	1.333	1.539
Std. Dev.	1.018	1.265
CV	0.8	0.8
RPMF	1.5	1.5
Does Reasonable Potential Exist	No	No

PERMIT ACTION

P. promelas Chronic - monitoring
C. dubia Chronic - monitoring

Additional requirements (including WET Limits) rationale/comments concerning permitting:

Effluent from Outfall 006 and 007 will be combined as a flow weighted composite and the critical dilution will depend on the measured receiving stream flow and the measured effluent flow based on the results of a flow study conducted by EDCC in 2006 and 2007.

Chronic testing is required instead of Acute testing as per October 2016 documentation from EPA Region 6.

Permit Number:	AR0000752	AFIN:	70-00040	Outfall Number:	007
Date of Review:	10/20/2016	Reviewer:	M. Barnett		
Facility Name:	El Dorado Chemical Company				
Previous Acute Dilution series for Outfall 007:	32, 42, 56, 75, 100				
Previous Acute Critical Dilution for Outfall 007:	100				
Proposed Chronic Dilution Series for Combined 006 & 007 WET test:	Dependent on measured stream flow and measured effluent flow				
Proposed Chronic Critical Dilution for Combined 006 & 007 WET test:	Dependent on measured stream flow and measured effluent flow				
Previous TRE activities:	TRE Plan was received on December 22, 2010. Final TRE report recieved January 24, 2013				
Frequency recommendation by species					
<i>Pimephales promelas</i> (Fathead minnow):	once per two months				
<i>Ceriodaphnia dubia</i> (water flea):	once per two months				

TEST DATA SUMMARY

TEST DATE	Vertebrate (<i>Pimephales promelas</i>)		Invertebrate (<i>Daphnia pulex</i>)	
	Lethal NOEC		Lethal NOEC	
9/30/2011	0		0	
10/31/2011	100		75	*
11/30/2011	0		0	*
12/30/2011	100		0	*
1/31/2012	56		42	*
2/29/2012	56		56	*
3/31/2012	100		100	*
4/30/2012	75		32	*
6/30/2012	100		0	*
7/31/2012	0		0	*
8/31/2012	75		0	*
8/31/2012	75		75	*
9/30/2012	50		56	*
10/31/2012	0		0	*
11/30/2012	0		0	*
12/31/2012	0		0	*
1/31/2013	32		0	*
2/28/2013	100		100	*
3/31/2013	56		50	*
4/30/2013	32		0	*
5/30/2013	0		0	*
6/30/2013	0		42	*
7/31/2013	75		42	*
9/30/2013	56		56	*
10/31/2013	75		75	*
11/30/2013	100		100	*
12/31/2013	0		0	*
1/31/2014	32		0	*
2/28/2014	0		0	*
4/30/2014	0		0	*
5/31/2014	100		100	*
6/30/2014	100		100	*
7/31/2014	0		0	*
8/31/2014	0		0	*
9/30/2014	100		100	*
10/31/2014	100		100	*
11/30/2014	56		32	*
12/31/2014	56		32	*

1/31/2015	100		45	*
2/28/2015	56		50	*
3/31/2015	32		0	*
4/30/2015	100		100	*
5/31/2015	100		100	*
6/30/2015	0		0	*
7/31/2015	100		100	*
10/31/2015	100		100	*
11/30/2015	100		0	*
12/31/2015	100		100	*
1/31/2016	100		100	*
2/29/2016	100		100	*
3/31/2016	100		100	*
4/30/2016	100		100	*
5/31/2016	100		100	*
6/30/2016	75		32	*
7/31/2016	0		0	*
8/31/2016	100		100	*

Failures are noted in BOLD

* Dilution series included a 50% dilution

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Invertebrate Lethal	
Min NOEC Observed	31	31	
TU at Min Observed	3.23	3.23	
Count	56	56	
Failure Count at CD 100%	33	38	
Failure Count at CD 50%	19	30	
Mean	1.900	2.218	
Std. Dev.	0.982	1.004	
CV	0.5	0.5	
RPMF	1.3	1.3	
Reasonable Potential	0.377	0.377	
100/Critical dilution	11.111	11.111	
Does Reasonable Potential Exist	No	No	

PERMIT ACTION

P. promelas Chronic - monitoring
C. dubia Chronic - monitoring

Additional requirements (including WET Limits) rationale/comments concerning permitting:

Effluent from Outfall 006 and 007 will be combined as a flow weighted composite and the critical dilution will depend on the measured receiving stream flow and the measured effluent flow based on the results of a flow study conducted by EDCC in 2006 and 2007.

Chronic testing is required instead of Acute testing as per October 2016 documentation from EPA Region 6.

Permit Number:	AR0000752	AFIN: 70-00040	Outfall Number:	010
Date of Review:	10/20/2016	Reviewer: M. Barnett		
Facility Name:	El Dorado Chemical Company			
Previous Dilution series:	0.7, 0.9, 1.2, 1.6, 2.1	Proposed Dilution Series:	0.7, 0.9, 1.2, 1.6, 2.1	
Previous Critical Dilution:	1.6	Proposed Critical Dilution:	1.6	
Previous TRE activities:	None			

Frequency recommendation by species

<i>Pimephales promelas</i> (Fathead minnow):	once per quarter
<i>Ceriodaphnia dubia</i> (water flea):	once per quarter

TEST DATA SUMMARY

TEST DATE	Vertebrate		Invertebrate	
	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC
9/30/2013	2.1	2.1	2.1	2.1
12/31/2013	2.1	2.1	2.1	2.1
3/31/2014	2.1	2.1	2.1	2.1
9/30/2014	2.1	2.1	2.1	2.1
12/31/2014	2.1	2.1	2.1	2.1
3/31/2015	2.1	2.1	2.1	2.1
6/30/2015	2.1	2.1	2.1	2.1
9/30/2015	2.1	2.1	2.1	2.1
12/31/2015	2.1	2.1	2.1	2.1
3/31/2016	2.1	2.1	2.1	2.1
6/30/2016	2.1	2.1	2.1	2.1

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	2.1	2.1	2.1	2.1
TU at Min Observed	47.62	47.62	47.62	47.62
Count	11	11	11	11
Failure Count	0	0	0	0
Mean	47.619	47.619	47.619	47.619
Std. Dev.	0.000	0.000	0.000	0.000
CV	0	0	0	0
RPMF	0	0	0	0
Reasonable Potential	0.000	0.000	0.000	0.000
100/Critical dilution	62.500	62.500	62.500	62.500
Does Reasonable Potential Exist	No	No	No	No

PERMIT ACTION

P. promelas Chronic - monitoring
C. dubia Chronic - monitoring

15. SAMPLE TYPE AND FREQUENCY.

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

Monitoring frequencies and sample types have been based on the modified NPDES permit. The frequency and sample types for new parameters have been based on similar parameters already in the permit.

The sample frequency for Total Recoverable Zinc at Outfall 001 has been reduced to once per quarter. Reasonable potential for water quality violations due to the levels of Zinc in the effluent from Outfall 001 no longer exists due to the use of a different water source (Outfall 001). Monitoring and reporting requirements for Total Recoverable Zinc have been included in the permit at the direction of EPA Region VI due to the receiving stream's inclusion on the 2008 303(d) list for this parameter.

The sample frequency for NH₃-N at Outfall 003 has changed from once per quarter to twice per seven months for the months of April through October and twice per five months for the months of November through March due to the seasons for the toxicity based limits. The overall frequency of four per year is remaining unchanged.

The sample type for Copper and Zinc at Outfall 003 have been based upon the requirements for those parameters at other outfalls since these are considered to be toxics. The monitoring frequency for Copper and Zinc is based upon the type of effluent and monitoring frequency for other parameters at this outfall.

The sample type and frequency for minerals at Outfall 003 are based on the sample type of other parameters at this outfall.

The sample frequency for Total Recoverable Zinc at Outfalls 006 and 007 has been reduced to once per quarter based on the data submitted during the term of the previous permit.

The effluent flow sample types at Outfalls 006 and 007 have been changed to instantaneous since the permittee has Parshall flumes at both outfalls.

The monitoring frequencies for the SUM Total Outfalls are based on the frequencies contained at the individual outfalls. The sample types, with the exception of WET testing at Outfall 104ST, have been set as calculated because the samples are taken at the individual outfalls and the results totaled for comparison with the limit at the applicable SUM TOTAL OUTFALL. The sample type for WET testing at Outfall 104ST is 24-composite because the effluent from Outfalls 006 and 007 will be composited for the WET test.

The monitoring frequencies for FCB, NH₃-N, and DO at Outfall 010 have been reduced to three times per week as allowed under Condition No. 4 of Part II of the permit. The permittee submitted effluent data demonstrating 365 consecutive days of compliance with those limits. See the response to Comment 9 of the Response to Comments for additional information.

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
OUTFALL 001				
Flow	continuous	record	continuous	record
TSS	3/week	24-hr composite	3/week	24-hr composite
NH ₃ -N				
(April – October)	3/week	24-hr composite	3/week	24-hr composite
(November – March)	3/week	24-hr composite	3/week	24-hr composite
Nitrates as N	3/week	24-hr composite	3/week	24-hr composite
Dissolved Oxygen				
(May – October)	3/week	grab	3/week	grab
(November – April)	3/week	grab	3/week	grab
Total Recoverable Copper	1/month	24-hr composite	1/month	24-hr composite
Total Recoverable Zinc	1/month	24-hr composite	1/quarter	24-hr composite
Chlorides	1/month	24-hr composite	1/month	24-hr composite
Sulfates	1/month	24-hr composite	1/month	24-hr composite
TDS	1/month	24-hr composite	1/month	24-hr composite
pH	continuous	grab	continuous	grab
Chronic Lethal WET Limit	1/month	24-hr composite	1/2 months	24-hr composite
Chronic Sub-Lethal WET Limit	N/A	N/A	1/2 months	24-hr composite
OUTFALL 002				
Flow	1/day	estimate	1/day	estimate
TSS	1/day	grab	1/day	grab

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
NH3-N				
(April – October)	1/day	grab	1/day	grab
(November – March)	1/day	grab	1/day	grab
Nitrates as N	1/day	grab	1/day	grab
O & G	1/day	grab	1/day	grab
Total Recoverable Copper	1/month	24-hr composite	1/month	24-hr composite
Total Recoverable Lead	1/month	24-hr composite	1/month	24-hr composite
Total Recoverable Zinc	1/month	24-hr composite	1/month	24-hr composite
Chlorides	N/A	N/A	1/month	grab
Sulfates	1/month	grab	1/month	grab
TDS	1/month	grab	1/month	grab
pH	1/day	grab	1/day	grab
Chronic WET testing	1/month ²	24-hr composite ²	1/month	24-hr composite
OUTFALL 003				
Flow	1/day	estimate	1/day	estimate
CBOD5	1/quarter	grab	1/quarter	grab
TSS	1/quarter	grab	1/quarter	grab
NH3-N				
(April – October)	1/quarter	grab	2/7 months ¹	grab
(November – March)	1/quarter	grab	2/5 months ¹	grab
Dissolved Oxygen				
(May – October)	N/A	N/A	1/quarter	grab
(November – April)	N/A	N/A	1/quarter	grab
FCB	1/quarter	grab	1/quarter	grab
Total Recoverable Copper	N/A	N/A	1/quarter	24-hr composite
Total Recoverable Zinc	N/A	N/A	1/quarter	24-hr composite

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Chlorides	N/A	N/A	1/quarter	grab
Sulfates	N/A	N/A	1/quarter	grab
TDS	N/A	N/A	1/quarter	grab
pH	1/week	grab	1/week	grab
OUTFALL 006				
Flow	1/day	estimate	1/day	instantaneous
Stream Flow	N/A	N/A	1/day	instantaneous
Total Suspended Solids (TSS)	1/week	grab	1/week	grab
Ammonia-Nitrogen (NH3-N)	1/week	grab	1/week	grab
Total Recoverable Copper	N/A	N/A	1/quarter	24-hr composite
Total Recoverable Lead	1/month	24-hr composite	1/month	24-hr composite
Total Recoverable Zinc	1/month	24-hr composite	1/quarter	24-hr composite
Chlorides	N/A	N/A	1/month	grab
Sulfates	N/A	N/A	1/month	grab
Total Dissolved Solids	1/month	grab	1/month	grab
Oil and Grease (O & G)	1/week	grab	1/week	grab
pH	1/day	grab	1/day	grab
OUTFALL 007				
Flow	1/day	estimate	1/day	instantaneous
Stream Flow	N/A	N/A	1/day	instantaneous
Total Suspended Solids (TSS)	1/week	grab	1/week	grab
Ammonia-Nitrogen (NH3-N)	1/week	grab	1/week	grab
Total Recoverable Copper	N/A	N/A	1/quarter	24-hr composite
Total Recoverable Lead	1/month	24-hr composite	1/month	24-hr composite
Total Recoverable Zinc	1/month	24-hr composite	1/quarter	24-hr composite
Chlorides	N/A	N/A	1/month	grab

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Sulfates	N/A	N/A	1/month	grab
Total Dissolved Solids	1/month	grab	1/month	grab
Oil and Grease (O & G)	1/week	grab	1/week	grab
pH	1/day	grab	1/day	grab
OUTFALL 010				
Flow	continuous	record	1/day	totalizing meter
CBOD5				
(May – October)	1/day	24-hr composite	1/day	24-hr composite
(November – April)	1/day	24-hr composite	1/day	24-hr composite
TSS	1/day	24-hr composite	1/day	24-hr composite
NH3-N	1/day	24-hr composite	3/week	24-hr composite
Nitrate Nitrogen as N	3/week	24-hr composite	3/week	24-hr composite
Oil and Grease (O & G)	2/week	grab	2/week	grab
Dissolved Oxygen (DO)	1/day	grab	3/week	grab
Total Dissolved Solids (TDS)	2/week	grab	2/week	grab
Sulfates	2/week	grab	2/week	grab
Chlorides	2/week	grab	2/week	grab
Mercury, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Cadmium, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Hexavalent Chromium, Dissolved	1/month	24-hr composite	1/month	24-hr composite
Copper, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Lead, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Nickel, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Selenium, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Silver, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Zinc, Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Chromium (III), Total Recoverable	1/month	24-hr composite	1/month	24-hr composite
Cyanide, Total Recoverable	1/month	grab	1/month	grab
Total Phosphorous	1/day	24-hr composite	1/day	24-hr composite
Fecal Coliform Bacteria (FCB)	1/day	grab	3/week	grab
pH	1/day	grab	1/day	grab
Chronic WET Testing	1/quarter	24-hr composite	1/quarter	24-hr composite
OUTFALL 101ST - SUM TOTAL OUTFALL FOR OUTFALLS 001 AND 002 (Technology Based)				
Nitrates as N	1/day	calculated	1/day	calculated
OUTFALL 102ST - SUM TOTAL OUTFALL FOR OUTFALLS 001 AND 003				
NH3-N	N/A	N/A	1/week	calculated
Chlorides	N/A	N/A	1/week	calculated
Sulfates	N/A	N/A	1/week	calculated
Total Dissolved Solids	N/A	N/A	1/week	calculated
OUTFALL 103ST - SUM TOTAL OUTFALL FOR OUTFALLS 002, 006, AND 007				
NH3-N	N/A	N/A	1/week	calculated
Chlorides	N/A	N/A	1/month	calculated
Sulfates	N/A	N/A	1/month	calculated
Total Dissolved Solids	N/A	N/A	1/month	calculated
OUTFALL 104ST - SUM TOTAL OUTFALL FOR OUTFALLS 006 AND 007				
Total Recoverable Lead IWC < WQS (1114I)	N/A	N/A	1/month	calculated
Total Recoverable Zinc IWC < WQS (1094I)	N/A	N/A	1/quarter	calculated
Chronic WET Testing	N/A ²	N/A ²	1/2 months	24-hr composite

¹ NH3-N samples at Outfall 003 shall be taken during the months of April – July, August – October, November – December, and January – March.

² Previous permit contained Acute WET testing requirements.

16. PERMIT COMPLIANCE.

Compliance with final effluent limitations is required by the effective date of the permit with the following exceptions: Compliance with the Final Effluent Limitations for DO during the months May through October at Outfall 003, NH₃-N, Chlorides, Sulfates, and TDS at Outfalls 001, 002, 003, 006, 007, 102ST, and 103ST is required three years after the effective date of the permit. Compliance with the *P. promelas* and *C. dubia* sub-lethal limits at Outfall 001 is also required three years after the effective date of the permit.

These are new water quality based limits for the permittee. The permittee has demonstrated, based on data submitted during the term of the previous permit, that time is needed to come into compliance with the new NH₃-N and mineral limits. Therefore, a three year schedule of compliance for these limits has been included in the permit as allowed under Reg. 2.104.

Minimum required DO levels have not been included in previous permits at Outfall 003. While the permittee should be able to meet a minimum DO of 2.0 mg/l in the effluent, it is unknown if they can meet the minimum DO of 4.0 mg/l for the months of May through October. Therefore, a three-year schedule of compliance for the minimum required DO for the months of May through October has been included in the permit as allowed under Reg. 2.104.

The permittee is required to have the necessary stream flow monitoring equipment installed downstream of Outfalls 006 and 007 within six (6) months of the effective date of the permit. This equipment is necessary to obtain the stream flows which will be used in the calculation of the IWC for Total Recoverable Lead and Total Recoverable Zinc. The limits requiring the IWC to be less than or equal to the applicable WQS are in the permit at Outfall 104ST – SUM TOTAL Outfall for Outfalls 006 and 007. The interim requirements for Total Recoverable Lead and Zinc at these outfalls will be in the interim tables for the individual outfalls in Part IA of the permit.

17. 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.

18. SOURCES.

The following sources were used to draft the permit:

- A. NPDES application No. AR0000752 received December 21, 2006, with all additional information received by December 2, 2016.
- B. Arkansas Water Quality Management Plan (WQMP).
- C. APCEC Regulation No. 2.

- D. APCEC Regulation No. 3.
- E. APCEC Regulation No. 6.
- F. 40 CFR Parts 122, 125, and 418.
- G. NPDES permit file AR0000752.
- H. Discharge Monitoring Reports (DMRs).
- I. "Arkansas Water Quality Inventory Report 2008 (305(b))", ADEQ.
- J. Memo from Mo Shafii to NPDES Engineers dated March 28, 2005.
- K. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.
- L. Continuing Planning Process (CPP).
- M. Technical Support Document For Water Quality-based Toxic Control.
- N. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR Part 131.36.
- O. [Inspection Report](#) dated March 9, 2015.
- P. Site visits March 2005 and September 19, 2007.
- Q. [Watershed Analysis Report](#) dated March 13, 2003.
- R. [Stormwater Flow Study](#) dated September 21, 2006.
- S. [Letter from Greg Withrow](#) to Loretta Reiber, P.E. dated June 20, 2008.
- T. [Letter from Loretta Reiber, P.E.](#) to Greg Withrow dated June 26, 2008.
- U. APCEC Docket No. 07-006-P.
- V. E-mail from Greg Withrow to Loretta Reiber, P.E. dated September 18, 2008.
- W. Telephone conversation between Greg Withrow and Loretta Reiber, P.E. on September 15, 2009 regarding the handling of solids at Outfalls 001, 002, and 003.
- X. Judgment of the Court upholding the APCEC's ruling issued on March 31, 2009, issued by the Honorable David Guthrie of the 13th Judicial District.
- Y. State Supreme Court decision issued October 07, 2010.
- Z. Meeting at ADEQ with permittee on December 1, 2010.
- AA. [Temperature study](#) dated October 29, 2005.
- BB. [ADEQ letter](#) approving temperature study dated January 5, 2007.
- CC. [E-mail from Mike Tillman](#) of EPA Region VI to John Bailey, P.E. dated April 2, 2013.
- DD. Letter from Claudia V. Hosch of EPA Region VI to Mo Shafii dated April 23, 2013.
- EE. Letter from EPA to Mo Shafii dated August 20, 2013 clarifying implementation of TMDLs.
- FF. [Letter from EPA](#) to Ryan Benefield, P.E. dated September 23, 2013, containing a General Objection to Draft Permit.
- GG. [Letter from EPA](#) to Mo Shafii dated February 13, 2014, withdrawing the General Objection to the Draft Permit.
- HH. [TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas.](#)
- II. E-mail from Silvia Bogdan regarding Chronic WET testing at Outfalls 001, 002, 006, and 007 dated September 9, 2016.
- JJ. Letter of no objection from EPA Region VI dated January 26, 2017.

19. NPDES POINT OF CONTACT.

For additional information, contact:

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**RESPONSE TO COMMENTS
FINAL PERMITTING DECISION**

Permit No.: AR0000752
Applicant: El Dorado Chemical Company
Prepared by: Loretta Reiber, P.E.

The following are responses to comments received regarding the draft permit number above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17 as incorporated in APCEC Regulation 6.104(A)(5), APC&EC Regulation No. 8 Administrative Procedures, and A.C.A. §8-4-203(e)(2).

Introduction

The above permit was submitted for public comment on February 8, 2017. The public comment period ended on March 10, 2017. The Arkansas Department of Environmental Quality (hereinafter “ADEQ”) only received comments from the permittee during the public comment period. The ADEQ received comments from the Arkansas Game and Fish Commission after the close of the public comment period. ADEQ has made one change to the permit that was not based upon a comment.

This document contains a summary of the comments that the ADEQ received during the public comment period. A summary of the changes to the NPDES Permit can be found on the last page of this document. There were several similar issues raised throughout the comments; those are grouped together, with one response from the ADEQ.

Comment 1: Domestic wastewater needs to be added as a source for Outfalls 001, 002, 010, and 101ST. Treated groundwater should be added as a source for Outfall 002. These sources are listed on the updated EPA Form 2C.

Response 1: The updated EPA Form 2C submitted on June 15, 2016, has been reviewed. The sources are listed on the form and will therefore be added to the permit.

Comment 2: The footnote references for pH should reference footnote 4 instead of footnote 5.

Response 2: The correction has been made.

Comment 3: The TSS mass limits for Outfall 001 in the Final Effluent Limitations table in Part IA should be 700.6 lbs/day on a monthly average and 1050.8 lbs/day on a daily maximum to match the Interim Effluent Limitations.

Response 3: The correction has been made.

Comment 4: Final ammonia and dissolved minerals concentrations are proposed in the draft permit. It appears those effluent limitations are derived from the mass limitations in the TMDL. There is no regulatory or environmental purpose for concentration limits since the TMDL limitations are being implemented at the sum total outfalls. The permittee requested that the concentration limits be removed from the permit.

Response 4: *TMDLs for Chloride, Sulfate, TDS, and Ammonia in the ELCC Tributary, Arkansas* (the *TMDL*) assigned EDCC WLAs for NH₃-N, Chlorides, Sulfates, and TDS. The NH₃-N and dissolved minerals concentration limits are those which were used by the TMDL to calculate the mass limits. 40 CFR 122.44(d)(1)(vii)(B) states that when developing water quality-based effluent limits under this paragraph, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available WLA for the discharge.

Sections 4.1.4 and 4.2.4 of the *TMDL* states that the mineral and ammonia WLAs were determined using the existing water quality standards and the allowable ammonia concentrations as limited by toxicity, respectively, and the mean annual discharge flows.

Additionally, 40 CFR 122.45(f)(2) allows for pollutants limited in terms of mass to be limited in terms of other units of measurement.

Several portions of the *TMDL* reference that the El Dorado Tributary was placed on the 303(d) list in 1998 since it was not meeting several designated uses as determined by the concentrations of minerals and ammonia in the tributary. The concentrations will help to ensure that the water quality in the receiving stream is met on days when the discharges are lower in volume.

Comment 5: The draft permit contains chronic WET testing requirements for Outfalls 002, 006, and 007. Discharges from Outfall 002 are infrequent (once in the last three years) and typically are less than one day in duration due to the installation of a secondary transfer system to Lake Kildeer (Outfall 001). Discharges from Outfalls 006 and 007 only occur in response to rain events and are typically less than 2 days in duration.

Therefore, it is inappropriate to require chronic WET testing for these outfalls. Not only does the 7 day chronic test not represent discharge conditions due to shorter discharge durations but it is not technically feasible to perform a 7 day chronic WET test due to holding times of effluent samples for renewals required by the testing protocols.

USEPA WET testing guidance and methods clearly state that if holding times for toxicity testing are not met the test is invalid. The provision contained in Part II.9.3.d.v of the draft permit which waives holding times for chronic WET testing is not valid according to EPA guidance and

methodology and should be removed from the final permit along with the requirement to perform chronic WET testing at these outfalls.

Response 5: EPA Region 6 has made a clear determination on this issue; no revisions will be made regarding chronic WET testing at Outfalls 002, 006, and 007.

9/9/2016 e-mail "... outfalls 001 and 002 have process wastewater along with other sources. Both have a CD of 100% and this means chronic testing is the requirement per ADEQ's CPP and EPA guidance. Same with outfalls 006 and 007. EPA guidance and ADEQ (CPP) have determined that it is the strength (or dilution) of an effluent at the edge of the mixing zone that determines the type of exposure the organisms will encounter and the testing requirement. The duration of a discharge or type of discharge is not taken into account in any guidance document or in the calculation of a critical dilution."

9/14/16 e-mail "While stormwater discharges from outfall 006 and outfall 007 are intermittent discharges of short duration, they occur at critical dilutions that EPA and ADEQ (Arkansas's Continuing Planning Process, Appendix D, Part III.A) have determined will be tested for chronic toxicity. The use of chronic versus acute WET testing is not based on the duration of the instream exposure of aquatic life to effluent flow, rather it depends on the dilution of the effluent that the aquatic life would encounter at the edge of the mixing zone. In this case, the conditions in the receiving stream at the edge of the mixing zone are 22% critical dilution for outfall 006 and 50% for outfall 007."

10/20/16 e-mail attachment "In the case that a discharge has a short duration, the permit (Part II.11.2.d.iv) indicates that the minimum number of effluent samples for the chronic test and the holding time is waived. The permittee must collect sufficient sample volume to complete the required test with daily renewal. This ensures a chronic test can be completed by the permittee even when discharges are of short duration."

"The previous permit established acute 48hr WET testing requirements and data from the last permit cycle for outfall 006 indicates there were 49 acute tests conducted with *P. prom*, in which 9 tests failed (2 failed at the new proposed critical dilution) . There were 49 acute tests conducted with *D. pulex*, in which 15 tests failed (6 failed at the new proposed critical dilution). No limits are proposed for outfall 006, even though according to the 2000 CPP, Appendix D, Part III.F, the demonstration of significant toxic effects in two toxicity tests demonstrates reasonable potential for WET. Therefore, limits are warranted. Acute testing requirements may remain in this permit, with a limit for both *D. pulex* and *P. prom*, but chronic biomonitoring must be a requirement for this outfall, using *C. dubia* and *P. promelas*.

Data from outfall 007 indicates there were 55 acute tests conducted with *P. prom*, in which 36 tests failed (23 failed at the new proposed critical dilution). There were 55 acute tests conducted with *D. pulex*, in which 40 tests failed (32 failed at the new proposed critical dilution). Acute testing requirements may remain in this permit, with a limit for both *D. pulex*

and *P. prom* as proposed in the permit, but chronic biomonitoring must be a requirement for this outfall, using *C. dubia* and *P. promelas*.”

The Department has reviewed the locations of the two outfalls and the point at which the discharges commingle. Based on the close proximity, the Department has revised the WET testing requirements so that only one test will be required. The WET test will be required to be conducted using flow weighted composite samples from each outfall. The combining of the effluent from two outfalls to conduct one WET test is already required by Part II.9.3.d.vi of the permit.

Measurement of the background flow will be required in order to determine the proper critical dilution for the WET test.

Comment 6: The footnote associated with the TSS benchmark condition needs to be added to the final limits page for Outfall 002 in order to be consistent with the interim limits page.

Response 6: The correction has been made.

Comment 7: The monitoring frequency for Chlorides, Sulfates, and TDS should be once/quarter at Outfall 003 in order to be consistent with the other parameters for this outfall, i.e., NH₃-N which is based on the TMDL and is sampled four times per year.

Response 7: The monitoring frequencies for Chlorides, Sulfates, and TDS at Outfall 003 have been set at once per month since no information is available regarding the levels of dissolved minerals in the effluent from this outfall.

Compliance with the final limits for Chlorides, Sulfates, and TDS is required no later than three years from the effective date of the permit. It is important to have sufficient information in order to be able to take actions if necessary prior to the final effluent limits becoming effective. Therefore, the requirement for monthly monitoring will remain in the permit for the interim period of three years.

The final permit will require that minerals be monitored at a frequency of once per month for the first three years of the permit. After that date, which is the date of compliance for the final limits, the monitoring frequency will be reduced to once per quarter.

Comment 8: Including both stream flow and stream flow to effluent flow ratio as permit limits for Outfalls 006 and 007 is not appropriate. The stormwater flow study (September 2006) was a fifteen-month study that included data from different types of antecedent conditions, storms, and runoff events. The analysis of this data used to develop stream flow and effluent flow ratios was not based on “instantaneous” flow readings, but rather on total flow throughout runoff events. The permittee requested that these proposed effluent limitations be removed.

The permittee also requested that the accompanying conditions in Part II of the permit (Condition Nos. 13, 14, and 15) also be removed from the permit.

Response 8: Stream flow is a report only requirement and is necessary based on the other requirements in Part IA of the permit.

Section 5.1 of the Stormwater Flow Study (SFS) submitted in 2006 states that the stormwater discharge flow was totalized on an event basis for each outfall and compared to the total background storm event flow in the tributary to determine a total storm event flow ratio for each event where a discharge occurred.

The metals limits and stream flow to effluent flow ratios have been removed from Outfalls 006 and 007. However, in order to ensure that the water quality standards are being met at all times, the Department has added the requirement for the permittee to calculate the in-stream waste concentration (IWC). The permittee will be required to indicate on the DMR if the IWC is above or below the specified water quality standard. Any reports that the IWC is above the water quality standard will be considered a permit violation. The methods for calculating the IWCs will be included in Part II of the permit. The comparison of the IWC to the WQS will be limits in the permit for Total Recoverable Lead and Total Recoverable Zinc. Only one IWC based on the concentrations at Outfall 006 and Outfall 007 will be required due to the proximity of the outfalls to each other and where they commingle in the receiving stream.

The Department recognizes that the draft permit only contained monitoring and reporting limits for Total Recoverable Zinc. This was due to reasonable potential not being demonstrated when using the background flow to effluent flow ratio that was a limit in the draft permit. Reasonable potential for Total Recoverable Zinc is demonstrated at a ratio of 1 cfs background flow to 1 cfs effluent flow for both outfalls. Ratios lower than 1:1 were demonstrated during the SFS. Therefore, Total Recoverable Zinc limits are required. Requiring the IWC to be less than the water quality standard at Outfall 104ST fulfills that requirement. The method outlined in the preceding paragraph will allow the permittee maximum flexibility with the discharge limits while still ensuring that the water quality standards in the stream are met at all times.

Comment 9: Condition No. 4 of Part III of the current permit (Part II of the draft permit) allows EDCC to request reductions in monitoring frequencies after 365 consecutive data points for those pollutants which have monitoring requirements in excess of three times per week provided that the outfall is being sampled concurrently with other dischargers to the Joint Pipeline and no exceedances of permit limits have occurred.

EDCC currently monitors daily for CBOD5, TSS, NH3-N, DO, FCB, and TP. These are the only parameters that are eligible for reduction. Since discharge to the Joint Pipeline was initiated in October 2013, EDCC has been concurrent with the other pipeline entities and there have been in excess of 365 data points taken during this timeframe. There have been no exceedances of permit limits for CBOD5, NH3-N, DO, FCB, and TP. Therefore, EDCC requests a monitoring frequency reduction to three per week for those parameters.

Response 9: The permittee submitted the 2016 effluent data for the parameters in question. The permit contains limits for CBOD5, TSS, FCB, and NH3-N at Outfall 010. Only monitoring and reporting is required to DO and TP.

The data showed that the permit limits for FCB, and NH3-N were met for 365 consecutive days. Therefore, the monitoring frequencies for those parameters will be reduced to three/week.

The TSS limits were exceeded at least once during the specified time frame, specifically on August 9, 2016. Also, the CBOD5 limit was exceeded on September 10, 2016. Therefore, the TSS and CBOD5 monitoring frequencies will remain at once per day.

The reported DO levels have been compared to the requirement in the permit (NPDES Permit No. AR0050296) for the joint pipeline's discharge directly into the Ouachita River. The reported DO levels in the effluent discharged through Outfall 010 are all well above the minimum required 2.0 mg/l in AR0050296. Therefore, the request to reduce the monitoring frequency for DO has been granted.

The permittee has reported more than one TP level above the limits in NPDES Permit No. AR0050296. Therefore, the effluent from this facility has the potential to exceed the TP limits in AR0050296 since no permit conditions forbid this facility from being the only discharger to the pipeline. Therefore, the Department will not grant the request to reduce the TP monitoring frequency.

Comment 10: The sample frequencies for NH3-N and Nitrates at Outfall 101ST are not consistent with the sample frequencies for these parameters at Outfall 001. The Outfall 002 Nitrates sampling frequency is once per day while it is three/week at Outfall 001. Daily values are therefore not available at Outfall 001. EDCC requests that the sample frequencies be changed to three per week. If it remains the same, a note needs to be added to clarify that sample results can be used for multiple days calculations.

Response 10: The sampling frequencies of once per day at Outfall 002 and three per week at Outfall 001 have been carried forth from the previous NPDES permit. The monitoring frequency at Outfall 101ST will be changed to three per week. However, a footnote will be added requiring that a discharge from Outfall 002 be included in one of the required calculations.

The existing footnote has been changed to include Outfall 010 since the permittee is allowed to discharge from Outfall 002 and Outfall 010 at the same time.

Comment 11: In Part IA, Outfall 102ST, the footnotes associated with the NH3-N monitoring frequency appear to be switched. The footnote for April – October should be “twice/seven months” while the footnote for November – March should be “twice/five months.”

Response 11: The correction has been made.

Comment 12: Please clarify the footnote to the effluent limitations table for Outfall 103ST. The wording seems incomplete.

Also, Outfall 002 rarely discharges. The facility would likely be sending a note or letter with each DMR. EDCC requests that the footnote be revised to require a note to be added when Outfall 002 discharges the same day as Outfalls 006 and 007.

Response 12: The Department is in agreement that the note should only be required when Outfall 002 discharges on the same day as Outfalls 006 and 007. The footnote has been clarified and revised as requested.

Comment 13: EDCC requests that Part II, Condition No. 17 be removed. Part IA lists all allowable sources and thus this condition is redundant.

Response 13: This condition was added since other waters were being discharged during a site visit several years ago. However, the permit at that time contained SWPPP language which had references to allowable non-stormwater discharges. That language is no longer in the permit. Therefore, Condition No. 17 will be removed from the permit.

Comment 14: EDCC requests the following changes to Part II, Condition No. 18:

- a. The last sentence of the first paragraph states “The facility shall commence with the above process within 30 calendar days of the exceedance.”

EDCC requests this be changed to “*known* exceedance.”

- b. The condition states that “Corrective actions must be completed within 90 days of the exceedance of the benchmark value unless an extension in writing has been received from the Department.”

Corrective actions could be on-going from one quarter to the next or implementation could take longer than 90 days. EDCC requests that this portion of the condition be removed.

- c. The fourth paragraph states “Corrective Action Plan data must be submitted to the Department once per calendar quarter.”

EDCC requests clarification on the definition of “Corrective Action Plan data.” Also, EDCC requests that submittal of any Corrective Action Plans be on a yearly basis, not quarterly.

Response 14:

- a. Part 3.12.1 of the Stormwater Industrial General Permit (IGP) states “The facility shall commence with the above process within 30 calendar days of the exceedance.” The change will not be made as requested in order to maintain equal permitting requirements for stormwater discharges.
- b. The 90 day requirement will be removed as the most recent version of the IGP does not include that requirement. It is important to note that the facility will be required to demonstrate that all corrective actions are being taken as expeditiously as possible.
- c. The Corrective Action Plan must contain the following: the results of the review; the corrective actions being taken to address the benchmark excursion, including whether a SWPPP modification is necessary; and an implementation schedule with milestone dates and including alternative methods for implementing existing site controls or methods for implementing additional effective site controls, if the site controls has not already been implemented. The Corrective Action Plan data includes information relating to what must be contained in the document.

As the IGP no longer requires submittal of this information unless specifically requested by the Department, the quarterly submittal requirement will be removed from the permit.

Comment 15: Part II.3 is referenced under the Calculated Flow Measurement Section of Part III.C.2. Part II.3 of the permit discusses the required MQLs for metals. Please clarify.

Response 15: Part III.C.2 has been corrected to reference Part II.8.

AGFC Comments

The Arkansas Game and Fish Commission (AGFC) submitted comments on the draft permit on March 13, 2017, after the public comment period ended. Therefore, in accordance with Reg. 8.208(D), the Department cannot accept the comments and in accordance with Reg. 8.214, the AGFC does not have standing to appeal this permitting decision.

Comment 16: The AGFC expressed concerns that the highest values in the metals samples are being thrown out as outliers without sufficient justification. Was a statistical outlier test performed, and if so, which one?

Response 16: The outlier calculations may be found at the following links:

Lead

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20006%20Lead%20Outlier%20Calculations_20160621.pdf

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20007%20Lead%20Outlier%20Calculations_20160621.pdf

Zinc

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20006%20Zinc%20Outlier%20Calculations_20160621.pdf

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Outfall%20007%20Zinc%20Outlier%20Calculations_20160621.pdf

Comment 17: The AGFC continues to support the use of numerical criteria, such as concentration limits on metals and nutrients, especially in light of recent effluent violations. The reduction of Total Recoverable Zinc limits to quarterly monitoring and reporting needs more justification. The Department appears to acknowledge this criteria has a reasonable potential to be exceeded, but is reducing the limits.

Response 17: Item Nos. 8.A, 13.A.1.ii, 13.B, 13.D, and 15 of the Fact Sheet provide justification for the changes at Outfall 001.

Please see Response 8 for information regarding the changes to the requirements for Total Recoverable Lead and Total Recoverable Zinc at Outfalls 006 and 007.

Comment 18: The temperature limit is planned to be removed due to a temperature study conducted by the permittee. A search of the available records for this permit yielded no temperature studies. The AGFC requested a copy of the temperature study.

Response 18: The temperature study is on the Department's web site at the following address:

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0000752_Equalization%20Basin%20Temperature%20Study_20051029.pdf

ADEQ Change

The flow sample types for Outfalls 006 and 007 have been changed to instantaneous from estimate. The change was made because Parshall flumes are located at both outfalls.

Summary of Changes to the permit		
Part		Comment #
IA	Added domestic wastewater as a source for Outfalls 001, 002, 010, and 101ST	1
IA	Outfall 001 - Footnote reference for pH changed to 4	2
IA	Outfall 001 TSS final limits changed to match interim limits	3
IA	Outfalls 006 and 007 – WET testing combined and moved to Outfall 104ST	5
IA	Outfall 002 – footnote for TSS benchmark condition added to final limits page	6
IA	Stream flow to effluent flow ratios removed	8
IA	Lead and Zinc limits at Outfalls 006 and 007 moved to Outfall 104ST	8
IA	NH3-N, DO, FCB monitoring frequencies at Outfall 010 reduced	9
IA	Permittee required to include Outfall 002 in calculations for Outfall 101ST only if discharging from that outfall. Monitoring frequencies at Outfall 101ST set at three per week.	10
IA	Outfall 010 added to existing footnote for Outfall 101ST	10
IA	Outfall 102ST footnotes have been corrected	11
IA	Outfall 103ST footnote has been clarified	12
II	Condition No. 17 has been removed	13
II	Condition No. 18 has been partially revised as requested by permittee	14
III	A reference in Part III.C.2 has been corrected.	15
IA	Flow sample types for Outfalls 006 and 007 have been changed to instantaneous	ADEQ Change