

Permit Number: AR0033723
AFIN: 70-00341

**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 (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

El Dorado Water Utilities – South Plant

is authorized to discharge treated municipal wastewater from a facility located as follows: 325 Quail Crossing, El Dorado, AR 71730, from Hwy. 82 Bypass, travel 0.7 miles north on Southfield Road, then 0.2 miles north on South West Avenue, then 0.25 miles east on East Pecan Street, then 1.4 miles south on South Jackson Street, then right on Quail Crossing to facility in Union County, Arkansas. The applicant's mailing address is: P.O. Box 1587, El Dorado, AR 71731.

Facility Coordinates: Latitude: 33° 10' 24.24"; Longitude: 92° 39' 40.60"

Receiving stream: Bayou de Loutre, thence to the Ouachita River in Segment 2D of the Ouachita River Basin.

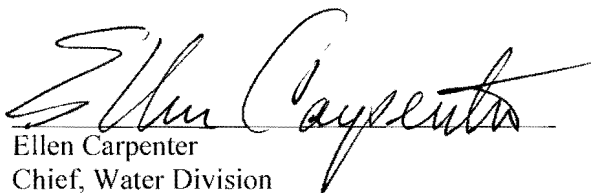
The permitted outfall is located at the following coordinates:


Outfall 001: Latitude: 33° 10' 24"; Longitude: 92° 39' 41"

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 date of the permit for permit coverage past the expiration date.

The response to comments is attached.

Effective Date: January 1, 2015
Expiration Date: December 31, 2019


Ellen Carpenter
Chief, Water Division
Arkansas Department of Environmental Quality


Issue Date

**PART I
PERMIT REQUIREMENTS**

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal wastewater.

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 as well as Parts II and III. See Part IV for all definitions and calculations.

<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 ⁵	Sample Type	
		Monthly Avg.	Monthly Avg.			7-Day Avg.
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter	
Upstream Flow ⁸						
(April – May)	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	instantaneous	
Overflows	Monthly Total SSOs (occurrences/month)			See Comments ¹		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Comments ¹		
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	583.8	10	15	once/week	composite	
(November – April)	1459.5	25	37.5	once/week	composite	
Total Suspended Solids (TSS)						
(May – October)	875.7	15	22.5	once/week	composite	
(November – April)	1751.4	30	45	once/week	composite	
Ammonia Nitrogen (NH ₃ -N) ⁶						
April	Temp. ≤ 21.1°C	240.53	4.12	10.3	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	199.66	3.42	8.55	once/week	composite
	24.1°C < Temp. ≤ 26.0°C	175.14	3.00	7.50	once/week	composite
	26.1°C < Temp. ≤ 28.0°C	154.12	2.64	6.63	once/week	composite
	28.1°C ≤ Temp.	135.44	2.32	5.80	once/week	composite
May	Temp. ≤ 21.1°C	258.04	4.42	7.5	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	213.67	3.66	7.5	once/week	composite
	24.1°C < Temp. ≤ 26.0°C	187.98	3.22	7.5	once/week	composite
	26.1°C < Temp. ≤ 28.0°C	165.22	2.83	7.08	once/week	composite
	28.1°C ≤ Temp.	145.37	2.49	6.23	once/week	composite
(June – October)	140.2	2.4	6.1	once/week	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 ⁵	Sample Type
		Monthly Avg.	Monthly Avg.		
(November – March)	397.0	6.8	17.0	once/week	composite
Dissolved Oxygen (DO)					
(May – October)	N/A	3.0 (Monthly Avg. Min.)		once/week	grab
(November – April)	N/A	5.0 (Monthly Avg. Min.)		once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
(April – September)	N/A	200	400	once/week	grab
(October – March)	N/A	1000	2000	once/week	grab
Upstream Temperature ^{7, 8}					
(April – May)	N/A	N/A	Report °C	three/week	grab
Effluent Temperature ⁷					
(April – May)	N/A	N/A	Report °C	three/week	grab
Nitrates plus Nitrites as Nitrogen (NO ₃ + NO ₂ -N)	Report	Report	Report	once/month	grab
Total Recoverable Copper ²	Report	Report µg/l	Report µg/l	once/month	composite
Total Recoverable Selenium ²	Report	Report µg/l	Report µg/l	once/month	composite
Total Recoverable Cyanide ²	Report	Report µg/l	Report µg/l	once/month	grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab
Chronic WET Lethality ³	<u>Daily Avg.</u> <u>Min.</u> Not < 100%	<u>7-day Minimum</u> Not < 100%		See Footnote ⁴	composite
Chronic WET Sub-Lethality ³	<u>Daily Avg.</u> <u>Min.</u> Report %	<u>7-day Minimum</u> Report %		See Footnote ⁴	composite
<u>Pimephales promelas (Chronic)³</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/quarter once/quarter once/quarter once/quarter once/quarter	composite composite composite composite composite
<u>Ceriodaphnia dubia (Chronic)³</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/two months once/two months once/two months once/two months	composite composite composite composite

1 See Condition No. 5 of Part II (SSO Condition). If there are no overflows during the entire month, report "zero" (0).

2 See Condition No. 8 of Part II (Metals Condition).

- 3 See Condition No. 9 of Part II (WET Testing Condition).
- 4 Testing for *P. promelas* must be conducted once per quarter. Testing for *C. dubia* must be conducted once every two months. The *C. dubia* test for the time frame of May – June must be conducted in the month of June.
- 5 Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table.
- 6 The temperature based tiered NH₃-N limits are applicable only during the months of April and May. The permittee is required to submit DMRs for each tier of NH₃-N limits for the months of April and May, regardless if a temperature occurred in that tier when an NH₃-N sample was taken. If a temperature did not occur in a temperature range when the sample was taken, that portion of the DMR must be marked “Not required.”
7. The permittee must take one of the required temperature readings during the composite sampling required for NH₃-N. The temperature reading taken will determine which tier of NH₃-N limits will be applicable to that sample. The temperature readings must be done in accordance with the procedures set forth in Part II, Condition 10 of this permit. On the day that the NH₃-N sample is taken, the temperature readings must be taken between 12:00 pm – 3 pm Central time.
8. Stream temperature and flow must be monitored even if the permittee is not discharging under this permit. See Condition No. 13 of Part II.

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 as defined in Part IV of this permit.

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 shall be taken after the DAF unit and prior to entering the man-made ditch.

PART I
PERMIT REQUIREMENTS

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal 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 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

<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 ⁵	Sample Type	
		Monthly Avg.	Monthly Avg.			7-Day Avg.
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter	
Upstream Flow ⁸						
(April – May)	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	instantaneous	
Overflows	Monthly Total SSOs (occurrences/month)			See Comments ¹		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Comments ¹		
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	583.8	10	15	once/week	composite	
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(May – October)	875.7	15	22.5	once/week	composite	
(November – April)	1751.4	30	45	once/week	composite	
Ammonia Nitrogen (NH3-N)						
April	Temp. ≤ 21.1°C	240.53	4.12	10.3	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	199.66	3.42	8.55	once/week	composite
	24.1°C < Temp. ≤ 26.0°C	175.14	3.00	7.50	once/week	composite
	26.1°C < Temp. ≤ 28.0°C	154.12	2.64	6.63	once/week	composite
	28.1°C ≤ Temp.	135.44	2.32	5.80	once/week	composite
May	Temp. ≤ 21.1°C	258.04	4.42	7.5	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	213.67	3.66	7.5	once/week	composite
	24.1°C < Temp. ≤ 26.0°C	187.98	3.22	7.5	once/week	composite
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		Monthly Avg.	Monthly Avg.		
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Dissolved Oxygen (DO)					
(May – October)	N/A	3.0 (Monthly Avg. Min.)		once/week	grab
(November – April)	N/A	5.0 (Monthly Avg. Min.)		once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
(April – September)	N/A	200	400	once/week	grab
(October – March)	N/A	1000	2000	once/week	grab
Upstream Temperature ^{7, 8}					
(April – May)	N/A	N/A	Report °C	three/week	grab
Effluent Temperature ⁷					
(April – May)	N/A	N/A	Report °C	three/week	grab
Nitrates plus Nitrites as Nitrogen (NO ₃ + NO ₂ -N)	Report	Report	Report	once/month	grab
Total Recoverable Copper ²	0.71	12.20 µg/l	24.48 µg/l	once/month	composite
Total Recoverable Selenium ²	0.33	5.58 µg/l	11.20 µg/l	once/month	composite
Total Recoverable Cyanide ^{2, 9}	0.34	5.80 µg/l	11.64 µg/l	once/month	grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab
Chronic WET Lethality ³	<u>Daily Avg.</u> <u>Min.</u> Not < 100%	<u>7-day Minimum</u> Not < 100%		See Footnote ⁴	composite
Chronic WET Sub-Lethality ³	<u>Daily Avg.</u> <u>Min.</u> Not < 80%	<u>7-day Minimum</u> Not < 80%		See Footnote ⁴	composite
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2 See Condition No. 8 of Part II (Metals Condition).

3 See Condition No. 9 of Part II (WET Testing Condition).

- 4 Testing for *P. promelas* must be conducted once per quarter. Testing for *C. dubia* must be conducted once every two months. The *C. dubia* test for the time frame of May – June must be conducted in the month of June.
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7. The permittee must take one of the required temperature readings during the composite sampling required for NH₃-N. The temperature reading taken will determine which tier of NH₃-N limits will be applicable to that sample. The temperature readings must be done in accordance with the procedures set forth in Part II, Condition 10 of this permit. On the day that the NH₃-N sample is taken, the temperature readings must be taken between 12:00 pm – 3 pm Central time.
8. Stream temperature and flow must be monitored even if the permittee is not discharging under this permit. See Condition No. 13 of Part II.
9. Since the allowable MQL for Cyanide is above the permit limit, compliance with this limit will be demonstrated using the method MQL of 10 µg/l. If the test result is below the MQL achieved but above the detection level, the permittee must report NODI = Q. If Cyanide is not detected, the permittee must report NODI=B.

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 as defined in Part IV of this permit.

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 shall be taken after the DAF unit and prior to entering the man-made ditch.

SECTION B. PERMIT COMPLIANCE

1. With the exceptions listed in Item #2 below, compliance is required on the effective date of the permit.
2. Compliance with the Final Effluent Limitations for Total Recoverable Copper, Total Recoverable Selenium, Total Recoverable Cyanide, and sub-lethal *P. promelas* and *C. dubia* is 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 Total Recoverable Copper, Total Recoverable Selenium, Total Recoverable Cyanide, and sub-lethal *P. promelas* and *C. dubia* according to the following schedule:

ACTIVITY

DUE DATE

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
Water division
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 Total Recoverable Copper, Total Recoverable Selenium, Total Recoverable Cyanide, and sub-lethal *P. promelas* and *C. dubia* limits 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 reduce the Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide levels as well as the sub-lethal effects to *P. promelas* and *C. dubia* in the influent 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.

PART II OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be licensed as Class IV by the State of Arkansas in accordance with APCEC Regulation No. 3.
2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102, as adopted by reference in APCEC Regulation No. 6. The permittee must monitor the influent and effluent CBOD5 and TSS at least once per year and calculate the percent removal to ensure compliance with the required 85 percent removal. This information must be maintained on site and provided to Department personnel upon request.
3. 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.
4. 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 Water Division 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.

5. Sanitary Sewer Overflow (SSO) Reporting Requirements:

All SSOs are prohibited.

A. A sanitary sewer overflow is any spill, release or diversion of wastewater from a sanitary sewer collection system including:

1. Any overflow, whether it discharges to the waters of the state or not; or
2. An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the state.

B. Immediate Reporting

Overflows that endanger health or the environment shall be orally reported to the Enforcement Branch of the Water Division by telephone (501-682-0638) or by email waterenfssso@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance.

C. Follow-Up Written Reports/email:

A written report of overflows that endanger health or the environment shall be provided to ADEQ within 5 days of the time the permittee becomes aware of the circumstance.

At a minimum, the report shall identify:

1. The location(s) of overflow;
2. The receiving water (If there is one);
3. The duration of overflow;
4. Cause of overflow; and
5. The estimated volume of overflow (gal).

A 24-hr and 5-day follow-up written report can be filled-in or downloaded from the ADEQ /Water Division/Enforcement Branch Web page at

http://www.adeq.state.ar.us/water/branch_enforcement/forms/ssso_report.asp

D. Reporting for All SSOs on DMR

At the end of the month, total the daily occurrences and volumes from all locations on your system and report this number on the DMR. For counting occurrences, each location on the sanitary sewer system where there is an overflow, spill, release, or diversion of wastewater on a given day is counted as one occurrence. For example, if on a given day overflows occur from a manhole at one location and from a damaged pipe at another location then you should record two occurrences for that day.

6. Best Management Practices (BMPs), as defined in Part IV.6, must be implemented for the facility along with the collection system to prevent or reduce the pollution of waters of the State from stormwater runoff, spills or leaks, sludge or waste disposal, or drainage from raw sewage. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

7. CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

- a. The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the approved POTW pretreatment program submitted by the permittee. The pretreatment program was approved on 3/22/85 and again modified on 8/16/02. Pretreatment Streamlining modifications to be current with 40 CFR 403 were submitted on 9/24/12 and are pending final approval. The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

- (1) Industrial user information shall be updated at a frequency adequate to ensure that all IUs are properly characterized at all times;
- (2) The frequency and nature of industrial user compliance monitoring activities by the permittee shall be commensurate with the character, consistency and volume of waste. The permittee must inspect and sample the effluent from each Significant Industrial User in accordance with 40 CFR 403.8(f)(2)(v). This is in addition to any industrial self-monitoring activities;
- (3) The permittee shall enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements;
- (4) The permittee shall control through permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users identified as significant under 40 CFR 403.3 (v), this control shall be achieved through individual control mechanisms, in accordance with 40 CFR 403.8(f)(1)(iii). Control

mechanisms must be enforceable and contain, at a minimum, the following conditions:

- (a) Statement of duration (in no case more than five years);
 - (b) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
 - (c) Effluent limits, including Best Management Practices, based on applicable general Pretreatment Standards, categorical Pretreatment Standards, local limits, and State and local law;
 - (d) Self-monitoring, sampling, reporting, notification and recordkeeping requirements, including an identification of the pollutants to be monitored sampling location, sampling frequency, and sample type, based on the applicable general Pretreatment Standards in 40 CFR 403, categorical Pretreatment Standards, local limits, and State and local law;
 - (e) Statement of applicable civil and criminal penalties for violation of Pretreatment Standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines; and
 - (f) Requirements to control slug discharges, if determined by the POTW to be necessary.
- (5) The permittee shall evaluate, whether each Significant Industrial User needs a plan or other action to control slug discharges, in accordance with 40 CFR 403.8(f)(2)(vi);
- (6) The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and
- (7) The approved program shall not be modified by the permittee without the prior approval of ADEQ.
- b. The permittee shall establish and enforce specific limits to implement the provisions of 40 CFR Parts 403.5(a) and (b), as required by 40 CFR Part 403.5(c). POTWs may develop Best Management Practices (BMPs) to implement paragraphs 40 CFR 403.5 (c)(1) and (c)(2). Such BMPs shall be considered local limits and Pretreatment Standards. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

The permittee shall submit, within sixty (60) days of the effective date of this permit, (1) a **WRITTEN CERTIFICATION** that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination, (2) a **WRITTEN NOTIFICATION** that a technical evaluation revising the current TBLL will be submitted within 12 months of the effective date of this permit, OR (3) a **WRITTEN NOTIFICATION** that local limits are not necessary for any pollutant at this time.

All specific prohibitions or limits developed under this requirement are deemed to be conditions of this permit. The specific prohibitions set out in 40 CFR Part 403.5(b) shall be enforced by the permittee unless modified under this provision.

- c. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table II at least once/year and the toxic pollutants in Table III at least 4 times/year (quarterly). If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least 4 times/year (quarterly) on both the influent and the effluent.

The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR 136. Where composite samples are inappropriate, due to sampling, holding time, or analytical constraints, at least 4 grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.

- d. The permittee shall prepare annually a list of Industrial Users which during the preceding twelve months (the Pretreatment "Reporting Year") were in significant noncompliance with applicable pretreatment requirements. For the purposes of this Part, significant noncompliance shall be determined based upon the more stringent of either criteria established at 40 CFR Part 403.8(f)(2)(viii) or criteria established in the approved POTW pretreatment program. This list is to be published annually in the newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW during the month of March.

In addition, by 4:30 pm (if electronically submitted) OR postmarked on or before the last business day in the month of March the permittee shall submit an updated pretreatment program status report to the ADEQ containing the following information:

1. An updated list of all significant industrial users. The list must also identify:
 - (a) Industrial Users subject to the following categorical Pretreatment Standards [Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (40 CFR Part 414), Petroleum Refining (40 CFR Part 419), and Pesticide Chemicals (40 CFR Part 455)] and for which the Control Authority has chosen to use the concentration-based standards rather than converting them to flow-based mass standards as allowed at 40 CFR 403.6(c)(6).
 - (b) Categorical Industrial Users subject to concentration-based standards for which the Control Authority has chosen to convert the concentration-based standards to equivalent mass limits, as allowed at 40 CFR 403.6(c)(5).
 - (c) Best Management Practices or Pollution Prevention alternatives required by a categorical Pretreatment Standard or as a local limit requirement that are implemented and documentation to demonstrate compliance, as required at 40 CFR 403 (b), (e) and (h).
2. For each industrial user listed the following information shall be included:
 - (a) Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) code and categorical determination;
 - (b) Control document status. Whether the user has an effective control document, and the date such document was last issued, reissued, or modified, (indicate which industrial users were added to the system (or newly identified) within the previous 12 months);
 - (c) A summary of all monitoring activities performed within the previous 12 months. The following information shall be reported:
 - total number of inspections performed;
 - total number of sampling visits made;
 - (d) Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:
 - Compliant (C) - no violations during the previous 12 month period;
 - Non-compliant (NC) - one or more violations during the previous 12 months but does not meet the criteria for significantly noncompliant industrial users;

- Significant Noncompliance (SNC) - in accordance with requirements described in d. above; and
- (e) For significantly noncompliant industrial users, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If ANY industrial user was on a schedule to attain compliance with effluent limits, indicate the date the schedule was issued and the date compliance is to be attained;
- (1) A list of all significant industrial users whose authorization to discharge was terminated or revoked during the preceding 12 month period and the reason for termination;
 - (2) A report on any interference, pass through, upset or POTW permit violations known or suspected to be caused by industrial contributors and actions taken by the permittee in response;
 - (3) The results of all influent and effluent analyses performed pursuant to paragraph c. above;
 - (4) An influent/effluent summary chart containing the monthly average water quality based effluent concentration demonstrating compliance with permit limits or the water quality levels not to exceed as developed in the permittee's approved technically based local limits document.
 - (5) The information requested may be submitted in tabular form as per the example tables provided for your convenience (See Attachment A, B and C); and
 - (6) A copy of the newspaper publication of the significantly noncompliant industrial users giving the name of the newspaper and the date published;
- e. The permittee shall provide adequate notice of the following:
- (1) Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Act if it were directly discharging those pollutants; and
 - (2) Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

Adequate notice shall include information on (i) the quality and quantity of effluent to be introduced into the treatment works, and (ii) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

8. The permittee may use any EPA approved method based on 40 CFR Part 136 provided the MQL for the chosen method is equal to or less than what has been specified in chart below:

Pollutant	MQL (µg/l)
Total Recoverable Copper	0.5
Total Recoverable Selenium	5
Total Recoverable Cyanide	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 Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

If the permittee can demonstrate that reasonable potential does not exist, they may submit an application to modify the permit to remove the metal in question. A minimum of 24 samples must be used in this determination. Any application to modify the permit must be received no later than 24 months from the effective date of the permit.

9. WHOLE EFFLUENT TOXICITY LIMITS (7-DAY CHRONIC NOEC FRESHWATER)

1. SCOPE AND METHODOLOGY

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

APPLICABLE TO FINAL OUTFALL:	001
REPORTED ON DMR AS FINAL OUTFALL:	001
CRITICAL DILUTION (%):	100%
EFFLUENT DILUTION SERIES (%):	32%, 42%, 56%, 80%, & 100%
LETHAL LIMIT:	100%
SUB-LETHAL LIMIT:	80%
SUB-LETHAL SCHEDULE OF COMPLIANCE:	YES (both species)
TESTING FREQUENCY:	Once/quarter – <i>P. promelas</i> Once/two months – <i>C. dubia</i>
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 limit. When the testing frequency stated above is less than monthly and the effluent fails the lethal or sub-lethal 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. PERSISTENT SUB-LETHAL EFFECTS

This condition only applies during the first three years of the permit.

The requirements of this subsection apply to those parameters without WET Limits, 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.

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 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.
- iii. 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 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 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 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 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.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 4 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
- ii. The permittee 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.

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. The permittee shall report the Whole Effluent Toxicity values for the 30-Day Average Minimum and the 7-Day Minimum under Parameter No. 22414 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 or equal to 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 or equal to 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 or equal to 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 or equal to 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. The permittee must take the temperature samples at different times of the day. For instance, after the first sample is taken in the month of April, the following samples must be taken a minimum of two hours before or after the previous sample. All times of the day must be covered in four samples, i.e., 8 AM, 10:30 AM, 1:00 PM, and 4:00 PM. These times are meant for example purposes only and are not required sampling times. The permittee must also vary the days of the week on which the samples are taken. Only one day from the previous calendar week may be repeated. The day which is repeated must vary such that a sample isn't taken on the same day every week. This condition applies only to the temperature monitoring requirements contained in Part IA of this permit.
11. At the time of the next permit renewal, the Department will re-evaluate the temperature used to calculate the NH₃-N toxicity limit for the months of April and May. The Department will take an arithmetic mean of all of the temperature data gathered by the permittee to determine if the temperatures used to calculate the NH₃-N toxicity limits for April and May are still appropriate. Each month will be evaluated separately. If the Department determines that a higher temperature should be used, a lower NH₃-N toxicity limit will likely result. The Department will evaluate the need for a Schedule of Compliance if the NH₃-N toxicity limit is lowered at the time of the next permit renewal.
12. The permittee shall notify the Department within 24 hours of any emergency or maintenance event that results in diverting wastewater from Outfall 010S in NPDES Permit No. AR0049743 to Outfall 001 permitted under NPDES No. AR0033723. For non-emergency and non-maintenance events that may result in diverting wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723, the permittee must provide notice and an explanation of the anticipated diversion to the Department at least two weeks in advance of any such event. The Department may, at its discretion, condition the diversion of wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723 as reasonably necessary to protect human health and the environment.
13. The permittee must monitor the flow and the temperature of the receiving stream upstream of the permitted outfall. These samples must be taken in accordance with the procedures set forth in Condition No. 10 for monitoring the effluent temperature. Any data collected during the term of this permit may be used to help determine the appropriate NH₃-N toxicity based limits at the time of the next permit renewal.

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; or
- B.** Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
- C.** A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- D.** A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
- E.** Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by 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 APCEC 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 APCEC 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 APCEC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

A. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

- B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to insure compliance with the conditions of this permit.

2. Need to Halt or Reduce not a Defense

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

3. Duty to Mitigate

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

4. Bypass of Treatment Facilities

A. Bypass not exceeding limitation

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

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 the waters of the State. The permittee shall give at least 180 days prior notice to the Director of any change planned in the permittee's disposal practices. Produced sludge shall be disposed of by land application only when allowed through a separate land application permit issued in accordance with the applicable provisions of 40 CFR Part 503.

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.3), 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

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form provided by the Department or other form/method approved in writing by the Department (e.g., electronic submittal of DMR once approved). Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month or submitted electronically by 6:00 p.m. of the 25th (after NETDMR is approved), following the completed reporting period beginning on the effective date of the permit. When mailing the DMRs, duplicate copies of the forms signed and certified as required by Part III.D.11 and all other reports required by Part III.D, shall be submitted to the Director at the following address:

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

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

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 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 individuals(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; and
- F. The measurements and results of such analyses.

9. Inspection and Entry

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

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

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give notice within 180 days and provide plans and specification (if applicable) to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility. In no case are any new connections, increased flows, removal of substances, or significant changes in influent quality permitted that cause violation of the effluent limitations specified herein.

2. Anticipated Noncompliance

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

3. Transfers

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

4. Monitoring Reports

Monitoring results shall be reported at the intervals and in the form specified in Part 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; and
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following shall be included as information which must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit;
2. Any upset which exceeds any effluent limitation in the permit and
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Section of the Water Division 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 Water Division 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 permittee shall notify the Director as soon as he/she knows or has reason to believe:

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

9. Duty to Provide Information

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

10. Duty to Reapply

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

11. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified 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; or
 - (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; or
 3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - (a) The chief executive officer of the agency, or
 - (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); and
 3. The written authorization is submitted to the Director.
- C. Certification. Any person signing a document under this section shall make the following certification:

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

12. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2 and APCEC 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.).

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. **“APCEC”** 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 (APCEC) 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”** As defined at 122.41(m).
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. The 7-day average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.

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 monthly average as a 30-day geometric mean 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 Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean 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 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.
19. **“Instantaneous Minimum”** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
20. **“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.
21. **“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.
22. **“POTW”** means a Publicly Owned Treatment Works.
23. **“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.
24. **“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.
25. **“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.

26. **“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.
27. **“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.
28. **“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.
29. **“MGD”** shall mean million gallons per day.
30. **“mg/l”** shall mean milligrams per liter or parts per million (ppm).
31. **“µg/l”** shall mean micrograms per liter or parts per billion (ppb).
32. **“cfs”** shall mean cubic feet per second.
33. **“ppm”** shall mean parts per million.
34. **“s.u.”** shall mean standard units.
35. **“Weekday”** means Monday – Friday.
36. **Monitoring and Reporting:**
37. 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; or
2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters 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.

Final Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for renewal of the discharge Permit Number AR0033723 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 70-00341 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 72118-5317

2. APPLICANT.

The applicant's mailing address is:

El Dorado Water Utilities - South Plant
P.O. Box 1587
El Dorado, AR 71731

The facility address is:

El Dorado Water Utilities - South Plant
325 Quail Crossing
El Dorado, AR 71730

3. PREPARED BY.

The permit was prepared by:

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4. PERMIT ACTIVITY.

Previous Permit Effective Date: 10/1/2008
Previous Permit Expiration Date: 9/30/2013

The permittee submitted a permit renewal application on 4/2/2013 with all additional information submitted by 5/28/2013. The discharge permit is reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

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 practices
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
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
USF&WS - United States Fish and Wildlife Service
WET - Whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

DMR Review:

The Discharge Monitoring Reports (DMR's) for March 2010 through February 2013 were reviewed during the permit renewal process. Violations of the NH₃-N limits for the months of October 2011, March 2012, and April 2012 as well as a violation of the BOD₅ limits for the month of October 2012 were noted to have occurred during the specified time frame. WET limit violations are listed in Item #14 of this Fact Sheet.

Legal Order Review:

The facility is currently under a CAO, LIS No. 12-167. The CAO was issued due to the NH₃-N violations noted in the preceding paragraph as well as violations of the WET limits.

5. 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.

Changes made to the previous permit in the draft permit and remaining in the final permit.

1. The description of the facility location has been modified.
2. Sub-lethal WET limits for *P. promelas* and *C. dubia* have been added to the permit. A schedule of compliance for these new limits have been added to the permit.
3. Limits for Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide have been added to the permit. A schedule of compliance for these parameters has been included in the permit.
4. The minimum required DO levels are now expressed as instantaneous minimums.
5. The SSO language has been modified. The permittee is now required to report this data on the monthly DMRs.
6. The permittee is now required to test the influent for CBOD₅ and TSS to demonstrate compliance with the required percent removal of these parameters.

7. Monitoring and reporting requirements for Nitrates plus Nitrites as Nitrogen have been added to the permit.
8. The 24-hour composite sample types have been changed to composite.
9. The *C. dubia* monitoring frequency has been changed to once every two months.

Changes made to the draft permit in the final permit

10. The Total Phosphorous requirements have been deleted.
11. The Total Recoverable Lead requirements have been deleted.
12. The NH₃-N limits for the months of April and May have changed.
13. The Nitrates plus Nitrites as Nitrogen sampling frequency has been reduced to once per month.
14. A sentence has been added to Condition No. 10 of Part II to clarify that it only applies to the temperature monitoring requirements.
15. The minimum required DO levels are now expressed as monthly average minimums.
16. Condition No. 8 of Part II has been modified to allow the permittee to submit an application for a major modification if they can demonstrate that reasonable potential does not exist for cyanide, selenium, or copper.
17. Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table. This requirement has been added to the permit to insure that the minimum number of required samples are obtained when the permittee is discharging.
18. Monitoring and reporting requirements for the flow and the temperature of the receiving stream upstream of the permitted outfall have been added to the permit. See Item #13.C.3 of this Fact Sheet for additional information.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on the permit application and confirmed with Google Earth using WGS84:

Latitude: 33° 10' 24" Longitude: 92° 39' 41"

The receiving waters named:

Bayou de Loutre, 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 8040202 and reach # 008 is a Water of the State classified for secondary 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.

7. 303(d) LIST, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.

A. 303(d) List:

Bayou de Loutre is on the 2008 303(d) list for Zinc, Sulfates, and TDS in Category 5a due to resource extraction, industrial point sources, and municipal point sources. Category 5a includes those waters for which the impairment has been confirmed but for which a TMDL has not yet been completed.

The permittee is required to sample the effluent once per quarter for Zinc as part of their pretreatment program. The data from the term of the permit which expires on September 30, 2013, shows that Zinc is not present in levels about the MQL of 20 µg/l and that there is not reasonable potential for water quality violations regarding this parameter. Since the permittee will be required to continue monitoring Zinc as part of its pretreatment program, no further permit action will be taken at this time. The Department reserves the right to reopen the permit to included monitoring and reporting requirements or limits for Zinc if the permittee discontinues its pretreatment program, the pretreatment data shows that there is reasonable potential for water quality violations due to Zinc, or if a TMDL which includes the permittee is finalized.

Bayou de Loutre was included on the 2008 303(d) list for Sulfates and TDS due to exceedances of the drinking water standards. The drinking water use has been removed from Bayou de Loutre. This removal was made effective in Reg. 2 in November 2007 and approved by EPA in a letter dated April 14, 2009. Therefore, no permit action will be taken regarding Sulfates or TDS.

The Department recognizes that the Ouachita River is on the 303(d) list in Category 4a for Mercury and 5d for Zinc, both due to unknown causes. The confluence of Bayou de Loutre and the Ouachita River is over 57 stream miles from the permittee's outfall. Therefore, based on the judgment of the permit writer, no action will be taken regarding these listings.

B. 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 were sent to the USF&WS for their review.

C. 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.

8. OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION.

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

- A. Design Flow: 7 MGD
- B. Type of Treatment: two aerated lagoons and two facultative lagoons in series and dissolved air filtration (when discharging)
- C. Discharge Description: treated municipal wastewater
- D. Facility Status: This facility is classified as a Major municipal since the design flow of the facility listed above is greater than 1.0 MGD.
- E. 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.

9. ACTIVITY.

Under the Standard Industrial Classification (SIC) code of 4952 or North American Industry Classification System (NAICS) code of 221320, the applicant's activities are the operation of a sewage treatment plant.

10. INDUSTRIAL WASTEWATER CONTRIBUTIONS.

INDUSTRIAL USERS

This facility receives industrial process wastewater. Based on the applicant's effluent compliance history and the type of industrial contributions, standard Pretreatment Program implementation conditions are deemed appropriate at this time.

11. SEWAGE SLUDGE PRACTICES.

Sludge will be hauled off site as necessary.

12. PERMIT CONDITIONS.

The Arkansas Department of Environmental Quality has made a determination to issue a permit for the discharge described in the application. Permit requirements are based on 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.).

A. Interim Effluent Limitations

Outfall 001 – treated municipal wastewater

1. Conventional and/or Toxic Pollutants

<u>Effluent Characteristics</u>		<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
			Monthly Avg.	Monthly Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter	
Upstream Flow						
(April – May)	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	instantaneous	
Overflows	Monthly Total SSOs (occurrences/month)			See Condition 5 of Part II		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Condition 5 of Part II		
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	583.8	10	15	once/week	composite	
(November – April)	1459.5	25	37.5	once/week	composite	
Total Suspended Solids (TSS)						
(May – October)	875.7	15	22.5	once/week	composite	
(November – April)	1751.4	30	45	once/week	composite	
Ammonia Nitrogen (NH3-N)						
April	Temp. ≤ 21.1°C	240.53	4.12	10.3	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	199.66	3.42	8.55	once/week	composite
	24.1°C < Temp. ≤ 26.0°C	175.14	3.00	7.50	once/week	composite
	26.1°C < Temp. ≤ 28.0°C	154.12	2.64	6.63	once/week	composite
	28.1°C ≤ Temp.	135.44	2.32	5.80	once/week	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.	Monthly Avg.		
May	Temp. \leq 21.1°C	258.04	4.42	7.5	once/week	composite
	21.2°C < Temp. \leq 24.0°C	213.67	3.66	7.5	once/week	composite
	24.1°C < Temp. \leq 26.0°C	187.98	3.22	7.5	once/week	composite
	26.1°C < Temp. \leq 28.0°C	165.22	2.83	7.08	once/week	composite
	28.1°C \leq Temp.	145.37	2.49	6.23	once/week	composite
(June – October)		140.2	2.4	6.1	once/week	composite
(November – March)		397.0	6.8	17.0	once/week	composite
Dissolved Oxygen (DO)						
(May – October)		N/A	3.0 (Monthly Avg. Min.)		once/week	grab
(November – April)		N/A	5.0 (Monthly Avg. Min.)		once/week	grab
Fecal Coliform Bacteria (FCB)			(colonies/100 ml)			
(April – September)		N/A	200	400	once/week	grab
(October – March)		N/A	1000	2000	once/week	grab
Upstream Temperature						
(April – May)		N/A	N/A	Report °C	three/week	grab
Effluent Temperature						
(April – May)		N/A	N/A	Report °C	three/week	grab
Nitrates plus Nitrites as Nitrogen (NO ₃ + NO ₂ -N)		Report	Report	Report	once/month	grab
Total Recoverable Copper		Report	Report µg/l	Report µg/l	once/month	composite
Total Recoverable Selenium		Report	Report µg/l	Report µg/l	once/month	composite
Total Recoverable Cyanide		Report	Report µg/l	Report µg/l	once/month	grab
pH		N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab
Chronic WET Lethality		N/A	Not < 100%		once/quarter	composite
Chronic WET Sub-Lethality		N/A	Report %		once/quarter	composite

- Solids, Foam, and Free Oil:** 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).

B. Final Effluent Limitations

Outfall 001 – treated municipal wastewater

1. Conventional and/or Toxic Pollutants

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type	
		Monthly Avg.	Monthly Avg.			7-Day Avg.
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter	
Upstream Flow						
(April – May)	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	instantaneous	
Overflows	Monthly Total SSOs (occurrences/month)			See Condition 5 of Part II		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Condition 5 of Part II		
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	583.8	10	15	once/week	composite	
(November – April)	1459.5	25	37.5	once/week	composite	
Total Suspended Solids (TSS)						
(May – October)	875.7	15	22.5	once/week	composite	
(November – April)	1751.4	30	45	once/week	composite	
Ammonia Nitrogen (NH3-N)						
April	Temp. ≤ 21.1°C	240.53	4.12	10.3	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	199.66	3.42	8.55	once/week	composite
	24.1°C < Temp. ≤ 26.0°C	175.14	3.00	7.50	once/week	composite
	26.1°C < Temp. ≤ 28.0°C	154.12	2.64	6.63	once/week	composite
	28.1°C ≤ Temp.	135.44	2.32	5.80	once/week	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.	Monthly Avg.		
May	Temp. ≤ 21.1°C	258.04	4.42	7.5	once/week	composite
	21.2°C < Temp. ≤ 24.0°C	213.67	3.66	7.5	once/week	composite
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	26.1°C < Temp. ≤ 28.0°C	165.22	2.83	7.08	once/week	composite
	28.1°C ≤ Temp.	145.37	2.49	6.23	once/week	composite
(June – October)		140.2	2.4	6.1	once/week	composite
(November – March)		397.0	6.8	17.0	once/week	composite
Dissolved Oxygen (DO)						
(May – October)		N/A	3.0 (Monthly Avg. Min.)		once/week	grab
(November – April)		N/A	5.0 (Monthly Avg. Min.)		once/week	grab
Fecal Coliform Bacteria (FCB)			(colonies/100 ml)			
(April – September)		N/A	200	400	once/week	grab
(October – March)		N/A	1000	2000	once/week	grab
Upstream Temperature						
(April – May)		N/A	N/A	Report °C	three/week	grab
Effluent Temperature						
(April – May)		N/A	N/A	Report °C	three/week	grab
Nitrates plus Nitrites as Nitrogen (NO ₃ + NO ₂ -N)		Report	Report	Report	once/month	grab
Total Recoverable Copper		0.71	12.20 µg/l	24.48 µg/l	once/month	composite
Total Recoverable Selenium		0.33	5.58 µg/l	11.20 µg/l	once/month	composite
Total Recoverable Cyanide		0.34	5.80 µg/l	11.64 µg/l	once/month	grab
pH		N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab
Chronic WET Lethality		N/A	Not < 100%		once/quarter	composite
Chronic WET Sub-Lethality		N/A	Not < 80%		once/quarter	composite

- Solids, Foam, and Free Oil:** 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).

13. BASIS FOR PERMIT CONDITIONS.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the 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 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/BPJ		Previous Permit		Permit Limit		
	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	
Upstream Flow	N/A	N/A	Report MGD	Report Daily Max. MGD	N/A	N/A	Report MGD	Report Daily Max. MGD	
CBOD5									
(May – October)	10	15	25	40	10	15	10	15	
(November - April)	25	37.5	25	40	25	37.5	25	37.5	
TSS									
(May – October)	N/A	N/A	15	22.5	15	22.5	15	22.5	
(November - April)	N/A	N/A	30	45	30	45	30	45	
NH3-N									
(April)	Effl. Temp. ≤ 21.1°C	4.12	10.3	N/A	N/A	4.1	10.1	4.12	10.3
	21.2°C < Effl. Temp. ≤ 24.0°C	3.42	8.55	N/A	N/A	4.1	10.1	3.42	8.55
	24.1°C < Effl. Temp. ≤ 26.0°C	3.00	7.50	N/A	N/A	4.1	10.1	3.00	7.50
	26.1°C < Effl. Temp. ≤ 28.0°C	2.64	6.63	N/A	N/A	4.1	10.1	2.64	6.63
	28.1°C ≤ Effl. Temp.	2.32	5.80	N/A	N/A	4.1	10.1	2.32	5.80

Parameter		Water Quality-Based		Technology-Based/BJ		Previous Permit		Permit Limit	
		Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l
(May)	Effl. Temp. ≤ 21.1°C	4.42	7.5	N/A	N/A	4.1	7.5	4.42	7.5
	21.2°C < Effl. Temp. ≤ 24.0°C	3.66	7.5	N/A	N/A	4.1	7.5	3.66	7.5
	24.1°C < Effl. Temp. ≤ 26.0°C	3.22	7.5	N/A	N/A	4.1	7.5	3.22	7.5
	26.1°C < Effl. Temp. ≤ 28.0°C	2.83	7.08	N/A	N/A	4.1	7.5	2.83	7.08
	28.1°C ≤ Effl. Temp.	2.49	6.23	N/A	N/A	4.1	7.5	2.49	6.23
(June – October)		2.4	6.1	N/A	N/A	2.4	6.1	2.4	6.1
(November – March)		6.8	17.0	N/A	N/A	6.8	17.0	6.8	17.0
DO									
(May – October)		3.0 (Monthly Avg. Min.)		N/A		3.0 (Monthly Avg. Min.)		3.0 (Monthly Avg. Min.)	
(November - April)		5.0 (Monthly Avg. Min.)		N/A		5.0 (Monthly Avg. Min.)		5.0 (Monthly Avg. Min.)	
FCB (col/100 ml)									
(April – September)		200	400	N/A	N/A	200	400	200	400
(October – March)		1000	2000	N/A	N/A	1000	2000	1000	2000
Upstream Temperature									
(April – May)		N/A	N/A	N/A	Report °C	N/A	N/A	N/A	Report °C
Effluent Temperature									
(April – May)		N/A	N/A	N/A	Report	N/A	Report	N/A	Report
NO ₃ + NO ₂ - N		N/A	N/A	Report	Report	N/A	N/A	Report	Report
Total Recoverable Copper		12.20 µg/l	24.48 µg/l	N/A	N/A	N/A	N/A	12.20 µg/l	24.48 µg/l
Total Recoverable Selenium		5.58 µg/l	11.20 µg/l	N/A	N/A	N/A	N/A	5.58 µg/l	11.20 µg/l
Total Recoverable Cyanide		5.80 µg/l	11.64 µg/l	N/A	N/A	N/A	N/A	5.80 µg/l	11.64 µg/l

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous Permit		Permit Limit	
	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l
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.	
Lethal WET limits	not <100%		N/A		not <100%		not <100%	
Sub-lethal WET limits	not <80%		N/A		Report %		not <80%	

A. Justification for Limitations and Conditions of the Permit:

Parameter	Water Quality or Technology	Justification
Upstream Flow ¹	Technology	Verification of revised NH3-N limits for April and May
CBOD5	Water Quality	MultiSMP Model reviewed May 31, 2013
TSS	Technology	40 CFR 133.102(b) (November – April) 40 CFR 122.44(l) and previous permit (May – October)
NH3-N ²	Water Quality	Reg. 2.512 / MultiSMP Model reviewed May 31, 2013
DO	Water Quality	Reg. 2.505
FCB	Water Quality	Reg. 2.507
Upstream Temperature	Technology	Verification of revised NH3-N limits for April and May
Effluent Temperature	Technology	Verification of revised NH3-N limits for April and May
NO ₃ + NO ₂ – N ³	Technology	CPP
Total Rec. Cu ⁴	Water Quality	Reg. 2.508
Total Rec. Se ⁴	Water Quality	Reg. 2.508
Total Rec. CN ⁴	Water Quality	Reg. 2.508
pH	Water Quality	Reg. 2.504
Lethal WET ⁵	Water Quality	Reg. 2.409
Sub-lethal WET ⁵	Water Quality	Reg. 2.409

1. Upstream flow and temperature monitoring and reporting requirements for the months of April and May have been added to the permit. See Item #13.C.3 for additional information.
2. The NH3-N limits for the month of May have been revised. A schedule of compliance for the more stringent limit has not been included in the permit because the permittee has demonstrated that they are already able to meet the new limit. Please see Item #13.C.3 for additional information.

3. Nitrates plus Nitrites as Nitrogen monitoring and reporting requirements have been added to the permit. This parameter has been included in the permit based on Appendix D of the CPP and are normally included in permits for major municipal dischargers.
4. Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide limits have been added to the permit because the permittee has demonstrated reasonable potential for violations of the water quality standards. See Item #13.E of this Fact Sheet for additional information. A schedule of compliance for these limits has been included in the permit. See Item #18 of this Fact Sheet for additional information.
5. Sub-lethal WET limits for *P. promelas* and *C. dubia* have been added to the permit along with a schedule of compliance. See Item #15 and #18 of this Fact Sheet for additional information.

No other permit limits are being changed, added, or removed with this permit renewal.

B. Anti-backsliding

The permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(1)]. 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 40 CFR 122.44 (1)(2)(i).

The permit maintains the requirements of the previous permit with the exception of the NH₃-N limits for the month of April. These limits have been changed based on the temperature data gathered during the term of the previous permit. Site specific temperature data was not available when the previous permit was issued. This change does not violate the anti-backsliding standards of 40 CFR 122.44(1) since it is based on new information. See 40 CFR 122.44(1)(2)(i)(B)(I).

C. Limits Calculations

1. Mass limits:

In accordance with 40 CFR 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 CFR 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

The calculation of the loadings (lbs per day) uses a design flow of 7 MGD and the following equation:

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

2. 7-Day Average Limits:

The 7-Day Average limits for CBOD5 and TSS are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

$$\text{7-Day Average limits} = \text{Monthly average limits} \times 1.5$$

The 7-Day Average NH3-N limits are based on the requirements of Reg. 2.512.

The 7-Day Average limits for FCB are based on Reg. 2.507.

The 7-Day Average limits for Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide were calculated in accordance with the procedures set forth in Appendix D of the CPP.

3. Ammonia-Nitrogen (NH3-N):

The average pH of the effluent for the month of April and the month of May was calculated using all of the pH data from the applicable month during the term of the previous permit. It is appropriate to use average pH values for the determination of NH3-N toxicity permit limits because Reg. 2.512(D) states that the pH values will be the ecoregion mean value from least-disturbed stream data. The pH scale is logarithmic. Therefore, the average cannot be determined by adding all of the pH values together and dividing by the number of values. An average pH must be calculated using the following formula:

$$\text{avg. pH} = -\log_{10}[(\sum C_i)/(n)]$$

where:

C = the concentration of the hydronium ion (based on pH); and
n = the number of measurements.

The average pH values for the months of April and May were determined independently of the other month. The average pH for the month of April was determined to be 6.8 s.u while it was 6.4 s.u. for the month of May. These values are not significantly different from the pH of 6.6 s.u. normally used for dischargers in the Gulf Coastal Plains Ecoregion. The use of site-specific average pH values is

appropriate for this permit since the temperatures used to determine permit limits are also site-specific data.

Reg. 2.512(D) requires the temperature used for the months of April and May when determining the appropriate NH₃-N toxicity based permit limit to be the standard contained in Reg. 2.502. Since the standard is a maximum temperature, its use in determining the toxicity based NH₃-N limits will be protective of water quality.

At the permittee's request in the previous permit, the Department allowed for the use of a different temperature in determining the limits for April and May but required the permittee to take the temperature of the effluent a minimum of three times per week. This was done in order to have data to evaluate the appropriateness of the toxicity based NH₃-N limits for April and May. The previous permit also stated that the arithmetic mean would be used to determine if 22°C is an appropriate temperature to calculate the NH₃-N toxicity limits for April and May.

When the data from 2009 through 2013 is considered, the average temperature for April is 21.1°C (median 22°C) and the average temperature for May is 26.0°C (median 26°C). However, there was a wide range of temperatures reported for each month: a 16°C difference between the high temperature of 27°C and the low temperature of 11°C reported for April with a 13°C difference reported in May which had a high temperature of 32°C and a low temperature of 19°C.

The permittee is only allowed to discharge under this permit in the event an emergency or maintenance condition prevents discharge to the joint pipeline under NPDES Permit No. AR0049743. This could create conditions in which discharges only occur when the effluent is warmer than average.

Due to the significant differences in temperature, limits set at the average temperature are not appropriate. The NH₃-N toxicity standards decrease approximately 10% with every 2°C increase in temperature. Toxic conditions could be present in the effluent due to NH₃-N levels but still fall within permit limits if the temperature is higher than the average. For instance, if the May NH₃-N limits are set at 4.42 mg/l using the average temperature of 26.0°C but the temperature is actually 30°C (or higher as the facility has reported), the NH₃-N levels would need to be 2.32 mg/l or lower to prevent toxic conditions in the receiving stream.

The lower and higher temperatures present during these months may be taken into account through a tiered approach. The NH₃-N limits will be dependent upon the temperature taken when the composite sample is being collected. The tiered approach will allow the permittee to have NH₃-N limits which are protective of the water quality of the receiving stream while not be more stringent than necessary.

A total of five tiers for each month has been included in the permit. The limits for the first tier are based on the average temperature for the month of April. The limits for the third tier are based on the average temperature for the month of May. The fifth tier limits are based on the ecoregion temperature standard of 30°C. The second and fourth tier limits are mid-way between the first and third tiers and the third and fifth tiers, respectively.

Parameter	AML, lb/day	AML, mg/l	7-day Avg., mg/l
Ammonia Nitrogen (NH ₃ -N)			
April (avg. pH = 6.8 s.u.)			
Effluent Temperature ≤ 21.1°C	240.53	4.12	10.3
21.2°C < Effluent Temperature ≤ 24.0°C	199.66	3.42	8.55
24.1°C < Effluent Temperature ≤ 26.0°C	175.14	3.00	7.50
26.1°C < Effluent Temperature ≤ 28.0°C	154.12	2.64	6.63
28.1°C ≤ Effluent Temperature	135.44	2.32	5.80
May (avg. pH = 6.4 s.u.)			
Effluent Temperature ≤ 21.1°C	258.04	4.42	7.5*
21.2°C < Effluent Temperature ≤ 24.0°C	213.67	3.66	7.5*
24.1°C < Effluent Temperature ≤ 26.0°C	187.98	3.22	7.5*
26.1°C < Effluent Temperature ≤ 28.0°C	165.22	2.83	7.08
28.1°C ≤ Effluent Temperature	145.37	2.49	6.23

*Limit based on maintaining the DO standard in the receiving stream since it is more stringent than the toxicity based limit.

The more stringent of the toxicity based limits and the limits obtained from the MultiSMP model, i.e., those based on maintaining the DO standard in the receiving stream will be placed in the permit. The 7-day average DO-based NH₃-N limits for the first three tiers for May are more stringent than the toxicity criteria based limits. All other limits are based on the toxicity criteria contained in Reg. 2.512.

Discharges under this permit are expected to now be infrequent in nature since the effluent will be discharged directly to the Ouachita River through the El Dorado Joint Pipeline. Due to the infrequent nature of the discharges, the permittee will often conduct the WET testing required under this permit if a discharge does occur in April or May. Also, the Department has reserved the right to condition the diversion of wastewater from Outfall 010S in NPDES Permit No. AR0049743 to Outfall 001 under NPDES Permit No. AR0033723 as reasonably necessary to protect human health and the environment. This would include limits based on higher than normal pH in the effluent.

Upstream flow and temperature monitoring and reporting requirements have been added to the permit. The tiers were based on the assumption that there is no water other than the effluent in the receiving stream since the 7Q10 is 0 cfs. With no background flow, the effluent comprises the entire stream and the effluent temperature would therefore be the stream temperature. However, stream flows are typically higher than the 7Q10 during the months of April and May. The temperature in the receiving stream may be different from the effluent temperature which would result in the need for different permit limits to protect water quality.

The upstream monitoring is required to be conducted even if the facility is not discharging under this permit so that information will be available at the time of the next permit renewal.

D. 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 208 Plan has been revised to change the NH₃-N limit for the months of April and May to 4.12 mg/l and 3.22 mg/l, respectively.

E. Priority Pollutant Scan (PPS)

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:

Parameter	Value	Source
Flow = Q	7 MGD = 10.82 cfs	Application
7Q10	0 cfs	U.S.G.S.
TSS	5.5 mg/l	CPP
Hardness as CaCo3	31 mg/l	CPP
pH	6.89 s.u.	OUA0005, 3/8/2011

The following pollutants were reported above the required MQL. Only one sample result for Bis(2-ethylhexyl)phthalate was available. All other reported concentrations were the highest of over 20 test results. The sample results for the metals were submitted as a requirement of their pretreatment program.

Pollutant	Concentration Reported, µg/l	MQL, µg/l	Reasonable Potential? (Y/N)
Total Recoverable Arsenic	2.1	0.5	N
Total Recoverable Copper	19	0.5	Y
Total Recoverable Lead	1.7	0.5	N
Total Recoverable Mercury	0.0077	0.005	N
Total Recoverable Nickel	40	0.5	N
Total Recoverable Selenium	5.1	5	Y
Total Recoverable Silver	1.3	0.5	N
Total Recoverable Thallium	1.6	0.5	N
Total Recoverable Phenols	19	5	N
Total Recoverable Cyanide	20	10	Y
Bis(2-ethylhexyl)phthalate*	11.4	10	N

*Only sample result available.

(a) Aquatic Toxicity

Pollutant	Concentration (C _e) µg/l	IWC µg/l	Water Quality Standards (WQS)	
			Acute, µg/l	Chronic, µg/l
Total Recoverable Copper	19	19	14.79	10.93

Pollutant	Concentration (C _e) µg/l	IWC µg/l	Water Quality Standards (WQS)	
			Acute, µg/l	Chronic, µg/l
Total Recoverable Selenium	5.1	5.1	20	5
Total Recoverable Cyanide	20	20	22.36	5.2

Instream Waste Concentrations (IWC's) have been calculated in the manner described in the CPP.

As can be seen in the table above, the calculated level for the following pollutants are sufficiently higher than the water quality standards. Therefore, the limits for those pollutants are calculated in the manner described in the CPP and are included in the permit as follows. Calculations may be found at http://www.adeg.state.ar.us/ftproot/Pub/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0033723_PPS_20130607.pdf.

Final Limits		
Pollutant	AML, µg/l	DML, µg/l
Total Recoverable Copper	12.20 µg/l	24.48 µg/l
Total Recoverable Selenium	5.58 µg/l	11.20 µg/l
Total Recoverable Cyanide	5.80 µg/l	11.64 µg/l

14. WHOLE EFFLUENT TOXICITY.

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 established for assessing and protecting against impacts upon water quality and designated uses 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.

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 the 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 and sub-lethality following Regulations promulgated by 40 CFR 122.44(d)(1)(v). The effluent limitations for lethality (7-day NOEC) are applied at Outfall 001 on the effective date of the permit. The daily average lethality (7-day NOEC) and 7-day minimum lethality sub-lethality (7-day NOEC) value shall not be less than 100% effluent for Outfall 001.

The effluent limitations for sub-lethality (7-day NOEC) are applied at Outfall 001 beginning three years from the effective date of the permit. During the first three years of the permit, the draft permit requires monitoring and reporting only for sub-lethality with no limitations being established. The daily average or sub-lethality (7-day NOEC) and 7-day minimum sub-lethality (7-day NOEC) value shall not be less than 80% 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

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:

$$\text{Critical dilution (CD)} = (\text{Qd}/(\text{Qd} + \text{Qb})) \times 100$$

$$\text{Qd} = \text{Design flow} = 7 \text{ MGD} = 10.8 \text{ cfs}$$

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

$$\text{Qb} = \text{Background flow} = 0.67 \times 0 \text{ cfs} = 0 \text{ cfs}$$

$$\text{CD} = (10.8) / (10.8 + 0) \times 100 = 100\%$$

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 32%, 42%, 56%, 80%, and 100% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 100% effluent. The requirement for chronic WET 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 representative of organisms 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-821-R-02-013, October 2002 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 summarizes toxicity tests submitted by the permittee during the term of the current permit at Outfall 001.

Permit Number:	AR0033723	AFIN:	70-00341	Outfall Number:	001
Date of Review:	4/25/2013	Reviewer:	M. Barnett		
Facility Name:	City of El Dorado-south plant				
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:	None				

Frequency re recommendation by species

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

* WET test for *C. dubia* in the third two month period must take place in June.

TEST DATA SUMMARY

TEST DATE	Vertebrate		Invertebrate	
	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC
9/6/2007	100	100	100	32
12/6/2007	100	100	100	100
1/6/2008	100	100	100	100
2/6/2008	100	100	100	100
3/6/2008	100	100	100	56
6/6/2008	100	100	100	56
9/6/2008	100	100	100	100
12/6/2008	100	100	100	100
1/6/2009	100	100	100	100
2/6/2009			100	100
3/6/2009			100	100
4/6/2009			100	100
5/6/2009	100	100		
6/6/2009	100	100	100	75
8/30/2009	100	100	100	100
12/31/2009	100	100	100	75
1/31/2010			100	100
2/28/2010	100	100	100	100
3/31/2010	100	100	100	100
6/30/2010	100	100	100	56
9/30/2010	100	100	100	100
12/31/2010	100	100	100	100
1/31/2011			100	100
2/28/2011			100	100
3/31/2011	100	100	100	100
6/30/2011	100	100	100	100
7/30/2011			100	75
8/30/2011			56	0
9/30/2011	100	100	100	75
12/31/2011	100	100	100	100
1/31/2012			100	100
2/29/2012			100	56
3/31/2012	100	100	75	0
4/30/2012			100	100
5/31/2012			100	100
6/30/2012	100	100	100	0
7/30/2012	75	75	100	100
8/30/2012	75	75		
9/30/2012	100	100		
11/30/2012	100	100	100	100
12/31/2012	100	100		
1/31/2013	100	100	100	100
2/28/2013			100	100
Failures noted in BOLD				

REASONABLE POTENTIAL CALCULATIONS				
	Vertebrate Lethal	Vertebrate Sub-Lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	75	75	56	31
TU at Min Observed	1.33	1.33	1.79	3.23
Count	30	30	39	39
Failure Count	2	2	2	12
Mean	1.022	1.022	1.029	1.340
Std. Dev.	0.085	0.085	0.135	0.684
CV	0.1	0.1	0.1	0.5
RPMF	1.1	1.1	1.1	1.3
Reasonable Potential	1.467	1.467	1.964	4.194
100/Critical dilution	1.000	1.000	1.000	1.000
Does Reasonable Potential Exist	Yes	Yes	Yes	Yes
PERMIT ACTION				
<i>P. promelas</i> lethal - Limit 100%				
<i>P. promelas</i> sub-lethal - Limit 80% - 3 year compliance schedule				
<i>C. dubia</i> lethal - Limit 100%				
<i>C. dubia</i> sub-lethal - Limit 80% - 3 year compliance schedule				

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

Reasonable potential exists for *P. promelas* and *C. dubia* lethality and sub-lethality. While there were two *P. promelas* sub-lethal failures and twelve *C. dubia* sub-lethal failures, the previous permit did not contain retest requirements for sub-lethal failures or TRE language. 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-lethal limits 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-lethal 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.

15. SAMPLE TYPE AND FREQUENCY.

Requirements for sample type and sampling frequency for existing parameters have been based on the current discharge permit.

The sample type and sampling frequency for NO₃ + NO₂ – N have been based upon the requirements for nutrient monitoring and reporting in other permits for major municipal dischargers. The sample type and sampling frequency for Total Recoverable Copper, and Total Recoverable Selenium have been based on the design flow of the facility and the typical sample type for metals. The sample type for Total Recoverable Cyanide is required to be grab in accordance with 40 CFR 122.21(g)(7)(i) as incorporated by reference in Reg. 6.104(A)(3). The sample frequency for Total Recoverable Cyanide has been based on the design flow of the facility.

The sample type for upstream flow is based on the judgment of the permit writer. The facility is only required to monitor the upstream flow for two months of the year so extensive flow monitoring equipment is not necessary. The sample frequency for upstream flow is based on the frequency for monitoring effluent flow.

The sample type and monitoring frequency for upstream temperature are based on the requirements for effluent temperature.

Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table. This requirement has been added to the permit to insure that the minimum number of required samples are obtained when the permittee is discharging.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	once/day	totalizing meter	once/day	totalizing meter
Upstream Flow				
(April – May)	N/A	N/A	once/day	instantaneous
CBOD5				

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
(May – October)	once/week	24-hr composite	once/week	composite
(November – April)	once/week	24-hr composite	once/week	composite
TSS				
(May – October)	once/week	24-hr composite	once/week	composite
(November – April)	once/week	24-hr composite	once/week	composite
NH3-N				
(April)	once/week	24-hr composite	once/week	composite
(May)	once/week	24-hr composite	once/week	composite
(June – October)	once/week	24-hr composite	once/week	composite
(November – March)	once/week	24-hr composite	once/week	composite
DO				
(May – October)	once/week	grab	once/week	grab
(November – April)	once/week	grab	once/week	grab
FCB				
(April – September)	once/week	grab	once/week	grab
(October – March)	once/week	grab	once/week	grab
Upstream Temperature				
(April – May)	N/A	N/A	three/week	grab
Effluent Temperature				
(April – May)	three/week	grab	three/week	grab
NO ₃ + NO ₂ – N	N/A	N/A	once/month	grab
Total Rec. Cu	N/A	N/A	once/month	composite
Total Rec. Se	N/A	N/A	once/month	composite
Total Rec. CN	N/A	N/A	once/month	composite
pH	once/week	grab	once/week	grab

16. STORMWATER REQUIREMENTS

The permittee has stormwater runoff coverage in the form of a No Exposure Certification. See tracking number ARR00C402.

17. PERMIT COMPLIANCE.

A three-year schedule of compliance has been included in the permit for Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide limits as well as the sub-lethal WET limits for *P. promelas* and *C. dubia*. All of these limits are being included in the permit for the first time. The permittee has not demonstrated that they are able to meet these limits on a consistent basis. Therefore, a three year schedule of compliance has been included in the permit for these parameters in accordance with Reg. 2.106. The permittee will be required to monitor and report the results of the required testing in the interim but will not be required to comply with the final limits until three years from the effective date of the permit.

18. MONITORING AND REPORTING.

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

19. SOURCES.

The following sources were used to draft the permit:

- A. Application No. AR0033723 received 4/2/2013 with all additional information received by 5/28/2013.
- B. Arkansas Water Quality Management Plan (WQMP).
- C. APCEC Regulation No. 2.
- D. APCEC Regulation No. 3.
- E. APCEC Regulation No. 6 which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Reg. 6.104.
- F. 40 CFR Parts 122, 125, 133 and 403.
- G. Discharge permit file AR0033723.
- H. Discharge Monitoring Reports (DMRs).
- I. "Arkansas Water Quality Inventory Report 2008 (305(b))", ADEQ.
- J. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.
- K. Continuing Planning Process (CPP).
- L. Technical Support Document For Water Quality-based Toxic Control.
- M. Inspection Report dated 4/9/2013.
- N. CAO LIS No. 12-167.

- O. E-mail sent to permittee on 08/08/2013 outlining changes to the permit.
- P. E-mail from Mike Tillman to Mo Shafii dated 9/9/2013.
- Q. Letter from Mark Smith to Loretta Reiber, P.E. dated 10/7/2013.
- R. April and May 2013 temperature data submitted 11/6/2013.
- S. pH data for the months of April and May received 1/13/2013.
- T. EPA Region 6 WET Permitting Strategy (May 2005).

20. POINT OF CONTACT.

For additional information, contact:

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**RESPONSE TO COMMENTS
FINAL PERMITTING DECISION**

Permit No.: AR0033723

Applicant: El Dorado Water Utilities – South Plant

Prepared by: Loretta Reiber, P.E.

The following are responses to comments received regarding the subject draft permit number. Responses are developed in accordance with regulations promulgated at 40 C.F.R. §124.17 as incorporated by reference in APCEC Regulation 6.104(A)(5) and APCEC Regulation No. 8, Administrative Procedures and A.C.A. 8-4-203(e)(1)(B)(ii).

Introduction

The above permit was submitted for public comment on 9/13/2013. The public comment period ended on 10/14/2013.

This document contains a summary of the comments that the Arkansas Department of Environmental Quality (hereinafter “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.

The permittee submitted comments regarding 17 issues. The permittee was the only party to comment on the draft permit. Two ADEQ comments follow the permittee’s comments.

Comment 1: The ammonia nitrogen monthly average limit for the month of May was changed in the draft permit based on temperature data gathered during the current permit cycle. A temperature of 27°C was used to determine toxicity based ammonia nitrogen limits for the month of May. The average temperature for data collected from May 2009 through May 2012 is 26.23°C. According to the Discharge Monitoring Report Manual provided on ADEQ’s web site, a value of 26.23°C should be rounded down to 26°C not up to 27°C. The permittee requested that a value of 26°C be used to calculate toxicity based ammonia nitrogen limits for the month of May.

The ammonia nitrogen limits for the month of April were based on a temperature of 22°C from the previous permit. The average temperature for data collected from April 2009 to April 2012 is 21.33°C. The permittee requested a value of 21°C be used to calculate toxicity based ammonia nitrogen limits for the month of April.

Response: Additional temperature data has been received since the draft permit was sent to public notice. Therefore, the average temperatures are no longer 21.33°C and 26.23°C for the months of April and May, respectively. During review of the comments, the Department made the determination that the average pH data as well as the variation in temperatures would need to be taken into account to ensure that the effluent will not be toxic while meeting the permit limits.

The average pH of the effluent for the month of April and the month of May was calculated using all of the pH data from the applicable month during the term of the previous permit. It is appropriate to use average pH values for the determination of NH₃-N toxicity permit limits because APCEC Reg. 2.512(D) states that the pH values will be the ecoregion mean value from least-disturbed stream data. The pH scale is logarithmic. Therefore, the average cannot be determined by adding all of the pH values together and dividing by the number of values. An average pH must be calculated using the following formula:

$$\text{avg. pH} = -\log_{10}[(\sum C_i)/(n)]$$

where:

C = the concentration of the hydronium ion (based on pH); and

n = the number of measurements.

The average pH values for the months of April and May were determined independently of the other month. The average pH for the month of April was determined to be 6.8 s.u while it was 6.4 s.u. for the month of May. These values are not significantly different from the pH of 6.6 s.u. normally used for dischargers in the Gulf Coastal Plains Ecoregion. The use of site-specific average pH values is appropriate for this permit since the temperatures used to determine permit limits are also site-specific data.

At the permittee's request in the previous permit, the Department based the NH₃-N toxicity limits on the ecoregion pH of 6.6 s.u. and a temperature of 22°C. The permittee was required to take the temperature of the effluent a minimum of three times per week in order to have data to evaluate the appropriateness of the toxicity based NH₃-N limits for April and May. The previous permit also stated that the arithmetic mean would be used to determine if 22°C is an appropriate temperature to calculate the NH₃-N toxicity limits for April and May.

When the data from 2009 through 2013 is considered, the average temperature for April is 21.1°C (median 22°C) and the average temperature for May is 26.0°C (median 26°C). However, there was a wide range of temperatures reported for each month: a 16°C difference between the high temperature of 27°C and the low temperature of 11°C reported for April with a 13°C difference reported in May which had a high temperature of 32°C and a low temperature of 19°C.

The permittee is only allowed to discharge under this permit in the event an emergency or maintenance condition prevents discharge to the joint pipeline under NPDES Permit No. AR0049743. This could create conditions in which discharges only occur when the effluent is warmer than average.

Due to the significant differences in temperature, limits set at the average temperature are not appropriate. The NH₃-N toxicity standards decrease approximately 10% with every 2°C increase in temperature. Toxic conditions could be present in the effluent due to NH₃-N levels but still fall within permit limits if the temperature is higher than the average. For instance, if the May NH₃-N limits are set at 4.42 mg/l using the average temperature of 26.0°C but the

temperature is actually 30°C (or higher as the facility has reported), the NH₃-N levels would need to be 2.32 mg/l or lower to prevent toxic conditions in the receiving stream.

The lower and higher temperatures present during these months may be taken into account through a tiered approach. The NH₃-N limits will be dependent upon the temperature taken when the composite sample is being collected. The tiered approach will allow the permittee to have NH₃-N limits which are protective of the water quality of the receiving stream while not be more stringent than necessary.

A total of five tiers for each month has been included in the permit. The limits for the first tier are based on the average temperature for the month of April. The limits for the third tier are based on the average temperature for the month of May. The fifth tier limits are based on the ecoregion temperature standard of 30°C. The second and fourth tier limits are mid-way between the first and third tiers and the third and fifth tiers, respectively.

Parameter	AML, lb/day	AML, mg/l	7-day Avg., mg/l
Ammonia Nitrogen (NH ₃ -N)			
April (avg. pH = 6.8 s.u.)			
Effluent Temperature ≤ 21.1°C	240.53	4.12	10.3
21.2°C < Effluent Temperature ≤ 24.0°C	199.66	3.42	8.55
24.1°C < Effluent Temperature ≤ 26.0°C	175.14	3.00	7.50
26.1°C < Effluent Temperature ≤ 28.0°C	154.12	2.64	6.63
28.1°C ≤ Effluent Temperature	135.44	2.32	5.80
May (avg. pH = 6.4 s.u.)			
Effluent Temperature ≤ 21.1°C	258.04	4.42	7.5*
21.2°C < Effluent Temperature ≤ 24.0°C	213.67	3.66	7.5*
24.1°C < Effluent Temperature ≤ 26.0°C	187.98	3.22	7.5*
26.1°C < Effluent Temperature ≤ 28.0°C	165.22	2.83	7.08
28.1°C ≤ Effluent Temperature	145.37	2.49	6.23

*Limit based on maintaining the DO standard in the receiving stream since it is more stringent than the toxicity based limit.

The more stringent of the toxicity based limits and the limits obtained from the MultiSMP model reviewed on May 31, 2013, i.e., those based on maintaining the DO standard in the receiving stream will be placed in the permit. The 7-day average DO-based NH₃-N limits for the first three tiers for May are more stringent than the toxicity criteria based limits. All other limits are based on the toxicity criteria contained in APCEC Reg. 2.512.

Discharges under this permit are expected to now be infrequent in nature since the effluent will be discharged directly to the Ouachita River through the El Dorado Joint Pipeline. Due to the infrequent nature of the discharges, the permittee will often conduct the WET testing required under this permit if a discharge does occur in April or May. Also, the Department has reserved the right to condition the diversion of wastewater from Outfall 010S in NPDES Permit No. AR0049743 to Outfall 001 under NPDES Permit No. AR0033723 as reasonably necessary to

protect human health and the environment. This would include limits based on higher than normal pH in the effluent.

Upstream flow and temperature monitoring and reporting requirements have been added to the permit. The tiers were based on the assumption that there is no water other than the effluent in the receiving stream since the 7Q10 is 0 cfs. With no background flow, the effluent comprises the entire stream and the effluent temperature would therefore be the stream temperature. However, stream flows are typically higher than the 7Q10 during the months of April and May. The temperature in the receiving stream may be different from the effluent temperature which would result in the need for different permit limits to protect water quality.

The upstream monitoring is required to be conducted even if the facility is not discharging under this permit so that information will be available at the time of the next permit renewal. Ecoregion values will be used at the time of the next permit renewal if the required data is not gathered.

Comment 2: The minimum required DO levels were changed from monthly average minimums to instantaneous minimums in the draft permit. The explanation in the Fact Sheet is vague as to how an instantaneous minimum versus an average minimum will insure that the facility is not causing an impairment in the receiving stream due to low DO levels. The permittee requested clarification as to the change so they are insured that this limitation change is based on regulatory requirements and science and not simply based on a policy change. The permittee also requested that the limits in the final permit be changed back to monthly average minimums.

Response: The minimum required DO level will now be expressed as a monthly average based on the following reasons:

- Discharges under this permit are expected to be infrequent in nature since the effluent is being discharged directly to the Ouachita River via the El Dorado Joint Pipeline under NPDES Permit Nos. AR0049743 and AR0050296.
- A Dissolved Air Flotation (DAF) unit is part of the wastewater treatment system which must be used when the permittee is discharging. Although the purpose of the DAF unit is to aid in the removal of solids, use of the DAF unit will increase DO in the wastewater.

The DMR data submitted under this permit will be reviewed. If the effluent limits are not met or the water quality standards in the receiving stream are not met, the Department may reopen the permit to require that the DO level be met on an instantaneous basis.

Comment 3: Lead limitations have been added to the draft permit. In calculating reasonable potential for lead, a value of 5 µg/l was used as the highest concentration of a twenty point data set. According to Part 13.E of the Fact Sheet, this value is the highest reported concentration of over 20 test results reported on the annual pretreatment reports. The 5 µg/l value was analyzed and reported for the first quarter of 2008. The current permit was issued on August 31, 2008. The highest reported value within the term of the current permit was 1.7 µg/l on 8/17/2009. The permittee requested that data associated with the last permit cycle be used in calculations as they are more representative of the current effluent discharge. If reasonable potential does not exist at

1.7 µg/l, the permittee requested that the lead limit and all associated conditions be removed from the final permit.

Response: The Department has made the determination to no longer use the value of 5 µg/l to determine reasonable potential for lead. This decision has been made because the data obtained since the first quarter of 2008 is significantly lower than 5 µg/l. Reasonable potential for water quality violations is not demonstrated at the next highest reported level of 1.7 µg/l. Therefore, the lead limits will be removed from the permit.

Comment 4: The monthly average permit limit for cyanide is listed as 5.80 µg/l in Part IA of the draft permit. The required MQL for cyanide is specified as 10 µg/l in Part II of the permit, which is higher than the permit limit. Please provide clarification on this matter.

Response: Since reasonable potential for water quality violations was demonstrated for this parameter, limits must be included in the permit in order to comply with 40 CFR 122.44(d)(1)(i) as incorporated by reference in APCEC Reg. 6.104(A)(3). The permit limits were calculated in accordance with the procedures set forth in Appendix D of the CPP and the water quality standard set forth in APCEC Reg. 2.508. The maximum allowable MQL is 10 µg/l and is based on the MQL for the approved EPA test method for this parameter. Appendix D.IV.B of the CPP states: "If the calculated permit limit for any pollutant is less than the MQL, the calculated value is used as the permit limit and a footnote is added to the limit which says that the method MQL will be used to determine compliance. To do this, the permittee will need to use the appropriate test method."

Two "No Data Indicator" (NODI) codes are available for use when the test results are below the MQL or below the detection level. When the permit limit is less than the MQL, the permittee may report "NODI = Q" if the parameter was detected but was below the MQL. If the parameter is not detected, the permittee may report "NODI = B." These codes will be added as Footnote 9 to the final permit limits in Part IA of the permit.

Comment 5: Data from annual pretreatment reports was used to determine reasonable potential for cyanide, selenium, and copper. Clean sampling techniques were not used during the metals testing required under the pretreatment program. The permittee stated that they thought this might have caused some of the reported levels to not be truly representative of the effluent quality. The permittee requested that a condition be added to Part II of the permit stating that the facility will use clean sampling techniques during the schedule of compliance period and that if reasonable potential is not demonstrated after the collection of 10 samples, the cyanide, selenium, and copper limits and all associated conditions will be removed from the permit without a major modification.

Response: The information used in developing the permit limits was submitted to the Department by the permittee with no indication that the data may not be truly representative of the discharge. Therefore, it was used as true and accurate data when the permit was prepared. The Department recommends, but does not require that clean sampling techniques be used when possible in order to obtain the most accurate test results.

40 CFR 122.63 as incorporated by reference in APCEC Reg. 6.104(A)(3) lists the specific actions which may be done through a minor modification. Removal of a permit limit, even if the possibility of removing it at a future date is mentioned in the draft permit sent to public notice, is not one of the actions listed. Therefore, removal of the permit limit must be done at the time of permit renewal or through a major modification of the permit.

The Department will add language to Condition 8 of Part II stating that if the permittee can demonstrate that reasonable potential does not exist for Cyanide, Selenium, or Copper, an application to modify the permit may be submitted. Any application to modify the permit must be received no later than 24 months from the effective date of the permit for review and consideration. A minimum of 24 samples must be used in this determination. It is important to note that if any Cyanide, Selenium, or Copper test result is above the final monthly average limit for that parameter, a major modification to remove the parameter in question will not be granted. It is important to note that if a result is above the monthly average limit for one parameter, the Department will still consider modification requests for the other parameters.

The permittee may use data for effluent discharged to the joint pipeline under AR0049743 since monthly testing for these metals is required under that permit and the effluent is that which would otherwise be discharged under this NPDES permit. It is important to note that submittal of a permit application requesting removal of the cyanide, selenium, or copper limits is not a guarantee that the limits will be removed.

Comment 6: The Fact Sheet lists the CPP as the justification for phosphorous being included in the permit. The CPP is not a regulation but an implementation document. Phosphorous sampling was included in the last permit in the “Other Conditions” section. It was the permittee’s understanding that the requirement was associated with collecting data for the use in developing a nutrient plan. The permittee collected this data during the previous permit cycle and see no reason at this point to continue to collect additional data. The permittee requested that the sampling requirement for phosphorous be removed from the permit.

Response: Although the CPP is not a regulation, it is a document required by 33 U.S.C. § 1313(e)(1) (§303(e) of the Clean Water Act), 40 CFR 123.25(b) as incorporated by reference in APCEC Reg. 6.104(A)(4), 40 CFR 130.5, and Ark. Code Ann. § 8-4-208(a). The purpose of the CPP is to describe the principal management processes of the state’s water quality management programs including how the water quality regulations will be implemented in NPDES permits.

It is the Department’s understanding that the effluent discharged from EDWU’s South Plant will be routed to the Joint Pipeline except if there is a maintenance or emergency event occurring. Total Phosphorous monitoring and reporting requirements are included in EDWU’s permit to discharge to the Joint Pipeline (NPDES Permit No. AR0049743). Since future discharges under NPDES Permit No. AR0033723 are expected to be infrequent and five years of data already exists for this discharge location, the Total Phosphorous monitoring and reporting requirements will be removed from the permit.

Comment 7: The Fact Sheet lists the CPP as the justification for nitrates plus nitrites as nitrogen being included in the permit. As stated in Comment 6, the CPP is not a regulation but an implementation document. The permittee agrees to collect this data. However, the permittee requested that the requirement be included in Part II of the permit instead of Part IA. This will allow the data to be collected but will also allow for the requirement to be removed when feasible. The permittee also requested that the monitoring frequency be reduced to once per month. The permittee also noted that, as a reason for reduced monitoring frequency, this parameter is not of concern in regards to aquatic toxicity and its impact on the environment is based on long term effects as reflected in nutrient modeling protocols.

Response: The monitoring frequency for nitrates plus nitrites as nitrogen will be reduced to once per month as requested since that is the frequency normally given to major municipal dischargers.

The requirements, which are being included for the first time in the permit with this renewal, will not be placed in Part II of the permit. Inclusion of this parameter in Part IA does not have an effect on the Department's ability to remove the requirement at a later date if warranted. Removal of a parameter from a permit is based on the levels of that parameter in the effluent relative to any standards (water quality, drinking water, etc.), the condition of the receiving stream (i.e., is the receiving stream on the 303(d) list for the parameter in question or is there an applicable TMDL), etc. The removal of the requirements for nitrates plus nitrites as nitrogen would need to be done in accordance with 40 CFR 122.44(l) as incorporated by reference in APCEC Reg. 6.104(A)(3) and §§ 303(d)(4) and 402(o)(2) of the Clean Water Act regardless of whether the requirements are in Part IA or Part II of the permit.

Comment 8: The permittee is unclear as to why the overflows and overflow volume have been added to Part IA. These are not effluent characteristics. Condition No. 5 of Part II of the permit is a more appropriate place for this reporting condition.

Response: The permittee has been submitting the information regarding sanitary sewer overflows (SSOs) in tabular format with the required DMRs. Once this information is reported on the DMR, the permittee will no longer be required to submit the tabular report. The submittal requirement for the SSOs is being added to the DMRs for all municipal permits as they are renewed in order to ensure that the data is submitted.

Part IA of the permit is for effluent limits and monitoring requirements. Since the number of overflows and the volume of those overflows is a monitoring requirement, the reporting requirement for these parameters has been included in Part IA. Part II of the permit is for conditions which detail specific reporting requirements or test conditions for the parameters included in Part IA of the permit as well as other facility specific conditions. For instance, Condition No. 5 of Part II (SSO Reporting Requirements) outlines how the SSOs must be reported on the DMRs.

Ark. Code Ann. § 8-4-216(a) requires permittees to submit information to the Department which is necessary to determine compliance with the terms and conditions of the permit. Reporting the SSO information on the DMRs will enable the Department to better assess if the reports required

by Part III, Section D, Item #6 are being submitted and if those reports are accurate. It is important to note that the Department can require information listed in Part II – Other Conditions of the permit to be reported on the DMR.

Comment 9: Condition No. 2 of Part II discusses the requirement that POTWs must maintain no less than 85% 30-day average removal of CBOD5 and TSS. The condition also requires the influent and effluent to be sampled at least once per year and the percent removal be calculated. The permittee requested that this condition be removed from the permit since the facility utilizes advanced treatment equipment and practices and feels that this condition is not applicable.

Response: The requirements for the 30-day average % removal for CBOD5 and TSS are contained in 40 CFR 133.102(a)(4)(iii) and 40 CFR 133.102(b)(3), respectively, as incorporated by reference in APCEC Reg. 6.104(A)(8). This 85% requirement has been continued from the previous permit. The Department recognizes that this facility uses advanced treatment. However, there are no exemptions from 40 CFR 133 in the event that a facility uses advanced treatment. Therefore, the percent removal requirement will remain in the permit. The influent testing requirement is required to demonstrate compliance with the permit condition. While the frequency of this testing is based on the judgment of the Department, 40 CFR 122.44(i)(2) as incorporated by reference in APCEC Reg. 6.104(A)(3) requires that the monitoring frequency be a minimum of once per year.

Comment 10: Condition No. 6 of Part II discusses the requirement to implement BMPs for the facility along with the collection system to prevent or reduce pollution from storm water runoff, spills or leaks, sludge or water disposal, or drainage from raw sewage. This condition appears to be unnecessary and redundant. Stormwater runoff from this facility is covered under the Industrial General Stormwater Permit (IGP) as a No Exposure Exclusion (see tracking number ARR00C041). Standard Conditions in Part III of the permit cover the proper operation and maintenance of the facility, toxic substances, as well as sludge practices. The permittee requested that this condition be removed from the permit.

Response: The facility's coverage under the IGP applies only to the physical location of the wastewater treatment plant and only to stormwater. Condition No. 6 applies to the collection system as well as potential spills, leaks, sludge or water disposal and drainage from raw sewage at the wastewater treatment plant which could carry pollutants not limited in the permit. 40 CFR 122.44(k) as incorporated by reference in APCEC Reg. 6.104(A)(3) allows for the use of BMPs to control or abate the discharge of pollutants in lieu of numeric permit limits. Due to the differences in coverage, Condition No. 6 will remain unchanged in the permit.

Comment 11: Item 10 of Part II of the permit states “the permittee must also vary the days of the week on which the samples are taken...” does not allow the completion of 3 composite samples with adherence to the holding times stipulated in the WET test protocols. Please clarify if this condition applies to the WET testing requirements.

Response: Item 10 of Part II of the permit applies only to the temperature monitoring requirements. It does not apply to WET testing. A sentence will be added to the referenced condition clarifying that it only applies to temperature.

Comment 12: Item No. 13.A of the Fact Sheet should be modified to remove any references to the joint pipeline permit, NPDES Permit No. AR0050296. NPDES Permit No. AR0049743 is El Dorado Water Utilities' permit to discharge to the joint pipeline.

Response: The reference to AR0050296 was made in Item No. 13.A of the Fact Sheet because the permittee had not yet begun to discharge to the joint pipeline at the time this NPDES Permit was sent to public notice. The reference was not intended to imply that the results of nutrient testing under this permit would be used to determine compliance with AR0049743 and AR0050296. The reference will be removed as requested.

Comment 13: Condition No. 9.3.d.i of Part II of the permit states that a composite sample for WET testing shall consist of a minimum of 12 sub-samples gathered at equal time intervals during a 24-hour period. In the current permit, a 24-hour composite sample for WET testing consists of a minimum of 4 effluent samples collected at equal time intervals representative of a 24-hour operating day.

The definition provided in Condition No. 9.3.d.i also differs from the definition of "composite sample" provided in Condition No. 8 of Part IV of the permit. Please provide clarification on this issue.

Response: A composite sample of a minimum of 4 effluent portions collected at equal time intervals representing a 24-hour operating period is acceptable for WET testing. Condition No. 9.3.d.i will be revised to what was present in the previous permit.

Comment 14: In regards to the fathead minnow WET limits, the determination of reasonable potential (RP) is based on 2 of 30 WET test failures during the period of September 2007 through February 2013. The minimum NOEC for both of the failed tests was 75% effluent, and demonstrated that RP for instream toxicity did not exist during this monitoring period although the calculations determined otherwise. As reported on the DMRs submitted at the time of the WET test failures, the hardness values of the discharge were characteristic of ultra-soft waters (hardness = 7.7 – 8.9 mg/l as CaCO₃). These hardness values were approximately 1/3 that of the control and lab culture hardness values. Ultra-low hardness has been documented to adversely impact WET test results. Ultra-low hardness of the effluent is not impacted/modified through the wastewater treatment system used by El Dorado Water Utilities at this facility.

Since the historical record demonstrated there is no RP for instream toxicity, a sub-lethal permit limit for the fathead minnow is not warranted and should be replaced with monitoring and reporting requirements which were in the previous permit.

Also, Part II, Item No. 5 of the permit and Page 22 of the Fact Sheet stipulate that effluent dilutions above 75% effluent acknowledges the difficulty of resolving toxicity and/or identifying toxicants responsible for sub-lethal effects in effluent concentrations greater than 75% effluent.

Response: The Department is unsure how failing to pass a WET test at the critical dilution (100%) “demonstrated that a reasonable potential for instream toxicity did not exist during this monitoring period”. According to Part III.8.1.b of the current permit; “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.”

Suspected ultra-low hardness of influent effects to a toxicity test can be investigated by side by side tests. Side by side WET testing of as-discharged effluent and effluent adjusted to the ecoregion hardness value allows for the investigation of whether a WET test failure is due to an actual toxic characteristic of the effluent or to only the low hardness of the effluent. At this time, ultra-low hardness effects cannot be verified due to a lack of side by side WET tests.

According to 40 C.F.R. 122.44(d)(i) as incorporated by reference in APCEC Reg. 6.104(A)(3), limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.

APCEC Reg. 2.409 states that “Discharges shall not be allowed into any waterbody which, after consideration of the zone of initial dilution, the mixing zone and critical flow conditions, will cause toxicity to human, animal, plant or aquatic life or interfere with normal propagation, growth, and survival of aquatic biota.”

According to EPA Region 6 WET Permitting Strategy (May, 2005), “If, during permit development, reasonable potential is found to exist for lethal and/or sub-lethal effects, WET limits will be included in the permit. A compliance schedule of up to three years duration can be included.”

According to the current CPP, Appendix D. part III.F Permit Limitations for Whole Effluent Toxicity, “...a finding of reasonable potential based on several isolated toxic events.... A schedule of compliance may also be included in the permit.”

Therefore, the sub-lethal WET limits for *P. promelas* will remain in the permit.

Comment 15: The summary of the water flea results does reflect failures between 100% critical dilution and the control in 12 of the 39 tests, only 2 of which were lethality endpoint failures. 70% of the WET tests passed the sub-lethal endpoint in 100% effluent. As provided in the comments section of the DMRs when submitting the test results, the ultra-low hardness of the effluents was often identified on the potential cause for the test failures. A review of the WET test failures for the period document the typical effluent hardness ranged from 10 – 17 mg/l as CaCO₃. The hardness values during the permit period typically ranged from 21 – 35 mg/l as CaCO₃ for the WET tests that passed the sub-lethal endpoints of reproduction.

The difference in water hardness is highly associated with the pass-fail history of the discharge. The water hardness is not a factor affected by the treatment process. On the occasion where

there was lethality, the cause was apparent – low pH due to an operational issue, which was reported and corrected.

Given the WET test history, when test failures in the sub-lethal endpoint are clearly associated with ultra-low hardness and not an instream concentration, there is no basis for a sub-lethal *C. dubia* limit.

Response: The Department is unsure how failing to pass 12 sub-lethal *C. dubia* WET test endpoints at the critical dilution (100%) supports the statement “The WET test history of the City South discharge does not represent a ‘...significant unaddressed toxic risk’”.

Although the second part of the table (page 5) in Part 1, Section A of the current permit states once per quarter, footnote numbers 6 and 7 state: “6. The WET test for *Ceriodaphnia dubia* in the second calendar quarter must take place during the month of June.” and “7. One WET test per month is required for *Ceriodaphnia dubia* and one WET test per quarter is required for *Pimephales promelas*”.

In the current permit, the tables on pages 6 &7 and 8& 9 and pages 21 &22 of the Fact Sheet state a WET testing frequency for *C. dubia* of January, February, March, & June: Monthly, July – December: Quarterly for a total of 6 tests per year.

Suspected ultra-low hardness of influent effects to a toxicity test can be investigated by side by side tests. Side by side WET testing of as-discharged effluent and effluent adjusted to the ecoregion hardness value allows for the investigation of whether a WET test failure is due to an actual toxic characteristic of the effluent or to only the low hardness of the effluent. At this time, ultra-low hardness effects cannot be verified due to a lack of side by side WET tests.

The Department is unable to verify the reporting and correcting of low pH due to an operation issue which was corrected. An October 18, 2011 letter notes the *C. dubia* lethal failure yet gives no explanation. A July 24, 2012 letter notes the *C. dubia* lethal failure yet gives no explanation.

Therefore, the sub-lethal *C. dubia* limits will remain in the permit.

Comment 16: The proposed frequency for the water flea WET testing is once per two months. This is excessive given the requirement for monthly testing should the test fail at or below the critical dilution as stipulated in Paragraph 2 on page 10 of Part II and the requirement for a TRE on Page 11 of part II.

The proposed frequency is not supported by the Post-third round WET frequencies where “All major dischargers and those minor dischargers specifically identified by EPA or the State permitting authority (based on available information on a case-by-case basis) as posing a significant unaddressed toxic risk, will be required to perform whole effluent toxicity testing at a frequency of once per quarter.... for the first year of a new or reissued permit.” The WET history of the South Plant does not represent a “significant unaddressed toxic risk” but is still required to monitor at a frequency greater than quarterly.

Although the rationale states that the toxicity testing frequency may be twelve per year, there is no requirement that the proposed frequency be applied. The rationale fails to recognize that there were only 2 lethal failures over the past 5 years. The sub-lethal failures have not been significant or persistent according to the definition provided by the Department in the previous permit requiring the development and implementation of the sub-lethal study plan.

Response: During the previous permit cycle 10 sub-lethal *C. dubia* failures were reported. During the current permit cycle 12 sub-lethal *C. dubia* failures were reported. Since the WET testing records were reviewed on April 25, 2013, sub-lethal *C. dubia* test failures have been reported for March, May, and June of 2013. Additionally, it should be noted that sub-lethal *C. dubia* test failures have been reported for June tests in 2008, 2009, 2010, 2012, and 2013.

Since a reduction in the frequency of sub-lethal failures has not occurred, revising the WET testing frequency is not appropriate at this time.

For information concerning the commenter's assertion that the sub-lethal failures are not significant or persistent, please see the response to comment 15.

Comment 17: It is proposed that the 75% dilution be replaced with 80%. It is unclear as to the justification for the modification as discussed in Item 8.1.a in Part II of the permit and Page 19 of the Fact Sheet. The EPA Region 6 WET permitting strategy (May 2005) identifies 75% as the point above which toxicants responsible for sub-lethal effects are problematic for resolution. The 75% dilution should therefore be retained. Also, the Department does not provide justification for the proposed change to the dilution series except for a reference to the CPP. However, the specific justification for the change was not provided in the draft permit or Fact Sheet. In addition, the CPP has not been made available for review nor, according to ADEQ water division personnel, has it been "approved" by EPA. If this is the basis for the proposed modification of the dilution series, the permit should have the opportunity to evaluate it.

Response: The currently implemented version of the CPP was approved by EPA in 2000. The draft revised CPP has not yet been approved by EPA, and is therefore not being implemented.

Although not specifically titled as such, the justification for the revision of the dilution series is present in the last paragraph of No. 15 of the Fact Sheet.

"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."

Based on the above noted EPA policy, in lieu of a 100% effluent limit for *C. dubia* sub-lethality, the permit will include an 80% effluent limit for *C. dubia* sub-lethality.

Generally, dilution series are set based on the 0.75 dilution series table in Appendix D of the CPP. However, due to the sub-lethal limit of 80% it was appropriate to make a modification to the dilution series to remove the standard 75% dilution and add 80% dilution.

ADEQ Comment 1:

Discharges occurring under this permit are now expected to be infrequent in nature since discharges are now routed directly to the Ouachita River via the El Dorado Joint Pipeline. The permit will now contain a condition requiring the testing to be conducted daily during the first discharge of the monitoring period with the total number of tests required not to exceed the frequencies listed in Part IA of the permit. This will ensure that the required samples are taken when a discharge does occur under this permit. This requirement has been included as Footnote #5 under both tables in Part IA of the permit.

ADEQ Comment 2:

The following condition has been added to the permit as Condition No. 13 of Part II. This condition is necessary in the event that the Department must condition the diversion of wastewater as reasonably necessary to protect human health and the environment.

“The permittee shall notify the Department within 24 hours of any emergency or maintenance event that results in diverting wastewater from Outfall 010S in NPDES Permit No. AR0049743 to Outfall 001 permitted under NPDES No. AR0033723. For non-emergency and non-maintenance events that may result in diverting wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723, the permittee must provide notice and an explanation of the anticipated diversion to the Department at least two weeks in advance of any such event. The Department may, at its discretion, condition the diversion of wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723 to as reasonably necessary to protect human health and the environment.”

Part	Draft Permit	Final Permit	Comment #
IA	April NH3-N 4.1/10.1 mg/l, May – 2.9/7.4 mg/l AML lbs/day April – 239.4 lbs/day May – 169.3 lbs/day	5 tiers of NH3-N limits which vary based on temperature. monthly average pH values were used	1
IA	DO is instantaneous minimum	DO now monthly avg. minimum	2
IA	Pb limit in permit	Pb removed from permit	3
II	the permit did not specify that the facility could request a major mod. if they can show there's no RP for Pb when using clean sampling techniques	allows request for major mod. if they can show there's no RP for metals. See Condition No. 8 of Part II of the permit	5
IA	Total Phosphorous in permit	Total Phosphorous has been removed from the permit	6
II	Cond. 10 only applied to temperature but did not specifically state that	Cond. 10 specifically states that it is only applicable to temperature	11
II	composite sample definition in WET language was a minimum of 12 sub-samples gathered at equal time intervals during a 24-hour period	composite sample definition in 9.3.d.i revised to what was in previous permit	13
IA	Permit did not specify when the required samples had to be taken	Permit now specifies that samples must be taken during the first discharge of the monitoring period. See Footnote 5 in Part IA of the permit	ADEQ Comment 1
II	permit did not reference emergency use in regards to pipeline	Cond. 13 added to address emergency use	ADEQ Comment 2
IA	permit did not require upstream flow and temperature monitoring and reporting	permit now requires upstream flow and temperature monitoring and reporting even if not discharging under this permit	1
IA	permit did not contain reporting codes if CN levels are below MQL or detection levels	footnote 9 added to the final limits page (page 6 of Part IA) to incorporate reporting codes for CN when the limits are in effect	4