

Permit Number: AR0034347
AFIN: 27-00022

**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.),

City of Sheridan
Sheridan Wastewater Treatment Facility

is authorized to discharge treated municipal wastewater from a facility located as follows: near the south end of Gatzke Drive, Sheridan, AR 72150 in Grant County. From US Hwy 270 in Sheridan, turn south on Gatzke Drive, go to the end of the cul-de-sac and the facility is located approximately 500 ft to the southeast. The applicant's mailing address is: P.O. Box 486, Sheridan, AR 72150.

Facility Coordinates: Latitude: 34° 18' 13.5" N; Longitude: 92° 23' 21.2" W

Receiving stream:

- Outfall 001: Big Creek, thence to Hurricane Creek, thence to the Saline River, thence to the Ouachita River in Segment 2C of the Ouachita River Basin.
Outfall 002: Hurricane Creek, thence to the Saline River, thence to the Ouachita River in Segment 2C of the Ouachita River Basin.

The permitted outfall is located at the following coordinates:

- Outfall 001: Latitude: 34° 17' 56.5" N; Longitude: 92° 22' 45.0" W
Outfall 002: Latitude: 34° 17' 58.5" N; Longitude: 92° 20' 49.0" W

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 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

Effective Date: March 1, 2020
Expiration Date: February 28, 2025



Robert E. Blanz, Ph.D., P.E.
Associate Director, Office of Water Quality
Arkansas Department of Environmental Quality

1/15/2020

Issue Date

PART I
PERMIT REQUIREMENTS

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

During the period beginning on 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.

THE PERMITTEE MAY NOT SIMULTANEOUSLY DISCHARGE FROM OUTFALLS 001 AND 002.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, else specified) Monthly Avg.	Concentration (mg/l, else specified)		Frequency	Sample Type
		Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	continuous	totalizing meter
Upstream Flow in Big Creek	N/A	Report, MGD	Report, MGD (Daily Max.)	continuous	meter
Minimum Upstream Flow in Big Creek before Discharge Is Allowed					
(January – February)	N/A	N/A	3.2 MGD, Minimum	continuous	meter
(March – December)	N/A	N/A	6.5 MGD, Minimum	continuous	meter
Effluent Flow as a % of Upstream Flow in Big Creek					
(January – February)	N/A	N/A	30.0% Maximum	continuous	calculate
(March – December)	N/A	N/A	20.0% Maximum	continuous	calculate
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 (CBOD ₅)	N/A	25.0	40.0	three/month	composite
Total Suspended Solids (TSS)	N/A	90.0	135.0	three/month	composite
Ammonia Nitrogen (NH ₃ -N)					
(January – February)	N/A	12.0	18.0	three/month	composite
(May – October)	N/A	4.0	6.0	three/month	composite
(March, April, November, December)	N/A	10.0	15.0	three/month	composite
Dissolved Oxygen (DO)					
(January – February)	N/A	7.0 (Inst. Min.)		three/month	grab
(May – October)		5.0 (Inst. Min.)		three/month	grab
(March, April, November, December)	N/A	6.0 (Inst. Min.)		three/month	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
(May – September)	N/A	200	400	three/month	grab
(October – April)	N/A	1000	2000	three/month	grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 10.0 s.u.	three/month	grab

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, else specified)	Concentration (mg/l, else specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
Chronic WET Testing ⁴					
<u>Pimephales promelas (Chronic)⁴</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 Pass/Fail Retest 1 (7-day NOEC) 22418 Pass/Fail Retest 2 (7-day NOEC) 22419 Pass/Fail Retest 3 (7-day NOEC) 51444		<u>7-Day Minimum</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		four/year ⁶ four/year ⁶ four/year ⁶ four/year ⁶ four/year ⁶ once/month ⁵ once/month ⁵ once/month ⁵	composite composite composite composite composite composite composite composite
<u>Ceriodaphnia dubia (Chronic)⁴</u> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail Reproduction (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) TQP3B Reproduction (7-day NOEC) TPP3B Pass/Fail Retest 1 (7-day NOEC) 22415 Pass/Fail Retest 2 (7-day NOEC) 22416 Pass/Fail Retest 3 (7-day NOEC) 51443		<u>7-Day Minimum</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		four/year ⁶ four/year ⁶ four/year ⁶ four/year ⁶ four/year ⁶ once/month ⁵ once/month ⁵ once/month ⁵	composite composite composite composite composite composite composite

¹ See Part II.6 (SSO Condition). If there are no overflows during the entire month, report “zero” (0).

² Reserved.

³ Reserved.

⁴ See Part II.8 (WET Testing Condition).

⁵ **CONDITIONAL REPORTING:** Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters (reported on a four times per year DMR). This condition applies to *P. promelas* and *C. dubia*.

⁶ The WET tests must be conducted in the following time frames: January or February, March through June, July through September, and October through December.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. 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 final treatment unit and prior to entering the receiving stream.

**PART I
PERMIT REQUIREMENTS**

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 - treated municipal wastewater.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 002. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

THE PERMITTEE MAY NOT SIMULTANEOUSLY DISCHARGE FROM OUTFALLS 001 AND 002.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, else specified)	Concentration (mg/l, else specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	continuous	totalizing meter
Upstream Flow in Hurricane Creek	N/A	Report, MGD	Report, MGD (Daily Max.)	continuous ⁶	meter
Minimum Upstream Flow in Hurricane Creek before Discharge Is Allowed					
(March – May)	N/A	N/A	9.0 MGD, Minimum ⁶	continuous	meter
(June – February)	N/A	N/A	4.5 MGD, Minimum ⁶	continuous	meter
Effluent Flow as a % of Upstream Flow in Hurricane Creek					
(March – May)	N/A	N/A	10.0% ⁶	continuous	calculate
(June – February)	N/A	N/A	20.0% ⁶	continuous	calculate
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 (CBOD ₅)	N/A	25.0	40.0	three/month	composite
Total Suspended Solids (TSS)	N/A	90.0	135.0	three/month	composite
Ammonia Nitrogen (NH ₃ -N)					
(January – February)	N/A	12.0	18.0	three/month	composite
(March – May, October – December)	N/A	10.0	15.0	three/month	composite
(June – September)	N/A	4.0	6.0	three/month	composite
Dissolved Oxygen (DO)					
(January – February)	N/A	4.0 (Inst. Min.)		three/month	grab
(March – May, October – December)	N/A	3.0 (Inst. Min.)		three/month	grab
(June – September)	N/A	2.0 (Inst. Min.)		three/month	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
(May – September)	N/A	200	400	three/month	grab
(October – April)	N/A	1000	2000	three/month	grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 10.0 s.u.	three/month	grab

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, else specified)	Concentration (mg/l, else specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
Chronic WET Testing ⁴					
<u>Pimephales promelas (Chronic)</u> ⁴ 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 Pass/Fail Retest 1 (7-day NOEC) 22418 Pass/Fail Retest 2 (7-day NOEC) 22419 Pass/Fail Retest 3 (7-day NOEC) 51444		<u>7-Day Minimum</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		four/year ⁷ four/year ⁷ four/year ⁷ four/year ⁷ four/year ⁷	composite composite composite composite composite
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				once/month ⁵ once/month ⁵ once/month ⁵	composite composite composite

¹ See Part II.6 (SSO Condition). If there are no overflows during the entire month, report "zero" (0).

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⁴ See Part II.8 (WET Testing Condition).

⁵ CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters (reported on a four times per year DMR). This condition applies to *P. promelas* and *C. dubia*.

⁶ During periods of discharge from this outfall, stream flow measurements in Hurricane Creek will be taken at the U.S. Highway 270 bridge (approximately 3.1 miles upstream of outfall 002) at intervals no longer than sixty minutes and immediately relayed to the treatment facility via a telemetry system. Effluent flow must be adjusted accordingly each time the stream flow is measured.

⁷ The WET tests must be conducted in the following time frames: December through February, March through May, June through August, and September through November.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. 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 final treatment unit and prior to entering the receiving stream.

SECTION B. PERMIT COMPLIANCE SCHEDULE

None.

PART II OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be licensed as at least Class II by the State of Arkansas in accordance with APC&EC Regulation No. 3.
2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand (CBOD₅) shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102(a). The 30-day average percent removal for Total Suspended Solids (TSS) shall not be less than 65 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.103(c) and 40 CFR Part 133.105(b).
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 IA 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 Branch of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
- The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5.
- All associated devices are installed, calibrated, and maintained to ensure 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 Assurance/Quality Control (QA/QC) 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. Best Management Practices (BMPs), as defined in Part IV.7, 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.

6. Sanitary Sewer Overflow (SSO) Reporting Requirements:

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.
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. 24-Hour Reporting:

When an SSO is detected – no matter how small – it must be reported within 24 hours of its discovery to ADEQ’s Water Quality Enforcement by using the online form in paragraph C below (the preferred method), by phone at (501) 682-0638, or by email at ssoadeq@adeq.state.ar.us.

This initial 24-hour report should include the following information:

1. Permit Number
2. Location of overflow (manhole number or street address)
3. The receiving water (if applicable)
4. Cause of overflow (if known)
5. Estimated volume of overflow so far
6. Total duration of the overflow

C. 5-Day Follow-Up Written Web Reporting:

A written report of overflows shall be provided to ADEQ within 5 days of the 24-hour oral report. A follow-up written report (5-day report) can be filled-in and submitted on the ADEQ Office of Water Quality/Enforcement Branch Web page at:

<https://www.adeq.state.ar.us/water/enforcement/sso/submit.aspx?type=s>

D. 24-Hour and 5-Day Reporting:

If the 24-hour report submitted includes all of the information requested in the 5-day report described in Paragraph C above, then a follow-up 5-day report is not required.

E. 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.

7. Contributing Industries and Pretreatment Requirements

A. The following pollutants may not be introduced into the treatment facility:

1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit (°F) or 60 degrees Centigrade (°C) using the test methods specified in 40 CFR 261.21;
2. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0 s.u., unless the works is specifically designed to accommodate such discharges;
3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference* or Pass Through**;
4. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which will cause Pass Through or Interference with the POTW;
5. Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 °C (104 °F) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits;
6. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;
7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
8. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

B. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act (CWA), including any requirements established under 40 CFR Part 403.

C. The permittee shall provide adequate notice to the Department of the following:

1. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 or 306 of the CWA 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.

Any 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.

* According to 40 CFR 403.3(k), the term *Interference* means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

1. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
2. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the CWA, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

** According to 40 CFR 403.3(p), the term *Pass Through* means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

8. WHOLE EFFLUENT TOXICITY TESTING (7-DAY CHRONIC NOEC FRESHWATER)A. SCOPE AND METHODOLOGY

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

APPLICABLE TO FINAL OUTFALLS: 001 and 002

REPORTED ON DMR AS FINAL OUTFALL: 001 and 002

Time Frame	Critical Dilution	Dilution Series
Outfall 001		
January – February	31%	13%, 17%, 23%, 31%, & 41%
March – December	23%	10%, 13%, 17%, 23%, & 31%
Outfall 002		
March – May	13%	5%, 7%, 10%, 13%, & 17%
June – February	23%	10%, 13%, 17%, 23%, & 31%

TESTING FREQUENCY: four/year

COMPOSITE SAMPLE TYPE: Defined in paragraph C.iv.a

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.

- ii. 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.

- iii. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

B. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of retests 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.

If a frequency reduction, as specified in Item F, has been granted and any valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to four times per year for the life of the permit. In addition:

i. Part I Testing Frequency Other Than Monthly

- a. The permittee shall conduct a total of three (3) retests for any species that demonstrates significant toxic effects at or below the critical dilution. The retests shall be conducted monthly during the next three consecutive months. If testing on a four times per year basis, the permittee may substitute one of the retests in lieu of one scheduled toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item D of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.
- b. **IF LETHAL EFFECTS HAVE BEEN DEMONSTRATED** If any of the retests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item E of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.
- c. **IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED** If any two of the three retests demonstrates significant sub-lethal effects at or below the critical dilution, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE_{SL}) requirements as specified in Item E 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 also be required for failure to perform the required retests.

- d. The provisions of Item B.i.a are suspended upon submittal of the TRE Action Plan.

C. REQUIRED TOXICITY TESTING CONDITIONS

i. 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:

- a. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
- b. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- c. 60% of the surviving control females must produce three broods.
- d. 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.
- e. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.
- f. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.
- g. 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.
- h. 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%.
- i. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;

j. A PMSD range of 12 - 30 for Fathead minnow growth.

ii. Statistical Interpretation

- a. 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.
- b. 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.
- c. If the conditions of Test Acceptability are met in Item C.i 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 D below.

iii. Dilution Water

- a. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;
 - (1) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
 - (2) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.
- b. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item C.i), 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:
 - (1) a synthetic dilution water control which fulfills the test acceptance requirements of Item C.i was run concurrently with the receiving water control;
 - (2) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);

- (3) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item D below; and
- (4) 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.

iv. Samples and Composites

- a. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item A.i above. "Composite sample" is a mixture of grab samples collected at the same sampling point at different times, formed 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.
- b. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples, on use, are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.
- c. The permittee must collect all three flow-weighted composite samples within the monitoring period. Second and/or third composite samples shall not be collected into the next monitoring period; such tests will be determined to not meet either reporting period requirements. Monitoring period definitions are listed in Part IV.
- d. 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.
- e. 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 D of this section.

- f. 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 A.i. above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.
- g. 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.

D. REPORTING

- i. 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 or retest which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.
- ii. A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit. The full reports for all valid tests, 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.
- iii. The permittee shall submit the results of each valid toxicity test and retest on the subsequent DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. Only results of valid tests are to be reported on the DMR.
 - a. Pimephales promelas (Fathead minnow)
 - (1) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP6C
 - (2) Report the NOEC value for survival, Parameter No. TOP6C
 - (3) Report the NOEC value for growth, Parameter No. TPP6C
 - (4) If the NOEC for growth is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP6C

- (5) Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C
 - (6) If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):
 - (A) Consecutive Monthly Retest 1: If the NOEC (lowest lethal or sub-lethal) for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22418 (reported on four times per year DMR);
 - (B) Consecutive Monthly Retest 2: If the NOEC (lowest lethal or sub-lethal) for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22419 (reported on four times per year DMR);
 - (C) Consecutive Monthly Retest 3: If the NOEC (lowest lethal or sub-lethal) for *P. promelas* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 51444 (reported on four times per year DMR);
 - (D) If testing on a four times per year basis, the permittee may substitute one of the retests in lieu of one scheduled toxicity test;
 - (E) If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22418, 22419, 51444 (reported on four times per year DMR)
- b. Ceriodaphnia dubia
- (1) If the NOEC for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP3B
 - (2) Report the NOEC value for survival, Parameter No. TOP3B
 - (3) Report the NOEC value for reproduction, Parameter No. TPP3B
 - (4) If the NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B
 - (5) Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B
 - (6) If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):
 - (A) Consecutive Monthly Retest 1: If the NOEC (lowest lethal or sub-lethal) for *C. dubia* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22415 (reported on four times per year DMR);

- (B) Consecutive Monthly Retest 2: If the NOEC (lowest lethal or sub-lethal) for *C. dubia* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 22416 (reported on four times per year DMR);
- (C) Consecutive Monthly Retest 3: If the NOEC (lowest lethal or sub-lethal) for *C. dubia* is less than the critical dilution, enter a '1'; otherwise, enter a '0' under Parameter No. 51443 (reported on four times per year DMR);
- (D) If testing on a four times per year basis, the permittee may substitute one of the retests in lieu of one scheduled toxicity test;
- (E) If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22415, 22416, and 51443 (reported on four times per year DMR)

E. 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.

- i. Within ninety (90) days of confirming toxicity, as outlined above, 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:
 - a. 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

- b. 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;
 - c. 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;
 - d. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
 - e. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- ii. 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.
 - iii. 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:
 - a. any data and/or substantiating documentation which identifies the pollutant(s)

and/or source(s) of effluent toxicity;

- b. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
 - c. 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.
- iv. 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.
 - v. Four times per year testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on four times per year 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).

F. MONITORING FREQUENCY REDUCTION

- i. The permittee may apply for a testing frequency reduction upon the successful completion of the first full year of testing (in accordance with Item A.i.) of the current permit term of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Ceriodaphnia dubia*).
- ii. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in Item C.i. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.
- iii. SUB-LETHAL OR SURVIVAL FAILURES - If any test fails the lethal or sub-lethal endpoint at any time during the life of this permit, three consecutive monthly retests are required and the monitoring frequency for the affected test species may be

increased to four times per year until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

- iv. Any monitoring frequency reduction granted applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to four times per year until the permit is re-issued.

PART III STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. Duty to Comply

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

2. Penalties for Violations of Permit Conditions

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars (\$25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars (\$10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. Permit Actions

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

- A. Violation of any terms or conditions of this permit.
- B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
- C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
- E. Failure of the permittee to comply with the provisions of APC&EC Regulation No. 9 (Permit fees) as required by Part III.A.11 herein.

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

4. **Toxic Pollutants**

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

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

5. **Civil and Criminal Liability**

Except as provided in permit conditions for “Bypass of Treatment Facilities” (Part III.B.4), and “Upset” (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statutes or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

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

7. **State Laws**

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

8. **Property Rights**

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

9. **Severability**

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

10. **Applicable Federal, State or Local Requirements**

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

11. **Permit Fees**

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APC&EC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APC&EC Regulation No. 6 and the provisions of APC&EC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

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

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

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

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

3. **Duty to Mitigate**

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

4. **Bypass of Treatment Facilities**

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

A. Bypass not exceeding limitation

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

B. Notice

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

C. Prohibition of bypass

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

5. Upset Conditions

- A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.B of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- B. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
1. An upset occurred and that the permittee can identify the specific cause(s) of the upset.
 2. The permitted facility was at the time being properly operated.
 3. The permittee submitted notice of the upset as required by Part III.D.6.
 4. The permittee complied with any remedial measures required by Part III.B.3.
- C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. Removed Substances

- A. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 CFR Part 503, 40 CFR Part 257, and 40 CFR Part 258.
- B. Any changes to the permittee's disposal practices described in the Statement of Basis, as derived from the permit application, will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. Power Failure

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

SECTION C – MONITORING AND RECORDS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance.

Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure 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 ensure accuracy of measurements and shall ensure 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 ensure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. **Penalties for Tampering**

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

5. **Reporting of Monitoring Results**

40 CFR Part 127.11(a)(1) and 40 CFR Part 127.16(a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory Authorities must initially request access for a NetDMR account. Once a NetDMR account is established, access to electronic filing should use the following link <https://cdx.epa.gov>. Permittees who are unable to file electronically may request a waiver from the Director in

accordance with 40 CFR Part 127.15. Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR dated and submitted no later than the 25th day of the month, following the completed reporting period beginning on the effective date of the permit.

6. **Additional Monitoring by the Permittee**

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

7. **Retention of Records**

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

8. **Record Contents**

Records and monitoring information shall include:

- A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any.
- B. The individual(s) who performed the sampling or measurements.
- C. The date(s) and time analyses were performed.
- D. The individual(s) who performed the analyses.
- E. The analytical techniques or methods used.
- F. The measurements and results of such analyses.

9. **Inspection and Entry**

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

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

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The Permittee shall give notice to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 CFR Part 122.41(l)]. Notice is required only when:

- A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR Part 122.29(b).
- B. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants subject to effluent limitations in the permit, or to the notification requirements under 40 CFR Part 122.42(b).

2. Anticipated Noncompliance

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

3. Transfers

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

4. Monitoring Reports

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

5. Compliance Schedule

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

6. Twenty-four Hour Report

- A. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:

1. A description of the noncompliance and its cause.
2. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue.
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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

1. Any unanticipated bypass which exceeds any effluent limitation in the permit.
2. Any upset which exceeds any effluent limitation in the permit.
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Branch of the Office of Water Quality of the ADEQ.

C. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours to the Enforcement Branch of the Office of Water Quality of the ADEQ.

7. **Other Noncompliance**

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

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

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

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

9. **Duty to Provide Information**

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

10. Duty to Reapply

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

11. Signatory Requirements

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

A. All **permit applications** shall be signed as follows:

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

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above.
2. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section shall make the following certification:

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

12. **Availability of Reports**

Except for data determined to be confidential under 40 CFR Part 2 and APC&EC Regulation No. 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. **Penalties for Falsification of Reports**

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

14. **Other Information**

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

PART IV DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR Part 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. **“7-Day Average”** Also known as “average weekly” means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the “daily discharges” of all effluent samples collected during a calendar week in colonies per 100 ml.
2. **“Act”** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
3. **“Administrator”** means the Administrator of the U.S. Environmental Protection Agency.
4. **“APC&EC”** means the Arkansas Pollution Control and Ecology Commission.
5. **“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.
6. **“Applicable water quality standards”** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Regulation No. 2, as amended.
7. **“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.
8. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR Part 122.41(m)(1)(i).
9. **“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.
10. **“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.

11. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month.
12. **“Department”** means the Arkansas Department of Environmental Quality (ADEQ).
13. **“Director”** means the Director of the Arkansas Department of Environmental Quality.
14. **“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.
15. **“E-Coli”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the Daily Maximum as the highest “daily discharge” during the calendar month, and the Monthly Average as the geometric mean of all “daily discharges” within a calendar month, in colonies per 100 ml.
16. **“Fecal Coliform Bacteria (FCB)”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest “daily discharge” during the calendar month, and the Monthly Average as the geometric mean of all “daily discharges” within a calendar month, in colonies per 100 ml.
17. **“Grab sample”** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
18. **“Industrial User”** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
19. **“Instantaneous flow measurement”** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
20. **“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.
21. **“Instantaneous Minimum”** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
22. **“Monitoring and Reporting”**

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

 - A. **MONTHLY:**

is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.
 - B. **BI-MONTHLY:**

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

C. QUARTERLY:

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

D. SEMI-ANNUAL:

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

E. ANNUAL or YEARLY:

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

23. **“Monthly Average”** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month. For Fecal Coliform Bacteria (FCB) or E-Coli, report the Monthly Average as the geometric mean of all “daily discharges” within a calendar month.
24. **“National Pollutant Discharge Elimination System (NPDES)”** 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.
25. **“POTW”** means Publicly Owned Treatment Works;
26. **“Reduction of CBOD₅/BOD₅ and TSS in mg/l Formula”**
[(Influent – Effluent) / Influent] × 100
27. **“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.
28. **“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.
29. **“Treatment works”** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any

works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.

30. **Units of Measure:**

“**MGD**” shall mean million gallons per day.

“**mg/l**” shall mean milligrams per liter or parts per million (ppm).

“**µg/l**” shall mean micrograms per liter or parts per billion (ppb).

“**cfs**” shall mean cubic feet per second.

“**ppm**” shall mean parts per million.

“**s.u.**” shall mean standard units.

31. “**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless of improper operations.

32. “**Visible sheen**” means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.

33. “**Weekday**” means Monday – Friday.

Final Statement of Basis

This Statement of Basis is for information and justification of the permit requirements only. Please note that it is not enforceable. This permitting decision is for the renewal of discharge Permit Number AR0034347 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 27-00022 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:

City of Sheridan - Sheridan Wastewater Treatment Facility
P.O. Box 486
Sheridan, AR 72150

The facility address is:

City of Sheridan - Sheridan Wastewater Treatment Facility
near the south end of Gatzke Drive
Sheridan, AR 72150

3. PREPARED BY

The permit was prepared by:

Loretta Carstens, P.E.
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Office of Water Quality
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NPDES Discharge Permits Section
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4. PERMIT ACTIVITY

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

The permittee submitted a permit renewal application on February 20, 2019, with all additional information submitted by July 18, 2019. The discharge permit is reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

The facility has requested that a second outfall be added to the permit to allow for direct discharge to Hurricane Creek. The current outfall, Outfall 001, will remain in the permit. The permittee will only be allowed to discharge from one outfall at a time.

DOCUMENT ABBREVIATIONS

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

APC&EC - Arkansas Pollution Control and Ecology Commission

BAT - best available technology economically achievable

BCT - best conventional pollutant control technology

BMP - best management practice

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

ML - 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 - APC&EC Regulation No. 2

Reg. 6 - APC&EC Regulation No. 6

Reg. 8 - APC&EC Regulation No. 8

Reg. 9 - APC&EC Regulation No. 9

RP - reasonable potential

SIC - standard industrial classification

SSO - sanitary sewer overflow

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
USGS - United States Geological Survey
WET - Whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

The compliance and enforcement history for this facility can be reviewed by using the following web link:

http://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0034347_Enforcement%20Review_20190314.txt

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:

1. The sludge disposal condition was removed from Part II of the permit. Sludge disposal is addressed in Part III.B.6 of the permit.
2. Part III.C.5 of the permit now requires that DMRs be submitted electronically via NetDMR.
3. Outfall 002 has been added to the permit.
4. The description of the monitoring location at Outfall 001 has been modified.
5. The SSO language in Part II of the permit has been modified.
6. The FCB limits for the month of April have been corrected. See Item Nos. 12.A and 12.B of this Statement of Basis for additional information.
7. The WET language in Part II of the permit has been updated.
8. The requirement to monitor the influent CBOD₅ and TSS levels has been removed from Part II of the permit.
9. The CBOD₅ limits have been changed to 25.0 mg/l (AML) and 40.0 mg/l (DML). See Item No. 12.A of this Statement of Basis for additional information.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

The outfalls are located at the following coordinates based on the permit application and confirmed with Acme Mapper 2.2 using WGS84:

Outfall 001

Latitude: 34° 17' 56.5" N; Longitude: 92° 22' 45" W

The receiving waters named:

Big Creek, thence to Hurricane Creek, thence to the Saline River, thence to the Ouachita River in Segment 2C of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 08040203 and reach #904 is a Water of the State classified for primary and 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.

Outfall 002

Latitude: 34° 17' 58.5" N; Longitude: 92° 22' 49" W

The receiving waters named:

Hurricane Creek, thence to the Saline River, thence to the Ouachita River in Segment 2C of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 08040203 and reach #004 is a Water of the State classified for primary and 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, TOTAL MAXIMUM DAILY LOADS, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS

A. 303(d) List

The Saline River is on the 2016 303(d) list for turbidity. The permit contains TSS limits which are protective of the receiving stream. Therefore, no additional action is necessary at this time.

B. Applicable Total Maximum Daily Loads (TMDLs)

Outfall 001

TMDL for Siltation/Turbidity for Big Creek near Sheridan, Arkansas was finalized March 21, 2008. The siltation WLA was set to zero because the surrogate being used for turbidity, TSS, is considered to represent inorganic suspended solids (i.e., soil and sediment particles from erosion or sediment resuspension). The suspended solids discharged by point sources in Big Creek are assumed to consist primarily of organic solids rather than inorganic solids. Discharges of organic suspended solids are already addressed by ADEQ through the permitting of point sources to maintain water quality standards for dissolved oxygen.

TMDL for Dissolved Oxygen for Big Creek near Sheridan, Arkansas was finalized January 16, 2007. This TMDL contains WLAs applicable to this permittee for CBOD₅, NH₃-N, and DO. The WLAs for NH₃-N, and DO are continued from the previous permit.

However, the WLA for CBOD in the TMDL is higher than that allowed by the secondary treatment regulations. Therefore, the CBOD5 limit was changed from 30 mg/L to 25 mg/L. See section 12.A for more detailed discussion.

Outfalls 001 and 002

This facility is identified in the Appendix of the TMDL report entitled *TMDLs for Segments Listed for Mercury in Fish Tissue for the Ouachita River Basin, and Bayou Bartholomew, Arkansas and Louisiana to Columbia*, approved by EPA on December 18, 2002. The point sources identified within the watershed covered under this TMDL contribute less than 0.2% of the current total mercury load to the watershed in this TMDL. The TMDL estimates that 99.8% of the current total mercury load is from non-point and background sources (atmospheric deposition and erosion of geology and sediment). The TMDL further states that even if the NPDES point sources were to reduce their mercury wasteload to zero, the required reduction in the watershed mercury load would not be attained because of the very high percentage of mercury loadings from nonpoint and background sources. The instream water quality standard for Mercury in Arkansas is 0.012 µg/L. As stated in the executive summary of the above referenced TMDL report, there have been no known violations of this numeric mercury water quality standard or the fishable designated uses in any of the waterbodies included in this TMDL study. The purpose of this TMDL was to determine the mercury reductions needed to reduce the levels of mercury in fish tissue to values that would support the narrative designated uses of the waterbodies (i.e. fish consumption). The TMDL further states that reductions in mercury loading to the watershed as a result of implementing mercury emission regulations and erosion BMPs were calculated using average mercury tissue concentration in largemouth bass. The TMDL states that using the average mercury tissue concentrations to estimate reductions in mercury loads is considered adequate to protect human health from effects due to long term exposure. In estimating the current total mercury load and required reduction of total current load, the TMDL did not require any reductions from current estimated point source loads. The TMDL only requires reductions from atmospheric deposition, soil erosion, and geologic erosion. The TMDL states that this calculated reduction from mercury air emission regulations and erosion BMPs results in watershed mercury loads less than the TMDL (i.e. complies with the TMDL). Therefore, taking into consideration these findings of the TMDL, no permitting action for Mercury is required for this facility based on the TMDL.

C. Endangered Species

No comments on the application were received from the USF&WS. The draft permit and Statement of Basis were sent to the USF&WS for their review.

D. Anti-Degradation

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation 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: 0.676 MGD (The design flow is applicable to both outfalls. However, flow from both outfalls is controlled through an HCR system in place at each outfall.)
- B. Type of Treatment: 3-cell stabilization pond system followed by a holding pond utilizing a hydrograph controlled release (applicable to both outfalls)
- C. Discharge Description: treated municipal wastewater (applicable to both outfalls)
- D. Facility Status: This facility is classified as a minor municipal since the design flow of the facility listed above is less 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

This facility receives process wastewater from significant industrial users as defined by 40 CFR §403.3(v). The Department has made the decision based on several criteria that the POTW will not be required to develop an approved pretreatment program at this time. In accordance with 40 CFR §403.5(a)(1) and (b), General and Specific Pretreatment Prohibitions and reporting requirements are deemed appropriate at this time.

11. SEWAGE SLUDGE PRACTICES

Sludge generated at this facility accumulates in the lagoons on site. The permittee is responsible for removing the sludge as necessary to maintain capacity.

12. DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS

The Arkansas Department of Environmental Quality has determined 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.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the 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
OUTFALL 001								
Upstream Flow in Big Creek	N/A	N/A	Report MGD	Report MGD	Report MGD	Report MGD	Report MGD	Report MGD
Minimum Upstream Flow in Big Creek before Discharge Is Allowed								
(January – February)	N/A	3.2 MGD, min.	N/A	N/A	N/A	3.2 MGD, min.	N/A	3.2 MGD, min.
(March – December)	N/A	6.5 MGD, min.	N/A	N/A	N/A	6.5 MGD, min.	N/A	6.5 MGD, min.
Effluent Flow as a % of Upstream Flow in Big Creek								
(January – February)	N/A	30.0%	N/A	N/A	N/A	30.0%	N/A	30.0%
(March – December)	N/A	20.0%	N/A	N/A	N/A	20.0%	N/A	20.0%
CBOD ₅	30.0	45.0	25.0	40.0	30.0	45.0	25.0	40.0
TSS	N/A	N/A	90.0	135.0	90.0	135.0	90.0	135.0
NH ₃ -N								
(January – February)	12.0	18.0	N/A	N/A	12.0	18.0	12.0	18.0
(May – October)	4.0	6.0	N/A	N/A	4.0	6.0	4.0	6.0
(March, April, Nov., & Dec.)	10.0	15.0	N/A	N/A	10.0	15.0	10.0	15.0
DO								
(January – February)	7.0 (Inst. Min.)		N/A		7.0 (Inst. Min.)		7.0 (Inst. Min.)	
(May – October)	5.0 (Inst. Min.)		N/A		5.0 (Inst. Min.)		5.0 (Inst. Min.)	

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
(March, April, Nov., & Dec.)	6.0 (Inst. Min.)		N/A		6.0 (Inst. Min.)		6.0 (Inst. Min.)	
FCB (col/100 ml)								
(April)	1000	2000	N/A	N/A	200	400	1000	2000
(May – September)	200	400	N/A	N/A	200	400	200	400
(October – March)	1000	2000	N/A	N/A	1000	2000	1000	2000
pH	6.0 - 9.0 s.u.		6.0 - 10.0 s.u.		6.0 - 10.0 s.u.		6.0 - 10.0 s.u.	
OUTFALL 002								
Upstream Flow in Hurricane Creek	N/A	N/A	Report MGD	Report MGD	N/A	N/A	Report MGD	Report MGD
Minimum Upstream Flow in Hurricane Creek before Discharge Is Allowed								
(March – May)	N/A	9.0 MGD, min.	N/A	N/A	N/A	N/A	N/A	9.0 MGD, min.
(June – February)	N/A	4.5 MGD, min.	N/A	N/A	N/A	N/A	N/A	4.5 MGD, min.
Effluent Flow as a % of Upstream Flow in Hurricane Creek								
(March – May)	N/A	10.0%	N/A	N/A	N/A	N/A	N/A	10.0%
(June – February)	N/A	20.0%	N/A	N/A	N/A	N/A	N/A	20.0%
CBOD ₅	30.0	45.0	25.0	40.0	N/A	N/A	25.0	40.0
TSS	N/A	N/A	90.0	135.0	N/A	N/A	90.0	135.0
NH ₃ -N								
(January – February)	12.0	18.0	N/A	N/A	N/A	N/A	12.0	18.0
(March – May, October – December)	10.0	15.0	N/A	N/A	N/A	N/A	10.0	15.0
(June – September)	4.0	6.0	N/A	N/A	N/A	N/A	4.0	6.0
DO								
(January – February)	4.0 (Inst. Min.)		N/A		N/A		4.0 (Inst. Min.)	
(March – May, October – December)	3.0 (Inst. Min.)		N/A		N/A		3.0 (Inst. Min.)	
(June – September)	2.0 (Inst. Min.)		N/A		N/A		2.0 (Inst. Min.)	

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
FCB (col/100 ml)								
(May – September)	200	400	N/A	N/A	N/A	N/A	200	400
(October – April)	1000	2000	N/A	N/A	N/A	N/A	1000	2000
pH	6.0 - 9.0 s.u.		6.0 - 10.0 s.u.		N/A		6.0 - 10.0 s.u.	

A. Justification for Limitations and Conditions of the Permit

Parameter	Water Quality or Technology	Justification
Outfall 001		
Upstream Flow in Big Creek	Technology	Information needed to confirm compliance with the minimum upstream flow and effluent flow as a % of upstream flow limits
Minimum Upstream Flow in Big Creek before Discharge Is Allowed	Water Quality	CWA §402(o) and previous permit
Effluent Flow as a % of Upstream Flow in Big Creek	Water Quality	CWA §402(o) and previous permit
CBOD ₅	Technology	40 CFR 133.102, 40 CFR 122.44(l), and previous permit
TSS	Technology	40 CFR 133.103(c), EPA Region 6 letter dated May 19, 1998, 40 CFR Part 122.44(l), and previous permit
NH ₃ -N	Water Quality	TMDL for Dissolved Oxygen for Big Creek near Sheridan, Arkansas, CWA § 402(o), and previous permit
DO	Water Quality	TMDL for Dissolved Oxygen for Big Creek near Sheridan, Arkansas, CWA § 402(o), and previous permit
FCB	Water Quality	Reg. 2.507, CWA § 402(o), and previous permit
pH	Technology	40 CFR 133.102(c), 40 CFR 122.44(l), and previous permit
Outfall 002		
Upstream Flow in Hurricane Creek	Technology	Information needed to confirm compliance with the minimum upstream flow and effluent flow as a % of upstream flow limits

Parameter	Water Quality or Technology	Justification
Minimum Upstream Flow in Hurricane Creek before Discharge Is Allowed	Water Quality	<i>Water Quality Modeling For City of Sheridan Proposed Discharge to Hurricane Creek</i> , February 15, 2019, FTN Associates, Ltd.
Effluent Flow as a % of Upstream Flow in Hurricane Creek	Water Quality	<i>Water Quality Modeling For City of Sheridan Proposed Discharge to Hurricane Creek</i> , February 15, 2019, FTN Associates, Ltd.
CBOD ₅	Technology	40 CFR 133.102
TSS	Technology	40 CFR 133.105
NH ₃ -N	Water Quality	<i>Water Quality Modeling For City of Sheridan Proposed Discharge to Hurricane Creek</i> , February 15, 2019, FTN Associates, Ltd.
DO	Water Quality	<i>Water Quality Modeling For City of Sheridan Proposed Discharge to Hurricane Creek</i> , February 15, 2019, FTN Associates, Ltd.
FCB	Water Quality	Reg. 2.507
pH	Technology	40 CFR 133.102(c)

CBOD₅

The following information is applicable to both Outfall 001 and Outfall 002 since both outfalls discharge effluent from the same WWTP.

CBOD₅ limits are based on secondary treatment standards in 40 CFR Part 133.102. The effluent data for this facility from the past three years (January 2016 to January 2019) was evaluated to determine the concentrations consistently achieved. This data was used to determine if the facility is eligible for equivalent to secondary limitations or if secondary treatment limitations apply. The discussion of this evaluation is as follows:

- A. Secondary Treatment Standards (40 CFR 133.102(a) and (b)): The first criterion that must be satisfied to qualify for the equivalent to secondary standards is demonstrating that the effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the secondary treatment standards set forth in §133.102(a) and (b). The regulations at §133.101(f) define “effluent concentrations consistently achievable through proper operation and maintenance” as:
- (f)(1): For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least 2 years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions.
 - (f)(2): A 7-day average value equal to 1.5 times the value derived under paragraph (f)(1).

- B. Principal Treatment Process: The second criterion that a facility must meet to be eligible for equivalent to secondary standards is that its principal treatment process must be a trickling filter or waste stabilization pond system.
- C. Provides Significant Biological Treatment: The third criterion for applying equivalent to secondary standards is that the treatment works provides significant biological treatment of municipal wastewater. The regulations at § 133.101(k) define significant biological treatment as using an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal.

Evaluation of Criterion A

Based on the CBOD5 data reported over the past 36 months (February 2016 to January 2019), the facility has demonstrated the ability to meet Secondary Treatment Standards in 40 CFR 133.102. The 95th percentile value of the monthly average data was calculated to be 12 mg/l. The 7-day average value was calculated to be 18 mg/l (1.5 times the monthly average value). **However, the CBOD5 limits from the previous permit (30/45 mg/l) are being corrected to the Secondary Treatment Standards (25/40 mg/l).** The facility will be evaluated with each renewal application to determine if adjustments need to be made to the CBOD5 requirements. The CBOD5 data used for this evaluation can be found with the DMR data at the following weblink:

http://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0034347_DMR%20Measurement%20Report_20190308.pdf

Evaluation of Criterion B

The principal treatment process must be a trickling filter or waste stabilization pond system. This facility operates a 3-cell stabilization pond system followed by a holding pond utilizing a hydrograph controlled release (HCR). The stabilization pond system is the principal treatment process at this facility, therefore it meets this criterion.

Evaluation of Criterion C

The waste stabilization pond system must provide significant biological treatment of the wastewater. Significant biological treatment is defined as a stabilization pond system or trickling filter system that consistently achieves a 30-day average of at least 65 percent removal of BOD₅ or CBOD₅. Since stabilization ponds are the only biological treatment units at this facility, and the permit requires at least 65% removal efficiency of CBOD₅, the facility meets this criterion.

TSS

The following information is applicable to both Outfall 001 and Outfall 002 since both outfalls discharge effluent from the same WWTP.

Total Suspended Solids limits are based on alternate TSS limitations for Publicly Owned Treatment Works (POTW) in Arkansas which were published in the Federal Register on September 20, 1984. These alternate TSS limitations are applicable to POTWs where waste stabilization ponds are the principal process for secondary treatment and operational data indicates that the equivalent to secondary treatment standards for TSS cannot be achieved. The effluent TSS data for this facility from the past three years (April 2011 to April 2014) was evaluated to determine the TSS concentrations consistently achieved by the facility. This data was used to confirm that the facility is eligible for these alternate TSS limitations. The discussion of this evaluation is as follows:

- A. Secondary Treatment Standards (40 CFR 133.102(a) and (b)): The first criterion that must be satisfied to qualify for the equivalent to secondary standards is demonstrating that the TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the secondary treatment standards set forth in §133.102(a) and (b). The regulations at §133.101(f) define “effluent concentrations consistently achievable through proper operation and maintenance” as:
 - (f)(1): For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least 2 years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions.
 - (f)(2): A 7-day average value equal to 1.5 times the value derived under paragraph (f)(1).
- B. Principal Treatment Process: The second criterion that a facility must meet to be eligible for equivalent to secondary standards is that its principal treatment process must be a trickling filter or waste stabilization pond system.
- C. Provides Significant Biological Treatment: The third criterion for applying equivalent to secondary standards is that the treatment works provides significant biological treatment of municipal wastewater. The regulations at § 133.101(k) define significant biological treatment as using an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD₅.

Evaluation of Criterion A

Based on the TSS data reported over the past three years, the facility has not demonstrated the ability to meet Secondary Treatment Standards in 40 CFR 133.102. The 95th percentile value of the monthly average TSS data was calculated to be 47.2 mg/l. The 7-day average value was calculated to be 70.8 mg/l (1.5 times the monthly average value). Neither of these values demonstrate the ability to meet Secondary Treatment Standards (30/45 mg/l), nor Equivalent to Secondary Standards (45/65 mg/l). Therefore, the limits of 90 mg/l 30-day average and 135 mg/l 7-day average will be continued from

the previous permit as allowed under 40 CFR 133.103(c). The facility will be evaluated with each renewal application to determine if adjustments need to be made to the Total Suspended Solids (TSS) requirements. The TSS data used for this evaluation can be found with the DMR data at the following weblink:

http://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0034347_DMR%20Measurement%20Report_20190308.pdf

Evaluation of Criterion B

The principal treatment process must be a trickling filter or waste stabilization pond system. This facility operates a 3-cell stabilization pond system followed by a holding pond utilizing a hydrograph controlled release (HCR). The stabilization pond system is the principal treatment process at this facility, therefore it meets this criterion.

Evaluation of Criterion C

The waste stabilization pond system must provide significant biological treatment of the wastewater. Significant biological treatment is defined as a stabilization pond system or trickling filter system that consistently achieves a 30-day average of at least 65 percent removal of BOD₅ or CBOD₅. Since stabilization ponds are the only biological treatment units at this facility, and the permit requires at least 65% removal efficiency of TSS, the facility meets this criterion.

FCB

The previous permit included the effluent limitations for FCB expressed as 200/400 (Monthly Average/7-Day Average) colonies/100ml during the month of April. These limits are now expressed as 1000/2000 (Monthly Average/7-Day Average) colonies/100ml during the month of April based on Reg. 2.507.

pH

Regulation 2.504 water quality standards states that "As a result of waste discharges, the pH of water in streams or lakes must not fluctuate in excess of 1.0 unit over a period of 24 hours and pH values shall not be below 6.0 or above 9.0". Also, 40 CFR 133.102 (c) allows for the expansion of the pH limit range. In accordance with 40 CFR 133.102(c), an expansion of the pH range may be requested if inorganic chemicals are not added to the waste stream as part of the treatment process and contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 s.u. or greater than 9.0 s.u.

In a letter dated June 17, 2014, the facility certified that inorganic chemicals are not added to the waste stream as part of the treatment process, and that contributions from industrial sources do not cause the effluent pH to be outside of the range of 6.0-9.0 s.u. Therefore, 40 CFR 133.102 (c) allows for the expansion of the pH limit range.

A spreadsheet provided by the EPA, based on the procedure outlined in “Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling” (EPA, 1988), that calculates the resulting pH for a mixture of two flows can be used to model the effects of a discharge on a receiving stream. This facility discharges into Big Creek (Outfall 001) under Hydrograph Controlled Release (HCR) conditions contained in the permit. Based on permit requirements, the facility is allowed to discharge a maximum of 30% of upstream flow during January – February and a maximum of 20% of upstream flow during the remainder of the year. Using the allowed HCR ratio during January – February (30%), the ratio of upstream flow (Q_r) to effluent flow (Q_e) calculates to approximately 4:1 using the formula: $(Q_e + Q_r)/Q_e$.

This facility is also permitted to discharge into Hurricane Creek (Outfall 002) under HCR conditions contained in the permit. Based on permit requirements, the facility is allowed to discharge a maximum of 10% of upstream flow during March – May and a maximum of 20% of upstream flow during June – February. Using the allowed HCR ratio during June – February (30%), the ratio of upstream flow (Q_r) to effluent flow (Q_e) calculates to approximately 6:1 using the formula: $(Q_e + Q_r)/Q_e$.

The referenced spreadsheet was used to model the effects on Big Creek. Effluent data for alkalinity was acquired from the WET test reports and effluent temperature was conservatively set equal to water quality standard of 30°C to simulate a worst case scenario. Stream data for alkalinity, pH, and Temperature were acquired from ADEQ monitoring station OUA0018. Although this monitoring station is downstream of this facility’s discharge, the data is considered acceptable for predicting the effects of instream pH because the effluent pH from this facility is higher than the resulting downstream pH. Thus, the instream pH value from downstream station used in the calculation make the calculations conservative. Based on the results from this spreadsheet using these conservative values of downstream data, the facility’s discharge with a pH range of 6.0-10.0 s.u. does not show reasonable potential to cause the instream pH values in Big Creek or Hurricane Creek to exceed Water Quality Standards. The effluent meets the requirements of Regulation 2.504. Therefore, the previous permit limits of 6.0 - 10.0 s.u. are continued in this permit. The calculations and data used for the calculations can be found at the following weblink:

Outfall 001 – Big Creek

http://www.adeg.state.ar.us/ftpoot/Pub/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0034347_pH%20Calculations_20140627.pdf

Outfall 002 – Hurricane Creek

http://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0034347_pH%20mixing%20calcs%20for%20hurricane%20creek_20190226.pdf

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 Part 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA 402(o)(2), CWA 303(d)(4), or 40 CFR Part 122.44(l)(2)(i).

The permit meets or exceeds the requirements of the previous permit, except for FCB. The final effluent limitations for FCB in the previous permit were not consistent with current State WQS found in Chapter 5, Section 2.507 of Regulation No. 2. The WQS have been updated since that time. This permit allows relaxation in the secondary contact season limitations. This relaxation in limitations does not constitute backsliding, based on CWA Sections 402(o) and 303(d)(4). The revised limitations continue to maintain the state anti-degradation policy by meeting the primary and secondary contact season standards of Reg. 2.507, and maintaining the existing uses of the receiving stream.

C. Limits Calculations

1. Mass Limits:

Mass limits have not been included in the permit since the flow is limited through HCR conditions.

2. 7-Day Average Limits:

The 7-day average limits for NH₃-N as well as CBOD₅ and TSS are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control:

$$7\text{-day average limits} = \text{monthly average limits} \times 1.5$$

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

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 is being updated to revise the monthly average CBOD₅ limits for Outfall 001 from 30 mg/L to 25 mg/L to comply with secondary treatment standards, and to add a new Outfall 002 with the following limits:

January – February: CBOD₅/TSS/NH₃-N/DO = 25.0/90.0/12.0/4.0 mg/l
 March – May: CBOD₅/TSS/NH₃-N/DO = 25.0/90.0/10.0/3.0 mg/l
 June – September: CBOD₅/TSS/NH₃-N/DO = 25.0/90.0/4.0/2.0 mg/l
 October – December: CBOD₅/TSS/NH₃-N/DO = 25.0/90.0/10.0/3.0 mg/l
 Design flow (Q): 0.676 MGD

Maximum Effluent Flow as % of Upstream Flow: March – May: 10.0%
 June – February: 20.0%
 Minimum Upstream Flow for Allowed Discharge: March – May: 9.0 MGD
 June – February: 4.5 MGD

13. WHOLE EFFLUENT TOXICITY

Although this facility is a minor municipal discharger, WET testing requirements have been continued from the previous permit since they accept wastewater from a metal finishing facility.

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

Whole effluent toxicity (WET) testing is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992, and EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies, revised March 13, 2000. Whole effluent toxicity testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The whole effluent toxicity testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
Chronic WET	four/year

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:

$$\text{Critical dilution (CD)} = (Q_d / (Q_d + (Q_b * 0.67))) \times 100$$

Sample Calculation:

$$\text{CD} = (0.96 / (0.96 + (3.2 \times 0.67))) \times 100\% = 31\%$$

Time Frame	Effluent Flow as % of Stream Flow	Minimum Stream Flow (Q _b)	Calculated Effluent Flow ¹ (Q _d)
Outfall 001			
January – February	30%	3.2 MGD	0.96 MGD
March – December	20%	6.5 MGD	1.3 MGD
Outfall 002			
March – May	10%	9.0 MGD	0.9 MGD
June – February	20%	4.5 MGD	0.9 MGD

¹ Calculated effluent flow is based on HCR requirements in permit and is calculated as follows: (Effluent flow as % of stream flow × Minimum stream flow)

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 and the critical dilutions are listed in the following table:

Time Frame	Critical Dilution	Dilution Series
Outfall 001		
January – February	31%	13%, 17%, 23%, 31%, & 41%
March – December	23%	10%, 13%, 17%, 23%, & 31%
Outfall 002		
March – May	13%	5%, 7%, 10%, 13%, & 17%
June – February	23%	10%, 13%, 17%, 23%, & 31%

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 APC&EC 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).

The following information summarizes toxicity tests submitted by the permittee during the term of the current permit at Outfall 001.

Permit Number:	AR0034347		AFIN:	27-00022	Outfall Number:	001
Date of Review:	3/12/2019		Reviewer:	A. Bates/M. Barnett		
Facility Name:	City of Sheridan					
January-February						
Previous Dilution series:	13, 17, 23, 31, 41%		Proposed Dilution Series:	13, 17, 23, 31, 41%		
Previous Critical Dilution:	31%		Proposed Critical Dilution:	31%		
Previous TRE activities:	none					
Frequency recommendation by species						
<i>Pimephales promelas</i> (Fathead minnow):	once per quarter					
<i>Ceriodaphnia dubia</i> (water flea):	once per quarter					
TEST DATA SUMMARY						
TEST DATE	Vertebrate (<i>Pimephales promelas</i>)			Invertebrate (<i>Ceriodaphnia dubia</i>)		
	Lethal NOEC	Sub-Lethal NOEC		Lethal NOEC	Sub-Lethal NOEC	
Jan-16	41	41		41	41	
Failures noted in BOLD						
REASONABLE POTENTIAL CALCULATIONS						
	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal		
Min NOEC Observed	41	41	41	41		
TU at Min Observed	2.44	2.44	2.44	2.44		
Count	1	1	1	1		
Failure Count	0	0	0	0		
Mean	2.439	2.439	2.439	2.439		
Std. Dev.						
CV	0.6	0.6	0.6	0.6		
RPMF	6.2	6.2	6.2	6.2		
Reasonable Potential	4.688	4.688	4.688	4.688		
100/Critical dilution	3.226	3.226	3.226	3.226		
Does Reasonable Potential Exist	Yes	Yes	Yes	Yes		
PERMIT ACTION						
<i>P. promelas</i> Chronic - monitoring						
<i>C. dubia</i> Chronic - monitoring						

Reasonable potential appears to exist for toxic effects below the critical dilution of 31% during January and February. However, the reasonable potential determination is based on limited test data, and there have been no lethal or sub-lethal WET test failures below the critical dilution of 31% during the current permit term from January 1, 2015 through December 31, 2019. Additional data is needed to confirm the necessity of limits; therefore, they are not required at this time.

Permit Number:	AR0034347	AFIN:	27-00022	Outfall Number:	001
Date of Review:	3/12/2019	Reviewer:	A. Bates/M. Barnett		
Facility Name:	City of Sheridan				
March - December					
Previous Dilution series:	10, 13, 17, 23, 31%	Proposed Dilution Series:	10, 13, 17, 23, 31%		
Previous Critical Dilution:	23%	Proposed Critical Dilution:	23%		
Previous TRE activities:	none				
Frequency recommendation by species					
<i>Pimephales promelas</i> (Fathead minnow):	four times per year				
<i>Ceriodaphnia dubia</i> (water flea):	four times per year				

TEST DATA SUMMARY

TEST DATE	Vertebrate (<i>Pimephales promelas</i>)		Invertebrate (<i>Ceriodaphnia dubia</i>)		
	Lethal	Sub-Lethal	Lethal	Sub-Lethal	
	NOEC	NOEC	NOEC	NOEC	
Mar-14	19	19	19	19	
Apr-14	19	19	19	19	1
Sep-14	19	19	19	19	2
Dec-14	19	19	19	19	2
Mar-15	31	31	31	31	
May-15	31	31	31	31	
Nov-15	31	31	31	31	2
Apr-16	31	31	31	31	2
Nov-16	31	31	31	31	
Mar-17	31	31	31	31	
Apr-17	31	31	31	31	
Apr-18	31	31	31	31	3
Oct-18	31	31	31	31	4

Failures noted in BOLD

- ¹ one or more samples received above 6°C
- ² less than three effluent samples collected
- ³ two grab samples collected for *C. dubia* test; one sample composited over 30 minutes for *P. promelas* repeat test
- ⁴ effluent sample 1 consisted of 3 aliquots collected within 10 minutes; effluent samples 2 and 3 were grab samples

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	19	19	19	19
TU at Min Observed	5.26	5.26	5.26	5.26
Count	13	13	13	13
Failure Count	0	0	0	0
Mean	3.853	3.853	3.853	3.853
Std. Dev.	0.979	0.979	0.979	0.979
CV	0.3	0.3	0.3	0.3
RPMF	1.3	1.3	1.3	1.3
Reasonable Potential	1.574	1.574	1.574	1.574
100/Critical dilution	4.348	4.348	4.348	4.348
Does Reasonable Potential Exist	No	No	No	No

PERMIT ACTION

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

Reasonable potential does not exist for lethal or sub-lethal endpoints for either species. There have been no lethal or sub-lethal WET test failures below the critical dilution of 23% during the current permit term from January 1, 2015 through December 31, 2019. At this time, there is insufficient evidence to support inclusion of limits.

14. SAMPLE TYPE AND FREQUENCY

Requirements for sample type and sampling frequency at Outfall 001 have been based on the current discharge permit. The requirements for sample type and sampling frequency at Outfall 002 have been based on the requirements for Outfall 001.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Outfall 001				
Flow	continuous	totalizing meter	continuous	totalizing meter
Upstream Flow in Big Creek	continuous	meter	continuous	meter
Minimum Upstream Flow in Big Creek before Discharge Is Allowed				
(January – February)	continuous	meter	continuous	meter
(March – December)	continuous	meter	continuous	meter
Effluent Flow as a % of Upstream Flow in Big Creek				
(January – February)	continuous	calculate	continuous	calculate
(March – December)	continuous	calculate	continuous	calculate
CBOD ₅	three/month	composite	three/month	composite
TSS	three/month	composite	three/month	composite
NH ₃ -N				
(January – February)	three/month	composite	three/month	composite
(May – October)	three/month	composite	three/month	composite
(March, April, November, December)	three/month	composite	three/month	composite
DO				
(January – February)	three/month	grab	three/month	grab
(May – October)	three/month	grab	three/month	grab
(March, April, November, December)	three/month	grab	three/month	grab
FCB				
(May – September)	three/month	grab	three/month	grab

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
(October – April)	three/month	grab	three/month	grab
pH	three/month	grab	three/month	grab
Outfall 002				
Flow	N/A	N/A	continuous	totalizing meter
Upstream Flow in Big Creek	N/A	N/A	continuous	meter
Minimum Upstream Flow in Big Creek before Discharge Is Allowed				
(March – May)	N/A	N/A	continuous	meter
(June – February)	N/A	N/A	continuous	meter
Effluent Flow as a % of Upstream Flow in Big Creek				
(March – May)	N/A	N/A	continuous	calculate
(June – February)	N/A	N/A	continuous	calculate
CBOD ₅	N/A	N/A	three/month	composite
TSS	N/A	N/A	three/month	composite
NH ₃ -N				
(January – February)	N/A	N/A	three/month	composite
(March – May, October – December)	N/A	N/A	three/month	composite
(June – September)	N/A	N/A	three/month	composite
DO				
(January – February)	N/A	N/A	three/month	grab
(March – May, October – December)	N/A	N/A	three/month	grab
(June – September)	N/A	N/A	three/month	grab
FCB				
(May – September)	N/A	N/A	three/month	grab
(October – April)	N/A	N/A	three/month	grab
pH	N/A	N/A	three/month	grab

15. PERMIT COMPLIANCE SCHEDULE

A Schedule of Compliance has not been included in this permit. Compliance with all permit requirements is required on the effective date of the permit.

16. 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.

17. SOURCES

The following sources were used to draft the permit:

- A. Application No. AR0034347 received February 20, 2019, with all additional information submitted by July 18, 2019.
- B. Arkansas Water Quality Management Plan (WQMP).
- C. APC&EC Regulation No. 2.
- D. APC&EC Regulation No. 3.
- E. APC&EC 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 AR0034347.
- H. Discharge Monitoring Reports (DMRs).
- I. “2016 Integrated Water Quality Monitoring and Assessment Report”, ADEQ.
- J. “2016 List of Impaired Waterbodies (303(d) List)”, ADEQ, July 2017.
- K. *TMDL for Dissolved Oxygen for Big Creek near Sheridan, Arkansas*, January 16, 2007 (Outfall 001)
- L. Continuing Planning Process (CPP).
- M. Technical Support Document for Water Quality-based Toxic Control.
- N. Inspection Report dated April 13, 2016.
- O. Compliance Review Memo from Christina Brown to Loretta Carstens, P.E. dated March 14, 2019.
- P. *Water Quality Modeling for City of Sheridan Proposed Discharge to Hurricane Creek* dated February 15, 2019.

18. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on October 30, 2019. The last day of the comment period was December 2, 2019.

A summary of the comments received by the ADEQ during the public comment period and response to the comments are included with this permit decision. The response to comments also includes a discussion of any substantial changes from the draft permit.

Copies of the draft permit and public notice were sent via email to the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Department of Arkansas Heritage, the EPA, and the Arkansas Department of Health.

19. PERMIT FEE

In accordance with Reg. No. 9.403(B), the annual fee for the permit is calculated from the Design Flow (Q, in MGD) as follows:

$$\text{Fee} = \$200 + (5,600 \times Q) = \$200 + (5,600 \times 0.676) = \$3,986$$

20. POINT OF CONTACT

For additional information, contact:

Loretta Carstens, P.E.
Permits Branch, Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0612

**RESPONSE TO COMMENTS
FINAL PERMITTING DECISION**

Permit No.: AR0034347

Applicant: City of Sheridan
Sheridan Wastewater Treatment Facility

Prepared by: Loretta Carstens, P.E.

The following are responses to comments received by the Arkansas Department of Environmental Quality (ADEQ) regarding the draft permit number referenced above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17, Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation No. 8 (Administrative Procedures), and Arkansas Code Annotated (A.C.A.) §8-4-203(e)(2).

Introduction

The above permit was submitted for public comment on October 30, 2019. The public comment period ended on December 2, 2019.

This document contains a summary of the comments that the ADEQ received during the public comment period.

Comment 1: The City of Sheridan requests that composite samples for toxicity testing be defined using the same definition as composite samples for other parameters (item 9 in Part IV; "... 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, ..."). Collecting 12 subsamples over a 24-hour period seems unnecessary because the water quality of the effluent is not expected to vary significantly over a 24-hour period. For both outfalls, the effluent comes from a large holding pond that also acts as an equalization basin with a long residence time due to its large surface area (over 12 acres) and large capacity (over 40 million gallons).

Response 1: The definition of composite sample in the WET language in Part II of the permit will be revised to read as follows: "Composite sample" is a mixture of grab samples collected at the same sampling point at different times, formed 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.

Comment 2: The City of Sheridan requests that the permit include language that allows them to conduct a toxicity test for one outfall and use the results for both outfalls during certain periods of the year. This would apply only for tests conducted during July – August and during October – November because those are the only periods when the critical dilution is the same for both

outfalls and the months during which testing must occur are the same for both outfalls (see the following table):

Outfall 001		Outfall 002		Common for both outfalls	
Months	Critical dilution	Months	Critical dilution	Months	Critical dilution
Jan – Feb	31%	Dec – Feb	23%		Different
Mar – Jun	23%	Mar – May	13%		Different
Jul – Sep	23%	Jun – Aug	23%	Jul – Aug	23%
Oct – Dec	23%	Sep – Nov	23%	Oct – Nov	23%

The water that is discharged in both of these outfalls comes from the same place – the southeast corner of the large holding pond mentioned above (surface area of over 12 acres and capacity of over 40 million gallons). The intake pipe for Outfall 002 will be within about 20 ft of the existing intake pipe for Outfall 001.

Response 2: Outfall 001 discharges to Big Creek while Outfall 002 will discharge directly to Hurricane Creek. One WET test with dilution water from one receiving stream will not be adequate to represent the potential for toxicity in the other receiving stream. Therefore, the permit will not be changed.