

**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.),

Entergy Arkansas, LLC  
White Bluff Plant

is authorized to discharge cooling tower blowdown, and overflow from the clear water holding pond (plant and switchyard runoff, treated sanitary waste, coal pile runoff, ash disposal runoff, ash dust suppression water, chemical cleaning waste, water treatment waste, boiler blowdown, ash landfill leachate, reuse for cooling tower makeup, and bottom ash transport water) from a facility located as follows: 1100 White Bluff Road, Redfield, AR 72132, approximately 2.5 miles southeast of Redfield on State Highway 365 in Jefferson County, Arkansas.

Latitude: 34° 25' 11.40" N; Longitude: 92° 9' 20.60" W

to receiving waters named:

Arkansas River in Segment 3C of the Arkansas River Basin.

The outfall is located at the following coordinates:

Outfall 001: Latitude: 34° 25' 11.3" N; Longitude: 92° 7' 14.1" W

Outfall 002: Latitude: 34° 25' 10.7" N; Longitude: 92° 7' 15.7" 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  
Modification Effective Date: June 1, 2023  
Expiration Date: February 28, 2025

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Alan J. York  
Associate Director, Office of Water Quality  
Arkansas Department of Environmental Quality

05/30/2023

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Modification Issue Date

**PART I  
 PERMIT REQUIREMENTS**

**SECTION A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - cooling tower blowdown.**

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.

| <u><b>Effluent Characteristics</b></u>   | <u><b>Discharge Limitations</b></u>              |                   |  |                            | <u><b>Monitoring Requirements</b></u> |                  |
|--|--|-------------------|--|----------------------------|---------------------------------------|------------------|
|  | Mass<br>(lbs/day, unless<br>otherwise specified) |                   | Concentration<br>(mg/l, unless<br>otherwise specified) |                            | Frequency                             | Sample Type      |
|  | Monthly<br>Avg.                                  | Daily<br>Max      | Monthly<br>Avg.  | Daily<br>Max               |                                       |                  |
| Flow   | N/A  | N/A               | 11.5 MGD   | 29.3 MGD                   | continuous                            | record           |
| Temperature  | N/A  | N/A               | 105°F  | 105°F                      | continuous                            | record           |
| Free Available Chlorine (FAC)  | 1.6 <sup>5</sup>                                 | 10.2 <sup>5</sup> | 0.2  | 0.5                        | once/week                             | grab             |
| Total Recoverable Chromium <sup>1</sup>  | 19.2   | 48.9              | 0.2  | 0.2                        | N/A <sup>1</sup>                      | N/A <sup>1</sup> |
| Total Recoverable Zinc <sup>1</sup>  | 95.9   | 244.4             | 1.0  | 1.0                        | N/A <sup>1</sup>                      | N/A <sup>1</sup> |
| Total Recoverable Arsenic  | Report<br>(µg/l)                                 | Report<br>(µg/l)  | Report<br>(µg/l)                                       | Report<br>(µg/l)           | once/quarter <sup>2</sup>             | grab             |
| pH   | N/A  | N/A               | <u>Minimum</u><br>6.0 s.u.                             | <u>Maximum</u><br>9.0 s.u. | once/week                             | grab             |
| Chronic WET Testing <sup>3</sup>   |  |                   |  |                            |                                       |                  |
| <b><u>Pimephales promelas (Chronic)</u></b> <sup>3</sup><br>Pass/Fail Lethality (7-day NOEC) TLP6C<br>Pass/Fail Growth (7-day NOEC)TGP6C<br>Survival (7-day NOEC) TOP6C<br>Coefficient of Variation (Growth) TQP6C<br>Growth (7-day NOEC) TPP6C<br>Pass/Fail Retest 1 (7-day NOEC) 22418<br>Pass/Fail Retest 2 (7-day NOEC) 22419<br>Pass/Fail Retest 3 (7-day NOEC) 51444                   | N/A  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/quarter                          | composite        |
|  |  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/quarter                          | composite        |
|  | N/A  |                   | Report %   | Report %                   | once/quarter                          | composite        |
|  |  |                   | Report %   | Report %                   | once/quarter                          | composite        |
|  | N/A  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
|  |  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
|  | N/A  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
|  |  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
| <b><u>Ceriodaphnia dubia (Chronic)</u></b> <sup>3</sup><br>Pass/Fail Lethality (7-day NOEC) TLP3B<br>Pass/Fail production (7-day NOEC)TGP3B<br>Survival (7-day NOEC) TOP3B<br>Coefficient of Variation (Reproduction)<br>TQP3B<br>Reproduction (7-day NOEC) TPP3B<br>Pass/Fail Retest 1 (7-day NOEC) 22415<br>Pass/Fail Retest 2 (7-day NOEC) 22416<br>Pass/Fail Retest 3 (7-day NOEC) 51443 | N/A  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/quarter                          | composite        |
|  |  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/quarter                          | composite        |
|  | N/A  |                   | Report %   | Report %                   | once/quarter                          | composite        |
|  |  |                   | Report %   | Report %                   | once/quarter                          | composite        |
|  | N/A  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
|  |  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
|  | N/A  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |
|  |  |                   | Report (Pass=0/Fail=1)                                 | Report (Pass=0/Fail=1)     | once/month <sup>4</sup>               | composite        |

<sup>1</sup> Monitoring for Chromium and Zinc is waived at Outfall 001 during this permit term. See Part II.9.

<sup>2</sup> For one year from the effective date of the permit. See Part II.19 (Arsenic Condition).

<sup>3</sup> See Part II.6 (Chronic WET Testing Requirements).

<sup>4</sup> **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 quarterly DMR)

<sup>5</sup> Mass limits based on discharge of FAC for a maximum of 2 hours per day. See Part II.8.

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 at the following coordinates: Latitude: 34° 25' 9.2" N; Longitude: 92° 8' 7.0" W.

**SECTION A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS:** OUTFALL 002 – overflow from the clear water holding pond consisting of plant and switchyard runoff, treated sanitary waste, coal pile runoff, ash disposal runoff, ash dust suppression water, chemical cleaning waste, water treatment waste, boiler blowdown, ash landfill leachate, reuse for cooling tower makeup, and bottom ash transport water

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.

| <u>Effluent Characteristics</u>  | <u>Discharge Limitations</u>                     |              |  |  | <u>Monitoring Requirements</u>   |             |
|--|--|--------------|--|--|--|-------------|
|  | Mass<br>(lbs/day, unless<br>otherwise specified) |              | Concentration<br>(mg/l, unless<br>otherwise specified)   |  | Frequency  | Sample Type |
|  | Monthly<br>Avg.                                  | Daily<br>Max | Monthly<br>Avg.  | Daily<br>Max   |  |             |
| Flow   | N/A  | N/A          | Report,<br>MGD   | Report,<br>MGD   | once/day <sup>1</sup>  | estimate    |
| Rain Intensity (inches)  | N/A  | Report       | N/A  | N/A  | once/day <sup>2</sup>  | rain gauge  |
| Total Suspended Solids (TSS)   | N/A  | N/A          | 30.0   | 50.0   | once/day <sup>1</sup>  | grab        |
| Oil and Grease (O&G)   | N/A  | N/A          | 10.0   | 15.0   | once/day <sup>1</sup>  | grab        |
| Total Iron <sup>3</sup>  | N/A  | N/A          | 1.0  | 1.0  | once/day <sup>1</sup>  | grab        |
| Total Copper <sup>3</sup>  | N/A  | N/A          | 123.8 (µg/l)   | 248.3 (µg/l)   | once/day <sup>1</sup>  | grab        |
| Total Recoverable Arsenic  | N/A  | N/A          | Report<br>(µg/l)   | Report<br>(µg/l)   | once/quarter <sup>4</sup>  | grab        |
| Escherichia coli Bacteria (E-coli)   |  |              | (colonies/100ml)   |  |  |             |
| (May – September)  | N/A  | N/A          | 126  | 410  | two/5 months <sup>5</sup>  | grab        |
| (October – April)  | N/A  | N/A          | 630  | 2050   | two/7 months <sup>5</sup>  | grab        |
| pH   | N/A  | N/A          | <u>Minimum</u><br>6.0 s.u.   | <u>Maximum</u><br>9.0 s.u.   | once/day <sup>1</sup>  | grab        |
| Chronic WET Testing <sup>6</sup>   |  |              |  |  |  |             |
| <b><u>Pimephales promelas (Chronic)</u></b> <sup>6</sup><br>Pass/Fail Lethality (7-day NOEC) TLP6C<br>Pass/Fail Growth (7-day NOEC)TGP6C<br>Survival (7-day NOEC) TOP6C<br>Coefficient of Variation (Growth) TQP6C<br>Growth (7-day NOEC) TPP6C<br>Pass/Fail Retest 1 (7-day NOEC) 22418<br>Pass/Fail Retest 2 (7-day NOEC) 22419<br>Pass/Fail Retest 3 (7-day NOEC) 51444                   | N/A  |              | Report (Pass=0/Fail=1)<br>Report (Pass=0/Fail=1)<br>Report %<br>Report %<br>Report %<br>Report (Pass=0/Fail=1)<br>Report (Pass=0/Fail=1)<br>Report (Pass=0/Fail=1)     | once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br>once/month <sup>8</sup><br>once/month <sup>8</sup><br>once/month <sup>8</sup>     | composite<br>composite<br>composite<br>composite<br>composite<br>composite<br>composite<br>composite |             |
| <b><u>Ceriodaphnia dubia (Chronic)</u></b> <sup>6</sup><br>Pass/Fail Lethality (7-day NOEC) TLP3B<br>Pass/Fail production (7-day NOEC)TGP3B<br>Survival (7-day NOEC) TOP3B<br>Coefficient of Variation (Reproduction)<br>TQP3B<br>Reproduction (7-day NOEC) TPP3B<br>Pass/Fail Retest 1 (7-day NOEC) 22415<br>Pass/Fail Retest 2 (7-day NOEC) 22416<br>Pass/Fail Retest 3 (7-day NOEC) 51443 | N/A  |              | Report (Pass=0/Fail=1)<br>Report (Pass=0/Fail=1)<br>Report %<br><br>Report %<br>Report %<br>Report (Pass=0/Fail=1)<br>Report (Pass=0/Fail=1)<br>Report (Pass=0/Fail=1) | once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br><br>once/quarter <sup>7</sup><br>once/quarter <sup>7</sup><br>once/month <sup>8</sup><br>once/month <sup>8</sup><br>once/month <sup>8</sup> | composite<br>composite<br>composite<br><br>composite<br>composite<br>composite<br>composite          |             |

<sup>1</sup> When discharging. Monitoring does not need to be performed more than once per day if there are multiple discharge events in a single calendar day. Monitoring shall be performed once per calendar day if the duration of the discharge is greater than 24 hours. No discharge is allowed except in the case of rainfall equivalent to a 10-year 24-hour storm event (See Part II.13).  
<sup>2</sup> When raining. This is to verify the amount of rainfall in the event of a discharge from Outfall 002.  
<sup>3</sup> See Part II.5, Metals Condition.  
<sup>4</sup> Until four samples have been taken and analyzed. See Part II.19 (Arsenic Condition).  
<sup>5</sup> A minimum of one E-coli sample will be taken and analyzed in the following periods if a discharge occurs within the respective period: January-April, May-June, July-September, and October-December.

<sup>6</sup> See Part II.6 (Chronic WET Testing Requirements).

<sup>7</sup> WET testing must be performed if a discharge occurs within the quarterly monitoring period.

<sup>8</sup> **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 quarterly DMR)

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, prior to the receiving stream.

**SECTION B. PERMIT COMPLIANCE SCHEDULE**

None

## **PART II OTHER CONDITIONS**

1. The operator of this wastewater treatment facility shall hold a Basic Industrial license from the State of Arkansas in accordance with APC&EC Regulation No. 3.
2. In accordance with 40 C.F.R. §§ 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 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. The new information includes (but is not limited to):
  - a. 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;
  - b. A Total Maximum Daily Load (TMDL) is established or revised for the water body;
  - c. Effluent limitation guidelines (ELGs) applicable to the facility are promulgated or are revised in a way to make reopening the permit necessary to address compliance.

### 3. Other Specified Monitoring Requirements

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

- The monitoring and analytical instruments are consistent with accepted scientific practices.
- The requests shall be submitted in writing to the Permits Section of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
- The method and/or instrument is in compliance with 40 C.F.R. Part 136 or approved in accordance with 40 C.F.R. § 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 Control/Quality Assurance program.

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

### 4. [Reserved]

### 5. Minimum Quantification Level for Metals

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

| Pollutant                 | MQL ( $\mu\text{g/l}$ ) |
|---------------------------|-------------------------|
| Copper, Total Recoverable | 0.5                     |
| Iron, Total Recoverable   | 99                      |

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

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

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

## 6. 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 OUTFALLS: | 001 and 002  |
| CRITICAL DILUTION (%):             | 8 (Outfall 001)<br>15 (Outfall 002)                            |
| EFFLUENT DILUTION SERIES (%):      | 3, 5, 6, 8, 11 (Outfall 001)<br>6, 8, 11, 15, 20 (Outfall 002) |
| TESTING FREQUENCY:                 | once/quarter   |
| COMPOSITE SAMPLE TYPE:             | Defined at PART II.6.C.iv                                      |
| TEST SPECIES/METHODS:              | 40 C.F.R. 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 once per quarter 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 quarterly 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 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE<sub>SL</sub>) 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. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.
- 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 quarterly 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 quarterly 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 quarterly DMR);
  - (D) If testing on a quarterly 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 quarterly 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 quarterly 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 quarterly 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 quarterly DMR);
- (D) If testing on a quarterly 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 quarterly 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<sub>SL</sub>) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE<sub>L</sub>) 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<sub>SL</sub> 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. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 C.F.R. § 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 twelve consecutive quarters (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 - 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 once per quarter until the permit is re-issued.
- v. For administratively continued facilities where permit renewal was held up by no fault of the permittee, the following language regarding WET testing frequency reduction applies after permit renewal:

- The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing after the expiration date of the previous permit, for one or both test species, provided that all of the following conditions are met:
- a. The permittee tested quarterly upon the expiration date of that permit, and
  - b. The issuance of the renewed permit was not delayed by any fault of the permittee, and
  - c. No lethal or sub-lethal effects are demonstrated at or below the critical dilution for the first four consecutive quarters of testing after the expiration date of the previous permit.
7. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.
8. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to ADEQ that the units in a particular location cannot operate at or below this level of chlorination.
9. 126 priority pollutants listed in Appendix A to 40 C.F.R. Part 423

The discharge from Outfall 001 shall have no detectable amount of the 126 priority pollutants listed in Appendix A to 40 C.F.R. Part 423 (contained in chemicals added for cooling tower maintenance), except for Chromium and Zinc. "No detectable amount" means undetectable when analyzed in accordance with the analytical methods in 40 C.F.R. Part 136. Limits for Chromium and Zinc are included in Part IA, Section A1.

Chemicals containing the 126 priority pollutants in Appendix A of 40 C.F.R. Part 423, including Chromium and Zinc, cannot be used for cooling tower maintenance without the prior approval of the Department. The permit may be reopened to include additional effluent limitations / monitoring requirements as a result of Departmental approval.

Requirements to monitor the discharge at Outfall 001 for all 126 priority pollutants listed in Appendix A of 40 C.F.R. Part 423, including chromium and zinc, is waived during this permit term based on 40 C.F.R. § 122.44(a)(2), and a certification dated June 12, 2019. This waiver is only valid for the term of this permit. The permittee must request this monitoring waiver when applying for a reissued permit. The monitoring waiver request must be accompanied by a signed certification that the facility does not use any cooling tower maintenance chemicals that contain any priority pollutant listed in Appendix A of 40 C.F.R. Part 423, including chromium or zinc. The signed certification shall include the statements in 40 C.F.R. § 122.22(d).

10. For the purpose of this permit, the daily maximum temperature discharged at Outfall 001 shall be calculated once per day as a flow weighted average temperature (FWAT). Each instantaneous flow and temperature shall be recorded each day at equal time intervals

throughout the day at intervals not exceeding two hours. The FWAT shall be determined using the following formula:

$$\text{FWAT} = \frac{\sum (\text{Instantaneous Flow} \times \text{Instantaneous Temperature})}{\sum (\text{Instantaneous Flows})}$$

The monthly average temperature discharged from Outfall 001 shall be determined by the arithmetic average of all FWATs determined during the calendar month.

11. The term "free available chlorine" shall mean the value obtained using the amperometric titration method for free available chlorine described in the latest edition of "Standard Methods for the Examination of Water and Wastewater" as approved by ADPC&E. If any individual analytical test result is less than the required minimum quantification level (MQL), a value of zero (0) may be used for that individual result for the Discharge Monitoring report (DMR) calculations and reporting requirements.
12. Sampling and reporting for Total Copper and Total Iron is only required when discharging chemical cleaning waste at Outfall 002.
13. Discharge requirements for Outfall 002
  - a. The applicant is required to maintain adequate storage capacity for a storm event up to a 10-year, 24-hour storm event. This capacity must exclude 2.0 feet freeboard which must exist above the total volume required for normal operation plus the required storm surge capacity.
  - b. The term "10-year, 24-hour storm event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined by the U.S. Dept. of Commerce Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, or equivalent regional or rainfall probability information developed therefrom.
  - c. All discharges from Outfall 002 must be caused by an amount of rainfall equivalent to a 10-year, 24-hour storm event. Discharge from Outfall 002 is allowable if multiple storm events on consecutive days produce a total rainfall amount equal to, or greater than, that of a single 10-year, 24-hour storm event. If a discharge occurs from Outfall 002 the permittee must submit rainfall intensity data with the DMR for the reporting period in which the discharge occurred.
14. [Reserved]
15. Cooling Water Intake Structure (CWIS) Flow Monitoring
  - A. The facility shall operate and maintain a closed-cycle recirculating cooling water system

as defined in 40 C.F.R. § 125.92(c) in accordance with Best Management Practices (BMPs) that will minimize any Adverse Environmental Impacts (AEI) from the cooling water intake structure (CWIS).

- B. The facility shall monitor the actual intake flows at a minimum frequency of daily. The monitoring must be representative of normal operating conditions, and must include measuring cooling water withdrawals, make-up water, and blow down volume. In lieu of daily intake flow monitoring, the facility may monitor the cycles of concentration at a minimum frequency of daily.

Actual intake flows may be calculated using the pump run time and pump capacity. The actual intake flows determined under this condition, and the daily flow monitoring of blowdown at Outfall 001, will satisfy the monitoring requirements under this condition. The daily monitoring records shall be retained in accordance with Part III.C.7 of this permit.

- C. Pursuant to 40 C.F.R. § 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

16. [Reserved]

#### 17. Cooling Water Intake Structure (CWIS) Annual Certification Statement and Report

An annual certification statement and report must be submitted to the Department each year by the anniversary date of the effective date of the permit. The certification statement and report must be signed by the Responsible Official for the permit.

- A. The report must include a summary of any modifications to, or changes in the operation of, the CWIS at your facility that impacts cooling water withdrawals. In addition, any revisions to the information required in 40 C.F.R. § 122.21 (r) must be submitted with the next permit renewal application.
- B. If the information contained in the previous year's annual certification statement and report is still pertinent, a letter stating such, signed by the Responsible Official for the permit, may be submitted to the Department, along with any applicable data. The letter will meet the requirements of this part for an annual certification statement and report.

#### 18. Visual inspections of the CWIS

Visual inspections of the on-shore portions of the CWIS shall be conducted during the period the CWIS is in operation. Inspections shall be conducted at least weekly to ensure that any technologies operated to comply with 40 C.F.R. § 125.94 are maintained and operated to function as designed. Records of the inspections shall be maintained on-site for a period of 3 years.

19. The requirement to sample, analyze, and report the Monthly Average and Daily Maximum values of Concentration and Mass of Total Recoverable Arsenic in the effluent from Outfall 001, in accordance with the requirements in Part IA Section A1 of the permit, is applicable for

one year from the effective date of the permit. After the results of four (4) samples have been reported in accordance with the above requirement, the permittee may cease the monitoring and reporting of Total Recoverable Arsenic from Outfall 001.

The monitoring and reporting requirement for Monthly Average and Daily Maximum values of Concentration of Total Recoverable Arsenic in the effluent from Outfall 002, in accordance with the requirements in Part IA Section A2 of the permit, is applicable until four (4) samples have been collected and analyzed, and the results reported. After the results of four (4) samples have been reported in accordance with the above requirement, the permittee may cease the monitoring and reporting of Total Recoverable Arsenic from Outfall 002.

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

| Pollutant                 | MQL (µg/l) |
|---------------------------|------------|
| Total Recoverable Arsenic | 0.5        |

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

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

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

## 20. Annual Progress Report for Permanent Cessation of Coal Combustion

After submission of the Notice of Planned Participation for permanent cessation of coal combustion, in accordance with 40 C.F.R. § 423.19(f)(1), a progress report shall be submitted annually to the Office of Water Quality, in accordance with 40 C.F.R. § 423.19(f)(3). The report shall detail the completion of any interim milestones listed in the Notice of Planned Participation since the previous progress report, provide a narrative discussion of any completed, missed, or delayed milestones, and provide updated milestones, in accordance with 40 C.F.R. § 423.19(f)(4).

21. Oil, grease, or petrochemical substances shall not be discharged to the 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. No discharge shall cause visible sheen as defined in Part IV of this permit. Any occurrences

of the above referenced effects resulting from activities of the permittee shall be reported in accordance with Permit III.D.6.

## **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 C.F.R. §§ 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 C.F.R. § 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 C.F.R. Parts 503, 257, and 258.
- B. Any changes to the permittee's disposal practices described in the Fact Sheet, 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 per the manufacturer's specifications 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 C.F.R. 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 C.F.R. § 127.11 (a)(1) and 40 C.F.R. § 127.16 (a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory Authorities must initially request access for a NetDMR account. Once a NetDMR account is

established, access to electronic filing should use the following link <https://netdmr.epa.gov>. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 C.F.R. § 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 25<sup>th</sup> 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 C.F.R. 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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**

Please be aware that the notifications can be sent by email to [water-enforcement-report@adeq.state.ar.us](mailto:water-enforcement-report@adeq.state.ar.us) or at 501-682-0624 for immediate reporting:

- A. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances to the Enforcement Branch of the Office of Water Quality of DEQ. 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 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.
- C. The Director may waive the written report on a case-by-case basis if the notification has been received within 24 hours to the Enforcement Branch of the Office of Water Quality of the DEQ.

## 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 including Existing Manufacturing, Commercial, Mining, and Silvicultural 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 including those listed in 40 C.F.R. § 401.15 which is not limited in the permit, if that discharge will exceed the highest of the “notification levels” described in 40 C.F.R. § 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 including those listed in 40 C.F.R. § 401.15 which is not limited in the permit, if that discharge will exceed the highest of the “notification levels” described in 40 C.F.R. § 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 C.F.R. 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 C.F.R. § 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **“Act”** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **“Administrator”** means the Administrator of the U.S. Environmental Protection Agency.
3. **“APC&EC”** means the Arkansas Pollution Control and Ecology Commission.
4. **“Applicable effluent standards and limitations”** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. **“Applicable water quality standards”** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Regulation No. 2, as amended.
6. **“Best Management Practices (BMPs)”** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
7. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 C.F.R. § 122.41(m)(1)(i).
8. **“Composite sample”** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
9. **“Daily Discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
  - A. **Mass Calculations:** For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total mass of pollutant discharged over the sampling day.
  - B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
10. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month.
11. **“Department”** means the Arkansas Department of Environmental Quality (ADEQ).
12. **“Director”** means the Director of the Arkansas Department of Environmental Quality.
13. **“Dissolved oxygen limit”** shall be defined as follows:
  - A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month.

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

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

    - A. **MONTHLY:**

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

is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.
    - C. **QUARTERLY:**
      1. is defined as a **fixed calendar quarter** or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December.

2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.
- D. **SEMI-ANNUAL:**  
is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.
- E. **ANNUAL or YEARLY:**  
is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.
23. **“National Pollutant Discharge Elimination System”** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
  24. **“POTW”** means Publicly Owned Treatment Works;
  25. **“Reduction of CBOD5/BOD5 and TSS in mg/l Formula”**  
$$[(\text{Influent} - \text{Effluent}) / \text{Influent}] \times 100$$
  26. **“Severe property damage”** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
  27. **“Sewage sludge”** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
  28. **“7-Day Average”** Also known as “average weekly” means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the “daily discharges” of all effluent samples collected during a calendar week in colonies per 100 ml.
  29. **“Treatment works”** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.
  30. **Units of Measure:**  
**“MGD”** shall mean million gallons per day.  
**“mg/l”** shall mean milligrams per liter or parts per million (ppm).  
**“µg/l”** shall mean micrograms per liter or parts per billion (ppb).

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

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

“**s.u.**” shall mean standard units.

31. “**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless of improper operations.
32. “**Visible sheen**” means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
33. “**Weekday**” means Monday – Friday.

## Final Fact Sheet

*All changes to the Fact Sheet are italicized.*

*This is a modified permit, and only the modified portion of the permit can be reopened for comment.*

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for the *modification* of discharge Permit Number AR0036331 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 35-00110 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:

Entergy Arkansas, LLC  
White Bluff Plant  
P.O. Box 551  
Little Rock, AR 72203-0551

The facility address is:

Entergy Arkansas, LLC  
White Bluff Plant  
1100 White Bluff Road  
Redfield, AR 72132

### 3. PREPARED BY

The permit was prepared by:

Guy Lester, P.E.  
Staff Engineer  
NPDES Discharge Permits Section  
Office of Water Quality  
(501) 682-0023  
Email: [Guy.Lester@adeq.state.ar.us](mailto:Guy.Lester@adeq.state.ar.us)

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### 4. PERMIT ACTIVITY

Previous Permit Effective Date: *March 1, 2020*  
Previous Permit Expiration Date: *February 28, 2025*

***THIS IS A MODIFIED PERMIT. IN ACCORDANCE WITH 40 C.F.R. § 122.62, ONLY THOSE PORTIONS OF THE PERMIT WHICH HAVE BEEN MODIFIED ARE OPEN FOR COMMENT AT THIS TIME.***

*The permittee submitted a permit modification application on August 30, 2022. The modification is to remove the prohibition against the discharge of bottom ash transport water based on revisions to the ELGs in 40 C.F.R. Part 423 effective December 14, 2020, and to remove references to the recycle ponds due to changes in the treatment system at the facility. The current discharge permit is modified for the remainder of the 5-year term, in accordance with regulations promulgated at 40 C.F.R. § 122.46(a).*

## 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  
BOD<sub>5</sub> - five-day biochemical oxygen demand  
BPJ - best professional judgment  
BPT - best practicable control technology currently available  
CBOD<sub>5</sub> - carbonaceous biochemical oxygen demand  
CD - critical dilution  
CFR - Code of Federal Regulations  
cfs - cubic feet per second  
COD - chemical oxygen demand  
COE - United States Corp of Engineers  
CPP - continuing planning process  
CWA - Clean Water Act  
DMR - discharge monitoring report  
DO - dissolved oxygen  
ELG - effluent limitation guidelines  
EPA - United States Environmental Protection Agency  
ESA - Endangered Species Act  
FCB - fecal coliform bacteria  
gpm - gallons per minute  
MGD - million gallons per day  
MQL - minimum quantification level  
NAICS - North American Industry Classification System  
NH<sub>3</sub>-N - ammonia nitrogen  
NO<sub>3</sub> + NO<sub>2</sub>-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  
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:

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331\\_Entergy%20White%20Bluff%20Compliance%20Review\\_20170216.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331_Entergy%20White%20Bluff%20Compliance%20Review_20170216.pdf)

**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 permittee mailing address has been removed from the permit cover page.*
2. *The discharge description on the cover page has been revised to include bottom ash transport water.*
3. *“Interim” has been removed from the title of Part IA Section A2.*
4. *The discharge description in Part IA Section A2 has been revised to remove “from the recycle ponds” and the superscript “9” footnote reference.*
5. *Footnote 9 at the bottom of Part IA Section A2 has been removed.*
6. *Part IA Section A3 has been removed. See Section 11.E below for details.*
7. *The prohibition against the discharge of bottom ash transport water has been removed from Part II.20. See Section 11.E below for details.*
8. *Part II.20 has been revised to include the requirement for annual progress reports on the permanent cessation of coal combustion.*
9. *The Schedule of Compliance in Part IB has been removed because the prohibition of the discharge of bottom ash transport water has been removed from the permit.*
10. *Part II.6.F.v has been added to the WET testing Monitoring Frequency Reduction requirements.*
11. *The Twenty-four Hour Report condition in Part III.D.6 has been revised.*
12. *The Changes in Discharge of Toxic Substances for Industrial Dischargers condition in Part III.D.8 has been revised.*

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

The outfalls are located at the following coordinates based on Google Earth using WGS84:

Outfall 001: Latitude: 34° 25' 11.3" N; Longitude: 92° 7' 14.1" W

Outfall 002: Latitude: 34° 25' 10.7" N; Longitude: 92° 7' 15.7" W

The receiving waters named:

Arkansas River in Segment 3C of the Arkansas River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 11110207 and Reach #005 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 receiving stream is not listed on the State's currently approved 303(d) list of impaired waterbodies (2018).

**B. Applicable Total Maximum Daily Load (TMDL) Reports**

There are no applicable TMDLs for the receiving stream. Therefore, the effluent limitations and monitoring requirements in the proposed permit are based on current technology and water quality standards requirements and are protective of the stream designated uses.

**C. Endangered Species**

The USF&WS determined, during the 60-day review period of the modification application required by 40 C.F.R. § 125.98(h), that the modification would have “no effect” on any listed species. The draft permit and Fact Sheet were sent to the USF&WS for review during the public comment period.

**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. Flow Limit: Outfall 001 = 11.5 MGD

Average Flow: Outfall 002 = intermittent (22.7 MGD was reported on EPA Form 2C as the long term average flow from the first discharge event in over 10 years during March 2018)

B. Type of Treatment:

Outfall 001 – none

Outfall 002 – oil/water separation, sedimentation, coagulation, and neutralization; sanitary treatment systems: (a) septic tanks and (b) primary settling tank, recirculation tank, packed-bed fixed-film recirculating filters, and chlorine disinfection

C. Discharge Description:

Outfall 001 – cooling tower blowdown

Outfall 002 – overflow from the clear water holding pond (plant and switchyard runoff, treated sanitary waste, coal pile runoff, ash disposal runoff, ash dust suppression water, chemical cleaning waste, water treatment waste, boiler blowdown, ash landfill leachate, reuse for cooling tower makeup, and bottom ash transport water

D. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 600 is greater than 80, this facility is classified as a Major industrial.

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 4911 or North American Industry Classification System (NAICS) code of 221112, the applicant's activities are the operation of steam electric power generating station.

10. **SOLIDS PRACTICES**

Solids and water are periodically removed from sumps and oil/water separators. Solids disposal shall be conducted in accordance with the conditions of Part III Section B.6 of the permit.

11. **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 C.F.R. §§ 122, 124, and Subchapter N), 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 C.F.R. § 124.7.

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

Following regulations promulgated at 40 C.F.R. § 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 C.F.R. § 122.44 (a) or on State water quality standards and requirements pursuant to 40 C.F.R. § 122.44 (d), whichever are more stringent as follows:

| Parameter                               | Water Quality-Based |                 | Technology-Based  |                 | Previous Permit   |                 | Final Permit      |                 |
|---|---------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
|   | Monthly Avg. mg/l   | Daily Max. mg/l | Monthly Avg. mg/l | Daily Max. mg/l | Monthly Avg. mg/l | Daily Max. mg/l | Monthly Avg. mg/l | Daily Max. mg/l |
| <b>Outfall 001</b>                      |                     |                 |                   |                 |                   |                 |                   |                 |
| Flow                                    | 11.5 MGD            | 29.3 MGD        | N/A               | N/A             | 11.5 MGD          | 23.1 MGD        | 11.5 MGD          | 29.3 MGD        |
| Temperature                             | 105° F              | 105° F          | N/A               | N/A             | 105° F            | 105° F          | 105° F            | 105° F          |
| FAC                                     | N/A                 | N/A             | 0.2               | 0.5             | 0.2               | 0.5             | 0.2               | 0.5             |
| Total Recoverable Chromium <sup>1</sup> | N/A                 | N/A             | 0.2               | 0.2             | 0.2               | 0.2             | 0.2               | 0.2             |
| Total Recoverable Zinc <sup>1</sup>     | N/A                 | N/A             | 1.0               | 1.0             | 1.0               | 1.0             | 1.0               | 1.0             |
| Total Recoverable Arsenic               | N/A                 | N/A             | Report (µg/l)     | Report (µg/l)   | N/A               | N/A             | Report (µg/l)     | Report (µg/l)   |
| pH                                      | 6.0-9.0 s.u.        |                 | 6.0-9.0 s.u.      |                 | 6.0-9.0 s.u.      |                 | 6.0-9.0 s.u.      |                 |
| <b>Outfall 002</b>                      |                     |                 |                   |                 |                   |                 |                   |                 |
| TSS                                     | N/A                 | N/A             | 27.0              | 50.0            | 30                | 100             | 27.0              | 50.0            |
| E-coli (col/100ml)                      |                     |                 |                   |                 |                   |                 |                   |                 |
| (May – September)                       | 126                 | 410             | N/A               | N/A             | 126               | 410             | 126               | 410             |
| (October – March)                       | 630                 | 2050            | N/A               | N/A             | 630               | 2050            | 630               | 2050            |
| (April)                                 | 630                 | 2050            | N/A               | N/A             | 126               | 410             | 630               | 2050            |
| Total Iron                              | N/A                 | N/A             | 1.0               | 1.0             | 1.0               | 1.0             | 1.0               | 1.0             |
| Total Copper                            | 123.8 (µg/l)        | 248.3 (µg/l)    | 1.0               | 1.0             | 532 (µg/l)        | 1000 (µg/l)     | 123.8 (µg/l)      | 248.3 (µg/l)    |
| Total Recoverable Arsenic               | N/A                 | N/A             | Report (µg/l)     | Report (µg/l)   | N/A               | N/A             | Report (µg/l)     | Report (µg/l)   |
| O&G                                     | 10.0                | 15.0            | 15.0              | 20.0            | 10                | 15              | 10.0              | 15.0            |
| pH                                      | 6.0-9.0 s.u.        |                 | 6.0-9.0 s.u.      |                 | 6.0-9.0 s.u.      |                 | 6.0-9.0 s.u.      |                 |

<sup>1</sup> See Section 11.E.1.b below.

**A. Justification for Limitations and Conditions of the Final Permit**

| Parameter                               | Water Quality or Technology | Justification  |
|---|-----------------------------|--|
| <b>Outfall 001</b>                      |                             |  |
| Flow                                    | Water Quality               | Reg. 2.502, CWA § 402(o), and previous permit  |
| Temperature                             | Water Quality               | Reg. 2.502, CWA § 402(o), and previous permit  |
| FAC                                     | Technology                  | 40 C.F.R. § 423.12(b)(7), 40 C.F.R. § 122.44(l), and previous permit   |
| Total Recoverable Chromium <sup>1</sup> | Technology                  | 40 C.F.R. § 423.13(d)(1)   |
| Total Recoverable Zinc <sup>1</sup>     | Technology                  | 40 C.F.R. § 423.13(d)(1)   |
|   |                             |  |
| Total Recoverable Arsenic               | Technology                  | A.C.A § 8-4-216 and the CPP  |
| pH                                      | Water Quality               | Reg. 2.504   |
| <b>Outfall 002</b>                      |                             |  |
| TSS                                     | Technology                  | 40 C.F.R. § 423.12(b)(3), (4), (5), and (11) for Monthly Avg. limit, 40 C.F.R. § 423.12(b)(9) for Daily Max. limit, 40 C.F.R. § 423.13(k)(2)(ii), 40 C.F.R. § 122.44(l), and previous permit |
| E-coli <sup>2</sup>                     | Water Quality               | Reg. 2.507, CWA § 402(o), and previous permit  |
| O&G                                     | Water Quality               | Reg. 2.510, CWA § 402(o), and previous permit  |
| Total Iron                              | Technology                  | 40 C.F.R. § 423.12(b)(5), 40 C.F.R. § 122.44(l), and previous permit   |
| Total Copper                            | Water Quality               | Reg. 2.508, CWA § 402(o), and previous permit  |
| Total Recoverable Arsenic (As)          | Technology                  | A.C.A § 8-4-216 and the CPP  |
| pH                                      | Water Quality               | Reg. 2.504, CWA § 402(o), and previous permit  |

<sup>1</sup> See Section 11.E.1.b below.

<sup>2</sup> Limits for E-coli have been included because treated sanitary wastewater is included in the effluent that discharges from Outfall 002. The seasonal limitations for E-coli for the month of April for have been revised to match the requirements of Reg. 2.507.

**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 C.F.R. § 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 C.F.R. § 122.44 (l)(2)(i).

The permit meets or exceeds the requirements of the previous permit, except for the Daily Max. flow limit for Outfall 001, the Daily Max. mass limits for FAC, Chromium, and Zinc, for Outfall 001, and the E-coli limits for the month of April for Outfall 002.

The Daily Max. flow from Outfall 001 has been increased from 23.1 MGD to 29.3 MGD (and the Daily Max. mass limits for FAC, Chromium, and Zinc have been increased based on the increased flow limit), based on new data for the maximum temperature of the Arkansas River (see Section 11.C.2 below for details). Since the less stringent flow limitation is based on new information not available at the time of the previous permit renewal, the change is not considered backsliding, in accordance with the exception listed in 40 C.F.R. § 122.44(l)(2)(i)(B)(1).

This revision of the E-coli limits for the month of April for Outfall 002 is allowed in accordance with CWA § 303(d)(4)(B) based on the seasonal limits defined in APC&EC Reg. 2.507.

### C. Limits Calculations

#### 1. Mass limits:

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

The calculation of the loadings (lbs per day) for FAC from Outfall 001 uses the following equation:

$$\text{lbs/day} = \text{Concentration (mg/l)} \times \text{Flow (MGD)} \times 8.34 \times 2/24$$

$$\text{Flow} = 11.5 \text{ MGD for Monthly Avg. FAC mass limit}$$

$$\text{Flow} = 29.3 \text{ MGD for Daily Max. FAC mass limit}$$

The factor 2/24 is based on the requirement that FAC is only allowed to be discharged from the generating units for a maximum of 2 hours per day (1 day = 24 hours).

No mass limits have been included for pollutants discharged from Outfall 002 because of the variable nature of the stormwater flows that are co-mingled with the facility wastewaters.

#### 2. Daily Maximum Limits:

The daily maximum limit for TSS is based on 40 C.F.R. § 423.12(b) (9), which is the most restrictive of the point source limits applicable to the waste streams from 40 C.F.R. §§ 423.12(b)(3), (4), (5), (9), and (11).

The daily maximum limits for E-coli and O&G are based on Regs. 2.507 and 2.510, respectively.

The daily maximum limit for Iron, Total, is based on 40 C.F.R. § 423.12(5).

The daily maximum limit for flow was calculated based on meeting the WQS for maximum temperature of the Arkansas River in Reg.2.502 using the following equation:

$$Q_{eDM} = [(M \times Q_{bmax}) \times (WQS_m - T_{bmax})] / (T_e - WQS_m)$$

where:

M = Mixing Zone Factor = 0.25

$Q_{bmax}$  = Critical background flow at max. temperature = 7Q10 = 819 cfs<sup>1</sup>

$WQS_m$  = Water Quality Standard max. temperature for Arkansas River = 32 °C

$T_{bmax}$  = Max. background temperature of receiving stream = 30.1 °C<sup>2</sup> (86.2 °F)

$T_e$  = Max. allowable temperature of the effluent = 40.6 °C (105 °F)

$$Q_{eDM} = [(0.25 \times 819) \times (32 - 30.1)] / (40.6 - 32)$$

$$Q_{eDM} = 45.2 \text{ cfs} = 29.3 \text{ MGD}$$

### 3. Temperature

The temperature limitations are continued from previous permit.

The calculations performed to confirm that the discharge will not cause the receiving stream (Arkansas River) to exceed the temperature requirements in Reg. 2.502 outside of the mixing zone may be found at the following web address:

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331\\_Temperature%20Evaluation\\_20180507.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331_Temperature%20Evaluation_20180507.pdf)

### 4. Water Quality Standards for ELG-limited pollutants

The ELGs promulgated under 40 C.F.R. § 423.12(b)(5) include limitations for Iron and Copper (see Section E below). 40 C.F.R. § 122.44(d)(5) requires that water quality-based limits be included in a permit if they are more stringent than limits promulgated under effluent limitation guidelines.

There is no WQS for Iron in Reg. 2.508, so the ELG limit for Iron has been included in the permit.

Water-quality based limitations for Total Copper in the previous permit were calculated on the maximum flow of the only 2 discharges from Outfall 002 reported in the 10 years prior to the renewal of the permit. A discharge occurred from Outfall 002 during the month of March 2018. The average discharge was reported as 22.7 MGD (35.1 cfs). Revised water-quality based limitations for Total Copper were calculated using the procedure from Part IV.B of the ADEQ Discharge Permit, Toxic Control Implementation Procedure in Appendix D of the CPP. The calculated water-quality

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<sup>1</sup> Ref.: "Low-Flow Characteristics and Regionalization of Low-Flow Characteristics for Selected Streams in Arkansas", U.S. Dept. of the Interior, U.S. Geological Survey, Scientific Investigations Report 2008-5065.

<sup>2</sup> Ref.: Stream Data (April 7, 2013 - March 27, 2018) from Arkansas monitoring station ARK0046 on the Arkansas River.

based limitations for Total Copper were more stringent than the ELGs. Therefore, water quality-based limitations for Total Copper have been included as the limitations for Outfall 002 in Part IA, Section A2 of the permit.

| Water Quality-based Copper Limitations |              |            |
|--|--------------|------------|
| Parameter                              | Monthly Avg. | Daily Max. |
| Total Copper                           | 123.8 µg/l   | 248.3 µg/l |

The water quality-based limitation calculations for Copper can be viewed on the Department's website at the following address:

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331\\_WQ-based%20Copper%20Limit%20Calculation\\_20180503.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331_WQ-based%20Copper%20Limit%20Calculation_20180503.pdf)

#### 5. Cooling Water Intake Structures (CWISs) - CWA § 316(b)

EPA promulgated the Existing Facilities Rule pursuant to Clean Water Act Section 316(b) on August 15, 2014. The rule became effective on October 14, 2014. This Existing Facilities Rule is found in Subpart J of 40 C.F.R. Part 125 (§125.90 through § 125.99). Subpart J establishes the 316(b) requirements that apply to CWIS at existing facilities for the purpose of minimizing adverse environmental impact associated with the use of CWIS. The requirements are established and implemented in NPDES permits.

Subpart J is applicable to existing facilities that commenced construction on or before January 17, 2002. Since this facility began operations in 1980, this facility is defined as an existing facility as defined in 40 C.F.R. § 125.92(k). Existing facilities are subject to Subpart J if all of the following items are true:

- (1) The facility is a point source;
- (2) The facility uses or proposes to use one or more CWIS with a cumulative design intake flow of greater than 2 million gallons per day (MGD) to withdraw water from waters of the United States; and
- (3) Twenty-five percent (25%) or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes.

This facility is a point source, the design intake flow of the CWIS associated with this facility is 28.8 MGD, and the facility uses at least 25% of the water withdrawn exclusively for cooling purposes. Therefore, this facility is subject to Subpart J for existing facilities. Subpart J requires the facility to choose one of seven options that represent Best Technology Available (BTA) for impingement (IM), and also requires the permitting authority to determine BTA for entrainment (E) on a site-specific basis based on the information submitted in the permit application.

The facility operates two CWIS: the River Intake Pump Structure (RIPS) and the Low Pressure Service Water Pump Structure (LPSWPS). The RIPS withdraws water from the Arkansas River, a Water of the U.S., and pumps it to the Clear Water Holding Pond (CWHP), which is not a Water of the U.S. The LPSWPS withdraws water from the CWHP for distribution to the cooling towers and the cooling water system. Since the LPSWPS does not withdraw water from a Water of the U.S., only the RIPS is subject to the 316(b) requirements.

The RIPS consists of a 96-inch diameter pipe which extends approximately 167 feet into the channel of the Arkansas River and sits on the bottom at a mean depth of approximately 43 feet (during normal water level conditions). The intake pipe is situated horizontally with the open end fitted into a boxed bar rack structure. The box measures 10 feet wide by 12 feet long by 12 feet high, and sits on a bed of riprap placed on the river bottom. Water is withdrawn by either of two (2) 36-inch pumps, and passes through 3/8-inch mesh stainless steel screens, and flows to the CWHP. The LPSWPS withdraws water from the CWHP and directs it to the cooling system which is a closed-cycle recirculating cooling system.

Pursuant to Subpart J, the operation of this type of cooling system and monitoring the actual intake flows or cycles of operation on a daily basis is a pre-approved BTA for minimizing impingement mortality with no biological (IM or E) monitoring required.

The facility included the information required in 40 C.F.R. §§ 122.21(r)(2) thru (8) with the renewal application for the previous permit. Based on the information submitted, the facility has chosen to comply with the BTA standard for impingement mortality by operating a closed-cycle recirculating cooling system. With this permit, ADEQ establishes the BTA standard for entrainment to be the operation of a closed-cycle recirculating cooling system. In accordance with Part II.15.A of the permit, the facility is required to operate and maintain the closed-cycle recirculating cooling system and cooling tower in accordance with Best Management Practices (BMPs) that will minimize any Adverse Environmental Impacts (AEIs) from the CWIS.

Part II.15.B of the permit also requires the facility to monitor the actual intake flow at least daily. This monitoring must be representative of normal operating conditions, and must include measuring cooling water withdrawals, make-up water, and blow down volume. In lieu of daily intake flow monitoring, the facility may monitor the cycles of concentration at least daily. Actual intake flows may be calculated using the pump run time and pump capacity. The actual intake flows determined by this method, and the daily flow monitoring of blowdown at Outfall 001, will satisfy the monitoring requirements under Part II.15.B. Part II.15.B satisfies the reporting requirements of 40 C.F.R. § 125.94 (c)(1) and 40 C.F.R. § 125.97 (a) and (b).

In accordance with 40 C.F.R. § 125.98(b)(1), the following language is also included in Part II.15.C of the permit: “Nothing in this permit authorizes take for the purposes of a facility’s compliance with the Endangered Species Act.”

Part II.17 satisfies the requirements for an annual certification statement and report in 40 C.F.R. § 125.97(c).

Part II.18 satisfies the requirements for weekly visual inspections in 40 C.F.R. § 125.96(e).

6. Discharges from Flue Gas Desulfurization (FGD)

The facility does not have a flue gas scrubber system. Therefore, there is no wastewater stream subject to FGD regulations.

7. Coal Combustion Residuals (CCR)

The facility has installed new disposal cells at the on-site coal ash landfill. Each new cell has a leachate collection system, which pumps the collected leachate to the surge ponds, where it commingles with stormwater runoff from the landfill (noted as ash disposal runoff in the discharge description) and with other wastewaters, and may discharge through Outfall 002. Therefore, since toxic contaminants may be part of the leachate and stormwater runoff from the coal ash landfill, Chronic WET testing requirements for the discharge from Outfall 002 have been included in the permit.

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

There are no changes being made to the 208 Plan with this permitting action.

E. **Applicable Effluent Limitations Guidelines**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines (ELGs) promulgated under 40 C.F.R. Part 423 Steam Electric Power Generating Point Source Category. Updates to 40 C.F.R. Part 423 became effective on November 3, 2015.

Because the ash landfill only receives wastes generated by the facility, the ELGs in 40 C.F.R. Part 445 – Landfills Point Source Category does not apply to discharges from Outfall 002, in accordance with 40 C.F.R. § 445.1(e).

1. Outfall 001

- a. 40 C.F.R. § 423.12(b)(7) and (8) are applicable to Outfall 001 since it discharges cooling tower blowdown.
- b. 40 C.F.R. § 423.13(d)(1) is applicable to Outfall 001 since it discharges cooling tower blowdown. Therefore, a requirement that the discharge from Outfall 001 contain no detectable amount of the 126 priority pollutants listed in Appendix A of 40 C.F.R. Part 423, except for Chromium and Zinc, has been included in Part II.9 of the permit. The ELG limitations for Chromium and Zinc have been included in Part IA Section A1 of the permit. The monitoring requirements for all of the 126 priority pollutants, including Chromium and Zinc, have been waived during the term of this permit based on 40 C.F.R. § 122.44(a)(2), and a certification submitted by the facility, dated June 12, 2019, that no cooling tower maintenance chemicals containing any of the priority pollutants are used at the facility.

## 2. Outfall 002

- a. 40 C.F.R. § 423.12(b)(3) is applicable to Outfall 002 since low volume waste sources (wastewaters from an ion exchange water treatment system, laboratory stream, boiler blowdown, and floor drains) contribute to the discharge.
- b. 40 C.F.R. § 423.12(b)(4) is applicable to Outfall 002 since bottom ash transport water contributes to the discharge.
- c. 40 C.F.R. § 423.12(b)(5) is applicable to Outfall 002 since metal cleaning wastes contribute to the discharge.
- d. 40 C.F.R. § 423.12(b)(9) is applicable to Outfall 002 since coal pile runoff contributes to the discharge.
- e. 40 C.F.R. § 423.12(b)(11) is applicable to Outfall 002 since ash landfill leachate contributes to the discharge.
- f. The TSS limits for Outfall 002 are based on the most restrictive of the point source limits applicable to the waste streams from 40 C.F.R. §§ 423.12(b)(3), (4), (5), (9), and (11).
- g. 40 C.F.R. § 423.13(k)(1)(i) is applicable to Outfall 002 beginning on December 31, 2023, since the facility discharges bottom ash transport water at the time of this permit renewal.

On November 3, 2015, the EPA issued a final rule amending 40 C.F.R. Part 423, the effluent limitations guidelines and standards for the steam electric power generating point source category. The amendments addressed and contained limitations and standards on fly ash transport water, bottom ash transport water, flue gas desulfurization (FGD) wastewater, flue gas mercury control wastewater, and gasification wastewater. Of these wastestreams, only bottom ash transport water is generated at the facility.

The 2015 updates included revisions and additions to special definitions in Parts 423.11 (f), (p), and (t). They also included the addition of Part 423.13 (k) to the ELGs representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT) to the discharge of bottom ash transport water.

Parts 423.13 (k)(1)(i) prohibits the discharge of bottom ash transport water “as soon as possible after November 1, 2020, but no later than December 31, 2023.”

On June 6, 2017, Federal Register Vol. 82, No. 107 (FR) published a proposed revision to the 40 C.F.R. Part 423, on page 26019, which postponed the compliance dates noted above (see the link in Section 17.P below) and in this notice EPA solicited comments on whether this postponement should be for a specified period of time.

The FR notes that the EPA received seven petitions for review of the rule, and the United States Judicial Panel on Multi-District Litigation issued an order on December 8, 2015, consolidating all of the petitions in the U.S. Court of Appeals for the Fifth Circuit. On April 12, 2017, the EPA Administrator sent a letter to those who submitted the reconsideration petitions, announcing his decision to reconsider the Rule. On April 14, 2017, the EPA requested that the Fifth Circuit hold the case in abeyance while the Agency undertakes reconsideration. On April 24, 2017, the Fifth Circuit granted the motion and placed the case in abeyance.

On August 11, 2017, EPA sent a second letter to those who had submitted the reconsideration petitions for the 2015 Rule, announcing the Administrator's decision to conduct a new rulemaking to potentially revise the new, more stringent BAT limitations in the 2015 Rule that apply to two wastestreams: FGD wastewater and bottom ash transport water. On August 14, 2017, EPA filed a motion to govern further proceedings in the U.S. Court of Appeals for the Fifth Circuit, which explained that EPA intended to conduct further rulemaking to potentially revise the new, more stringent requirements in the 2015 Rule applicable only to FGD wastewater and bottom ash transport water (as noted above, FGD wastewater is not a wastestream at the facility), and requested, in part, that the Court sever and hold in abeyance all judicial proceedings concerning portions of the 2015 Rule related to those particular requirements. On August 22, 2017, the Court granted EPA's motion.

On September 18, 2017, Federal Register Vol. 82, No. 179 (FR) published a revision to the 40 C.F.R. Part 423, on page 43500, which postponed the "as soon as possible" compliance date for bottom ash transport water and FGD wastewater from November 1, 2018 to November 1, 2020. The "no later than" December 31, 2023 compliance date for bottom ash transport water and FGD wastewater was unchanged. (see the link in Section 17.Q below).

*On October 13, 2020, Federal Register Vol. 85 No. 198 (FR) published a revision to 40 C.F.R. Part 423 on page 64719, which added § 423.13(k)(ii) stating that for "any electric generating unit...for which the owner has certified to the permitting authority that it will cease combustion of coal pursuant to § 423.19(f), the quantity of pollutants discharged in bottom ash transport water shall not exceed the quantity determined by multiplying the flow of the applicable wastewater times the concentration for TSS listed in § 423.12(b)(4)."*

*The permittee submitted the certified Notice of Planned Participation meeting the requirements of 40 C.F.R. § 423.19(f)(1) and (2) on October 12, 2021. This modified permit contains Annual Progress Reporting requirements meeting 40 C.F.R. § 423.19(f)(3) and (4).*

*The application for modification of the permit to remove the prohibition against the discharge of bottom ash transport water was received on August 30, 2022. Therefore, in accordance with the permit modification application, all parts of the*

*permit associated with the prohibition against discharge of bottom ash transport water have been removed. This includes Part IA Section A3, Part IB. Part II.20 has been revised to state the requirements for submission of the annual progress report.*

**F. Priority Pollutant Scan (PPS)**

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

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

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

The following items were used in calculations:

| Parameter                     | Value  | Source                        |
|-------------------------------|--|-------------------------------|
| Discharge Flow = Q            | Outfall 001 =<br>11.5 MGD = 17.8 cfs<br>Outfall 002 =<br>22.7 MGD = 35.1 cfs | Flow Limit<br><br>EPA Form 2C |
| 7Q10 Background Flow          | 819 cfs  | USGS data –<br>Arkansas River |
| LTA Background Flow           | 47,034 cfs   | USGS                          |
| TSS                           | 8.3 mg/l   | CPP – Arkansas River          |
| Hardness as CaCo <sub>3</sub> | 125.0 mg/l   | CPP – Arkansas River          |
| pH                            | 7.10 s.u.  | USGS data –<br>Arkansas River |

The following pollutants were reported above detection levels:

| Pollutant          | Concentration Reported,<br>µg/l | MQL, µg/l |
|--------------------|---------------------------------|-----------|
| <b>Outfall 001</b> |                                 |           |
| Arsenic            | 13.4 <sup>1</sup>               | 0.5       |
| Copper             | 65.2 <sup>1</sup>               | 0.5       |
| Lead               | 0.876 <sup>1</sup>              | 0.5       |
| Nickel             | 11.3 <sup>1</sup>               | 0.5       |
| Silver             | 1.66 <sup>1</sup>               | 0.5       |
| <b>Outfall 002</b> |                                 |           |
| Arsenic            | 0.842 <sup>2</sup>              | 0.5       |
| Copper             | 1.93 <sup>2</sup>               | 0.5       |
| Mercury            | 0.00567 <sup>2</sup>            | 0.005     |
| Nickel             | 1.16 <sup>2</sup>               | 0.5       |

<sup>1</sup> Reported on PPS form for Outfall 001 in the permit renewal application.

<sup>2</sup> Reported on PPS form for Outfall 002 in the permit renewal application.

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

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331\\_Toxicity%20Calculations%20Outfall%20001\\_20180502.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331_Toxicity%20Calculations%20Outfall%20001_20180502.pdf)

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331\\_Toxicity%20Calculations%20Outfall%20002\\_20180502.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0036331_Toxicity%20Calculations%20Outfall%20002_20180502.pdf)

## 1. Aquatic Toxicity Evaluation

### a. Acute Criteria Evaluation

| Pollutant          | Concentration Reported ( $C_e$ )<br>$\mu\text{g/l}$ | $C_e \times 2.13^1$ | Instream Waste Concentration (IWC) | Criteria <sup>2</sup>  | Reasonable Potential (Yes/No) |
|--------------------|---|---------------------|------------------------------------|------------------------|-------------------------------|
|                    |   |                     | Acute, $\mu\text{g/l}$             | Acute, $\mu\text{g/l}$ |                               |
| <b>Outfall 001</b> |   |                     |                                    |                        |                               |
| Copper             | 65.2  | 138.9               | 37.47                              | 58.86                  | No                            |
| Lead               | 0.876   | 1.87                | 0.50                               | 434.01                 | No                            |
| Nickel             | 11.3  | 24.1                | 7.00                               | 3790.47                | No                            |
| Silver             | 1.66  | 3.54                | 0.94                               | 16.47                  | No                            |
| <b>Outfall 002</b> |   |                     |                                    |                        |                               |
| Copper             | 1.93  | 4.11                | 2.18                               | 58.86                  | No                            |
| Mercury            | 0.00567   | 0.01208             | 0.00503                            | 6.44                   | No                            |
| Nickel             | 1.16  | 2.47                | 1.15                               | 3790.47                | No                            |

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

<sup>2</sup> Criteria are from Reg. 2.508 unless otherwise specified.

### b. Chronic Criteria Evaluation

| Pollutant          | Concentration Reported ( $C_e$ )<br>$\mu\text{g/l}$ | $C_e \times 2.13^1$ | Instream Waste Concentration (IWC) | Criteria <sup>2</sup>    | Reasonable Potential (Yes/No) |
|--------------------|---|---------------------|------------------------------------|--------------------------|-------------------------------|
|                    |   |                     | Chronic, $\mu\text{g/l}$           | Chronic, $\mu\text{g/l}$ |                               |
| <b>Outfall 001</b> |   |                     |                                    |                          |                               |
| Copper             | 65.2  | 138.9               | 11.83                              | 38.50                    | No                            |
| Lead               | 0.876   | 1.87                | 0.15                               | 16.91                    | No                            |
| Nickel             | 11.3  | 24.1                | 2.69                               | 420.96                   | No                            |
| <b>Outfall 002</b> |   |                     |                                    |                          |                               |
| Copper             | 1.93  | 4.11                | 1.28                               | 38.50                    | No                            |
| Mercury            | 0.00567   | 0.01208             | 0.00177                            | 0.012                    | No                            |
| Nickel             | 1.16  | 2.47                | 1.07                               | 420.96                   | No                            |

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

<sup>2</sup> Criteria are from Reg. 2.508 unless otherwise specified.

## 2. Human Health (Bioaccumulation) Evaluation

| Pollutant          | Concentration Reported ( $C_e$ )<br>$\mu\text{g/l}$ | $C_e \times 2.13^1$ | Instream Waste Concentration (IWC) | Criteria <sup>2</sup> | Reasonable Potential (Yes/No) |
|--------------------|---|---------------------|------------------------------------|-----------------------|-------------------------------|
| <b>Outfall 001</b> |   |                     |                                    |                       |                               |
| Arsenic            | 13.4  | 28.5                | 1.67                               | 1.4                   | Yes                           |
| Copper             | 65.2  | 138.9               | 1.79                               | 13,000                | No                            |
| Lead               | 0.876   | 1.87                | 0.01                               | 50                    | No                            |
| Nickel             | 11.3  | 24.1                | 1.00                               | 46,000                | No                            |
| <b>Outfall 002</b> |   |                     |                                    |                       |                               |
| Arsenic            | 0.842   | 1.793               | 1.48                               | 1.4                   | Yes                           |
| Copper             | 1.93  | 4.11                | 0.85                               | 13,000                | No                            |
| Mercury            | 0.00567   | 0.01208             | 0.00017                            | 2                     | No                            |
| Nickel             | 1.16  | 2.47                | 0.85                               | 46,000                | No                            |

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

<sup>2</sup> Adapted from "National Recommended Water Quality Criteria: 2002 – Human Health Criteria Calculation Matrix", EPA. The respective WQC from the noted reference are Consumption of Organism Only values. The values from the reference are for a lifetime risk factor of  $10^{-6}$ . These values have been multiplied by 10 to correspond to human health criteria lifetime risk factor of  $10^{-5}$  as stated in Reg. 2.508.

As can be seen in the tables above, the calculated IWC for Arsenic is higher than the EPA Water Quality Criterion. A.C.A. § 8-4-216 authorizes the Department to require the submission of any information relevant to meeting the requirements of the Arkansas Water and Air Pollution Control Act. A requirement to monitor and report for Arsenic once per quarter for one year has been added to the permit so that, in the event that a WQS for Arsenic is added to Reg. 2.508, data will be available to perform a reasonable potential analysis. This is in accordance with the procedure in Appendix D of the CPP (Appendix D, Part IV – Chemical Specific Standards and Criteria, Section E – Protection of Human Health Criteria of the Discharge Permit, Toxic Control Implementation Procedure).

The CPP requires that for all pollutants for which there are no applicable state water standards, IWCs are to be compared with the EPA Human Health Criteria (fish consumption only). If dilution calculations show that the in-stream concentration exceeds these criteria, the permit will require the permittee to monitor and report for the pollutant of concern once per quarter for one year only. A reopener clause has been included in the permit (see Part II.2) to provide permit limits if state water quality standards are developed for the applicable pollutants, and the data shows that there is a reasonable potential for the discharge to violate those water quality standards.

## 12. WHOLE EFFLUENT TOXICITY

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 C.F.R. § 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:

| <b>TOXICITY TESTS</b> | <b>FREQUENCY</b> |
|-----------------------|------------------|
| Chronic WET           | once/quarter     |

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is greater than 100 cfs (ft<sup>3</sup>/sec), but the dilution ratio (DR) is less than 100:1 as shown in below calculations, chronic WET testing requirements will be included in the permit.

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

$$\text{Dilution Ratio (DR)} = 7Q10 / Q_d$$
$$\text{Critical Dilution (CD)} = (Q_d / (Q_d + Q_b)) \times 100$$

### Outfall 001

$$Q_d = \text{Flow Limit} = 11.5 \text{ MGD} = 17.8 \text{ cfs}$$
$$7Q10 = 819 \text{ cfs}$$
$$\text{DR} = 819 \text{ cfs} / 17.8 \text{ cfs} = 46.0 \quad 46.0 < 100$$
$$Q_b = \text{Background flow} = 0.25 \times 819 = 204.75 \text{ cfs}$$
$$\text{CD} = ((17.8) / (17.8 + 204.75)) \times 100 = 8\%$$

### Outfall 002

$$Q_d = \text{Average Flow} = 22.7 \text{ MGD} = 35.1 \text{ cfs}$$
$$7Q10 = 819 \text{ cfs}$$
$$\text{DR} = 819 \text{ cfs} / 35.1 \text{ cfs} = 23.3 \quad 23.3 < 100$$
$$Q_b = \text{Background flow} = 0.25 \times 819 = 204.75 \text{ cfs}$$
$$\text{CD} = ((35.1) / (35.1 + 204.75)) \times 100 = 15\%$$

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are 3%, 5%, 6%, 8%, and 11% for Outfall 001, and 6%, 8%, 11%, 15%, and 20% for Outfall 002 (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 8% effluent for Outfall 001, and 15% for Outfall 002. 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 C.F.R. § 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 C.F.R. § 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).

**Administrative Records**

|  |  |                             |                |                 |     |
|--|--|-----------------------------|----------------|-----------------|-----|
| Permit Number:                               | AR0036331                                | AFIN:                       | 35-00110       | Outfall Number: | 001 |
| Date of Review:                              | 5/4/2018                                 | Reviewer:                   | M. Barnett     |                 |     |
| Facility Name:                               | Entergy Arkansas, Inc. White Bluff Plant |                             |                |                 |     |
| Previous Dilution series:                    | 20, 26, 35, 47, 63                       | Proposed Dilution Series:   | 3, 5, 6, 8, 11 |                 |     |
| Previous Critical Dilution:                  | 47                                       | Proposed Critical Dilution: | 8              |                 |     |
| <b>Previous TRE activities:</b>              | None                                     |                             |                |                 |     |
| <b>Frequency recommendation by species</b>   |  |                             |                |                 |     |
| <i>Pimephales promelas</i> (Fathead minnow): | once per quarter                         |                             |                |                 |     |
| <i>Daphnia pulex</i> (water flea):           | once per quarter                         |                             |                |                 |     |

**TEST DATA SUMMARY**

| TEST DATE  | Vertebrate ( <i>Pimephales promelas</i> ) |      | Invertebrate ( <i>Daphnia pulex</i> ) |      |
|------------|---|------|---------------------------------------|------|
|            | Lethal                                    | NOEC | Lethal                                | NOEC |
| 3/31/2013  |   | 63   |                                       | 63   |
| 6/30/2013  |   | 63   |                                       | 63   |
| 9/30/2013  |   | 63   |                                       | 63   |
| 12/31/2013 |   | 63   |                                       | 63   |
| 3/31/2014  |   | 63   |                                       | 63   |
| 6/30/2014  |   | 63   |                                       | 63   |
| 12/31/2014 |   | 63   |                                       | 63   |
| 6/30/2015  |   | 63   |                                       | 63   |
| 12/31/2015 |   | 63   |                                       | 63   |
| 6/30/2016  |   | 63   |                                       | 63   |
| 12/31/2016 |   | 63   |                                       | 63   |
| 6/30/2017  |   | 63   |                                       | 63   |
| 9/30/2017  |   | 63   |                                       | 63   |
| 12/31/2017 |   | 63   |                                       | 63   |

**REASONABLE POTENTIAL CALCULATIONS**

|  | Vertebrate Lethal |  | Invertebrate Lethal |  |
|--|-------------------|--|---------------------|--|
| <b>Min NOEC Observed</b>               | 63                |  | 63                  |  |
| <b>TU at Min Observed</b>              | 1.59              |  | 1.59                |  |
| <b>Count</b>                           | 14                |  | 14                  |  |
| <b>Failure Count</b>                   | 0                 |  | 0                   |  |
| <b>Mean</b>                            | 1.587             |  | 1.587               |  |
| <b>Std. Dev.</b>                       | 0.000             |  | 0.000               |  |
| <b>CV</b>                              | 0                 |  | 0                   |  |
| <b>RPMF</b>                            | 0                 |  | 0                   |  |
| <b>Reasonable Potential</b>            | 0.000             |  | 0.000               |  |
| <b>100/Critical dilution</b>           | 12.500            |  | 12.500              |  |
| <b>Does Reasonable Potential Exist</b> | No                |  | No                  |  |

**PERMIT ACTION**

*P. promelas* chronic - monitoring  
*C. dubia* chronic - monitoring

Previous permits mistakenly included Acute WET testing requirements. Since the discharges from Outfall 001 and Outfall 002 are into a large river (7Q10 is greater than 100 cfs) and the dilution ratios are less than 100:1, Chronic WET testing requirements have been included in Part II.6 of the permit for both outfalls.

### 13. STORMWATER REQUIREMENTS

The federal regulations at 40 C.F.R. § 122.26(b)(14) require certain industrial sectors to have NPDES permit coverage for stormwater discharges from the facility. These requirements include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control the quality of stormwater discharges from the facility. This facility was issued stormwater permit coverage under NPDES Tracking number ARR000930.

### 14. SAMPLE TYPE AND FREQUENCY

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

| Parameter                       | Previous Permit       |             | Final Permit              |                  |
|---------------------------------|-----------------------|-------------|---------------------------|------------------|
|                                 | Frequency of Sample   | Sample Type | Frequency of Sample       | Sample Type      |
| <b>Outfall 001</b>              |                       |             |                           |                  |
| Flow                            | continuous            | record      | continuous                | record           |
| Temperature                     | continuous            | record      | continuous                | record           |
| FAC                             | once/week             | grab        | once/week                 | grab             |
| Total Recoverable Chromium (Cr) | N/A                   | N/A         | N/A <sup>1</sup>          | N/A <sup>1</sup> |
| Total Recoverable Zinc (Zn)     | N/A                   | N/A         | N/A <sup>1</sup>          | N/A <sup>1</sup> |
| Total Recoverable Arsenic (As)  | N/A                   | N/A         | once/quarter <sup>2</sup> | grab             |
| pH                              | once/week             | grab        | once/week                 | grab             |
| Chronic WET <sup>3</sup>        | once/quarter          | composite   | once/quarter              | composite        |
| <b>Outfall 002</b>              |                       |             |                           |                  |
| Flow                            | once/day <sup>4</sup> | estimate    | once/day <sup>4</sup>     | estimate         |
| Rain Intensity                  | once/day <sup>5</sup> | rain gauge  | once/day <sup>5</sup>     | rain gauge       |
| TSS                             | once/day              | grab        | once/day <sup>4</sup>     | grab             |
| Oil and Grease (O&G)            | once/day              | grab        | once/day <sup>4</sup>     | grab             |
| Total Iron                      | once/day              | grab        | once/day <sup>4</sup>     | grab             |
| Total Copper                    | once/day              | grab        | once/day <sup>4</sup>     | grab             |
| Total Recoverable Arsenic       | N/A                   | N/A         | once/quarter <sup>6</sup> | grab             |

| Parameter                      | Previous Permit     |             | Final Permit              |             |
|--------------------------------|---------------------|-------------|---------------------------|-------------|
|                                | Frequency of Sample | Sample Type | Frequency of Sample       | Sample Type |
| <b>Outfall 002 (continued)</b> |                     |             |                           |             |
| E-coli                         |                     |             |                           |             |
| (May – September) <sup>7</sup> | once/quarter        | grab        | two/5 months <sup>8</sup> | grab        |
| (October – April) <sup>7</sup> | once/quarter        | grab        | two/7 months <sup>8</sup> | grab        |
| pH                             | once/day            | grab        | once/day                  | grab        |
| Chronic WET <sup>3</sup>       | once/quarter        | composite   | once/quarter <sup>9</sup> | composite   |

<sup>1</sup> Monitoring for all 126 priority pollutants, including Chromium and Zinc, is waived at Outfall 001 during this permit term based on 40 C.F.R. § 122.44(a)(2), and a certification from the facility, dated January 24, 2019, that no cooling tower maintenance chemicals containing any priority pollutant is used at the facility. See Part II.9.

<sup>2</sup> For one year from the effective date of the permit. See Section 11.F.2 above for details.

<sup>3</sup> The previous permit included Acute WET testing.

<sup>4</sup> When discharging. Monitoring does not need to be performed more than once per day if there are multiple discharge events in a single calendar day. Monitoring shall be performed once per calendar day if the duration of the discharge is greater than 24 hours. No discharge is allowed except in the case of rainfall equivalent to a 10-year 24-hour storm event (See Part II.13.c).

<sup>5</sup> When raining. This is to verify the amount of rainfall in the event of a discharge from Outfall 002.

<sup>6</sup> Until four (4) samples are collected, analyzed, and reported.

<sup>7</sup> Seasons were April – September and October – March in the previous permit.

<sup>8</sup> A minimum of one E-coli sample will be taken and analyzed in the following periods if a discharge occurs within the respective period: January-April, May-June, July-September, and October-December.

<sup>9</sup> WET testing must be performed if a discharge occurs within the quarterly monitoring period.

## 15. PERMIT COMPLIANCE SCHEDULE

*A Schedule of Compliance has not been included in this 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. *Modification* Application No. AR0036331 received *August 30, 2022*.
- B. APC&EC Regulation No. 2.
- C. APC&EC Regulation No. 3.
- D. 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.
- E. 40 C.F.R. Parts 122 and 125.
- F. 40 C.F.R. Part 423.
- G. Discharge permit file AR0036331.
- 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. “Low-Flow Characteristics and Regionalization of Low-Flow Characteristics for Selected Streams in Arkansas”, U.S. Dept. of the Interior, U.S. Geological Survey, Scientific Investigations Report 2008-5065.
- L. Continuing Planning Process (CPP).
- M. Technical Support Document For Water Quality-based Toxic Control.
- N. [Inspection Report #097792, dated May 31, 2017.](#)
- O. [Compliance Review Memo from Layne Pemberton to Guy Lester dated May 3, 2018.](#)
- P. [Federal Register Vol. 82, No. 107, pp. 26017-26019, June 6, 2017.](#)
- Q. [Federal Register Vol. 82, No. 179 pp 43494-43500, September 18, 2017.](#)
- R. [EPA No Objection letter, dated October 19, 2018.](#)
- S. [Arkansas Department of Health No Comment Letter.](#)
- T. [U.S. Fish & Wildlife Service No Comment email.](#)
- U. [Permit Transfer Form, received January 22, 2019.](#)
- V. [Letter, dated January 7, 2019, from David Triplett, P.E., of Entergy Arkansas Environmental Support, to Guy Lester of ADEQ.](#)
- W. [Letter, dated June 12, 2019, from David Triplett, P.E., of Entergy Arkansas Environmental Support, to Bryan Leamons, P.E., of ADEQ.](#)
- X. [EPA No Objection letter, dated December 15, 2019.](#)
- Y. [U.S. Fish & Wildlife Service "No Effect" determination letter, dated January 19, 2023.](#)

## 18. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on April 23, 2023. The last day of the comment period was thirty (30) days after the publication date. No public comments were received on 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 Parks, Heritage, and Tourism, the EPA, and the Arkansas Department of Health.

## 19. PERMIT FEE

In accordance with Rule No. 9.403(A)(1), the initial and annual fee for the permit is \$15,000.

*In accordance with Rule No. 9.403(A)(1)(c)(i), the major modification fee is \$5,000.*

## 20. POINT OF CONTACT

For additional information, contact:

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