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.),

Plum Point Services Company, LLC
Plum Point Energy Station

is authorized to discharge cooling tower blowdown, low volume wastewater, and chemical metal cleaning wastewater from a facility located as follows: 2732 South County Road 623, Osceola, AR 72370, just north of State Highway 198 and just east of South County Road 623 in Mississippi County, Arkansas. The applicant's mailing address is: P.O. Box 567, Osceola, AR 72370.

Facility Coordinates: Latitude: 35° 39' 42.45" N; Longitude: 89° 57' 04.13" W

Discharge is to receiving waters named:

Mississippi River in Segment 6C of the Mississippi River Basin.

The outfall is located at the following coordinates:

Outfall 001: Latitude: 35° 39' 47.60" N; Longitude: 89° 56' 12.83" 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: August 1, 2019
Expiration Date: July 31, 2024

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

6.26.19
Issue Date

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 – combined wastewater from Internal Outfalls 01A, 01B, and 01C associated with Unit 1 (cooling tower blowdown, low volume wastewater, and chemical metal cleaning wastewater).

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	daily	totalizing meter
Total Suspended Solids (TSS)	Report	Report	Report	Report	once/month	composite
Oil and Grease (O&G)	156.1	234.1	10.0	15.0	once/weekday[4]	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/weekday[4]	grab
Acute WET Testing[1]						
Pimephales promelas (Acute)[1]	N/A					
Pass/Fail Lethality (48-Hr NOEC) **TEM6C**			Report (Pass=0/Fail=1)		once/quarter	composite[3]
Survival (48-Hr NOEC) **TOM6C**			Report %		once/quarter	composite[3]
Coefficient of Variation (48-Hr NOEC) **TQM6C**			Report %		once/quarter	composite[3]
Pass/Fail Retest 1 (48-Hr NOEC) 22418			Report (Pass=0/Fail=1)		once/month[2]	composite[3]
Pass/Fail Retest 2 (48-Hr NOEC) 22419			Report (Pass=0/Fail=1)		once/month[2]	composite[3]
Pass/Fail Retest 3 (48-Hr NOEC) 51444			Report (Pass=0/Fail=1)		once/month[2]	composite[3]
Daphnia pulex (Acute)[1]						
Pass/Fail Lethality (48-Hr NOEC) **TEM3D**			Report (Pass=0/Fail=1)		once/quarter	composite[3]
Survival (48-Hr NOEC) **TOM3D**			Report %		once/quarter	composite[3]
Coefficient of Variation (48-Hr NOEC) **TQM3D**			Report %		once/quarter	composite[3]
Pass/Fail Retest 1 (48-Hr NOEC) 22415			Report (Pass=0/Fail=1)		once/month[2]	composite[3]
Pass/Fail Retest 2 (48-Hr NOEC) 22416			Report (Pass=0/Fail=1)		once/month[2]	composite[3]
Pass/Fail Retest 3 (48-Hr NOEC) 51443			Report (Pass=0/Fail=1)		once/month[2]	composite[3]

1. See Part II.14 (WET Testing Requirements).
2. 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) This condition applies to *P. promelas* and *D. pulex*.
3. Composite sample for WET testing is defined in Part II.14 (WET Testing Requirements).
4. Weekday = Monday through Friday.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after all internal wastestreams from Internal Outfalls 01A, 01B, and 01C are combined, and prior to discharge into the receiving stream.

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: INTERNAL OUTFALL 01A – cooling tower blowdown associated with Unit 1.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Internal Outfall 01A. 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.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	daily	totalizing meter
Free Available Chlorine (FAC)[2]	0.2	0.4	0.2	0.5	once/weekday[1]	grab
Chromium, Total Recoverable (Cr)[3]	1.9	1.9	0.2	0.2	n/a[3]	n/a[3]
Zinc, Total Recoverable (Zn)[3]	9.4	9.4	1.0	1.0	n/a[3]	n/a[3]
126 Priority Pollutants (Appendix A to Part 423) contained in chemicals added for cooling tower maintenance, except Chromium and Zinc.[3]	N/A	N/A	ND[4]	ND[4]	n/a[3]	n/a[3]
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/weekday[1]	grab

1. Weekday = Monday through Friday.
2. FAC samples shall be representative of periods of chlorination. See Part II.7 and Part IV.25.
3. Monitoring for all priority pollutants, including Chromium and Zinc, is waived at Outfall 01A during this permit term based on 40 CFR 122.44(a)(2) and a certification dated January 24, 2019 from the facility that no cooling tower maintenance chemicals containing any priority pollutant is used at the facility. See Part II.11 and II.12.
4. ND = Non-detectable amount by analytical methods in 40 CFR Part 136.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken at Internal Outfall 01A prior to commingling with Internal Outfalls 01B and 01C.

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: INTERNAL OUTFALL 01B – low volume wastewater associated with Unit 1.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Internal Outfall 01A. 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.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	daily	totalizing meter
Total Suspended Solids (TSS)	125.2	417.3	30.0	100.0	once/week	composite
Oil & Grease (O&G)	62.6	83.5	15.0	20.0	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken at Internal Outfall 01B prior to commingling with Internal Outfalls 01A and 01C.

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: INTERNAL OUTFALL 01C – chemical metal cleaning wastewater associated with Unit 1.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Internal Outfall 01B. 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.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	five/week	instantaneous
Total Suspended Solids (TSS)	3.3	10.8	30.0	100.0	twice/month	grab
Oil & Grease (O&G)	1.6	2.2	15.0	20.0	twice/month	grab
Copper, Total Recoverable	0.1	0.1	1.0	1.0	twice/month	grab
Iron, Total Recoverable	0.1	0.1	1.0	1.0	twice/month	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	twice/month	grab

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Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken at Internal Outfall 01B prior to commingling with Internal Outfalls 01A and 01C.

SECTION B. PERMIT COMPLIANCE SCHEDULE

None.

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall hold an Advanced Industrial license from the State of Arkansas in accordance with APC&EC Regulation No. 3.

2. In accordance with 40 CFR Parts 122.62(a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

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 Branch of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5.
   - All associated devices are installed, calibrated, and maintained to ensure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality 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. Best Management Practices (BMPs), as defined in Part IV.7, must be implemented for the facility to prevent or reduce the pollution of waters of the State from spills or leaks, and/or waste disposal. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

5. Pursuant to 40 CFR 423.15(a)(2), the facility shall not discharge polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid.

6. Pursuant to 40 CFR 423.15(a)(7), the facility shall not discharge fly ash transport water.

7. Neither free available chlorine nor total residual chlorine may be discharged from any unit more than two hours per day in any one day, and not more than one unit in any plant can discharge free available or total residual chlorine at the same time, unless the discharger demonstrates to the permitting authority that the units in a particular location cannot operate at or below this level of chlorination. In accordance with Part II.3, the permittee may use DPD Method 8021 using a Hach pocket colorimeter with a range of 0.02 to 2.00 mg/L.

8. Permittee and their responsibilities

   a. This NPDES permit is issued to the following permittee:

      Plum Point Services Company, LLC
      4488 Onondaga Boulevard
      Syracuse, NY 13219

   b. Plum Point Services Company, LLC is operator for the following owners:

      - Plum Point Energy Associates, LLC
      - East Texas Electric Cooperative, Inc.
      - Missouri Joint Municipal Electric Utility Commission
      - The Empire District Electric Company
      - Municipal Energy Agency of Mississippi

   c. The facility name and mailing address for all permit correspondence is:

      Plum Point Energy Station
      P.O. Box 567
      Osceola, AR 72370

   d. Any violation of any part of this permit is the responsibility of the permittee.

9. The facility shall not discharge coal pile runoff or combustion residual leachate without first modifying this permit.

10. The terms “blowdown”, “chemical metal cleaning”, “free available chlorine”, “low volume wastewater”, “transport water”, “fly ash”, “bottom ash”, “flue gas desulfurization (FGD) wastewater”, “flue gas mercury control wastewater”, “coal pile runoff”, and “coal combustion residual leachate” are defined in Part IV of this permit.

11. The facility shall not utilize any cooling tower maintenance chemicals containing any of the priority pollutants listed in Appendix A of 40 CFR Part 423 without first modifying this permit.

12. The monitoring requirement for all priority pollutants listed in Appendix A of 40 CFR Part 423, including chromium and zinc, at Internal Outfall 01A is waived during this permit term based on 40 CFR 122.44(a)(2) and a certification dated January 24, 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 CFR Part 423, including chromium or zinc. The signed certification shall include the statements in 40 CFR 122.22(d).

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

Pollutant	MQL
Total Copper	0.5 µg/l
Total Iron	20 µg/l
Oil & Grease	5 mg/l

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 C.F.R. § 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:

MQL = 3.3 X 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.

14. WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE 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 OUTFALL(S):	001
REPORTED ON DMR AS FINAL OUTFALL:	001
CRITICAL DILUTION (%):	0.12
EFFLUENT DILUTION SERIES (%):	0.05, 0.07, 0.09, 0.12, 0.16
TESTING FREQUENCY:	once/quarter
COMPOSITE SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Daphnia pulex acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest 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.

Pimephales promelas (Fathead minnow) acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest 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 defined as the greatest effluent dilution at and below which toxicity that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Acute 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.

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 LETHALITY

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects are herein defined as a statistically significant difference at the 95% confidence level

between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent). 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 subsequent valid test demonstrates significant lethal effects to a test species at or below the critical dilution, the frequency of testing for this species is automatically increased to once per quarter for the life of the permit.

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 lethal 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 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.

c. The provisions of Item B.i 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. Each toxicity test control (0% effluent) must have a survival equal to or greater than 90%.

b. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: Daphnia pulex survival test; and Fathead minnow survival test.

c. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal effects are exhibited for: Daphnia pulex survival test; and Fathead minnow survival test.

d. 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 survival in the Daphnia pulex survival test or the survival endpoint 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.

e. 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%.

ii. Statistical Interpretation

For the Daphnia pulex survival test and the Fathead minnow survival test, the statistical analyses used to determine if there is a statistically 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-02-012 or the most recent update thereof.

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 90% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 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., 48 hours);

(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 two 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 a second composite sample for use during the 24-hour renewal of each dilution concentration for both tests. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 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.

c. The permittee must collect both flow-weighted composite samples within the monitoring period. The second composite sample shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.

d. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

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. 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.

D. REPORTING

i. The permittee shall prepare a full report of the results of all tests conducted pursuant to this Part in accordance with the Report Preparation Section of EPA-821-R-02-012, 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 report 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 report the following 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. 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. TEM6C.

(2) Report the NOEC value for survival, Parameter No. TOM6C.

(3) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM6C.

(4) 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 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 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 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 routine 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. Daphnia pulex

(1) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D

(2) Report the NOEC value for survival, Parameter No. TOM3D.

(3) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM3D.

(4) 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 for D. pulex 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 for D. pulex 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 for D. pulex 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 routine 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 EVALUATION (TRE)

i. Within ninety (90) days of confirming lethality in the retests, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:

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) 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 24 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 lethality 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 lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

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 CFR 122.44(d)(1)(v).

F. MONITORING FREQUENCY REDUCTION

i. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing (in accordance with Item A.i.) 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 issuance of the renewed permit was not delayed by any fault of the permittee,
b. No 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.

If any of the above conditions are not met, the permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing (in accordance with Item A.i.) after the renewal permit is issued, for one or both test species, with no 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 species (usually the Daphnia pulex).

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 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. SURVIVAL FAILURES - If any test fails the survival endpoint at any time during the life of this permit, three consecutive monthly retests are required and the monitoring frequency for the affected test species may be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

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

16. Compliance with Section 316(b) of Clean Water Act

Construction on this facility commenced after January 17, 2002. Therefore, this facility is considered a "new facility" as defined in 40 CFR 125.83(k). To the extent this facility obtains cooling water from its intake structure and not a public water system, the permittee shall comply with the requirements of 40 CFR Part 125, Subpart I, "Track I" requirements for new facilities that withdraw equal to or greater than 10 MGD. Satisfaction of the following conditions shall be deemed compliant with such requirements:

1. Cooling Water Intake Structure (CWIS) Best Technology Available (BTA) Requirements

The permittee shall design and construct the cooling water intake structure in accordance with the following BTA performance standards:

a. Intake flow shall be limited to a level commensurate with that which can be attained by a closed-cycle recirculating cooling water system.

The facility was designed and constructed as a closed cycle recirculating cooling water system utilizing a mechanical draft cooling tower.

b. The maximum through-screen design intake velocity shall be 0.5 feet per second.

The wedgewire intake screen with slot opening of 0.125 inches (3.175 mm) was designed so that the maximum design intake velocity through the screen would be less than 0.5 feet per second when two generating units were in operation with a total design intake flow of 20,400 gpm (45.45 cfs). Because only one generating unit was constructed, the design intake flow is 10,200 gpm (22.73 cfs), and the maximum through-screen design intake velocity is 0.203 feet per second.[1]

c. The total design intake flow is no greater than five (5) percent of the annual mean flow of the source water annual mean flow.

Annual mean flow = 631,971 cfs based on 2013 stage data recorded by the USACE at Mississippi River H.W. Gage 152 near Osceola, Arkansas at river mile 783.5 through October 31, 2013. The design intake flow (45.45 cfs) is less than 0.01 percent of the annual mean flow of the Mississippi River.[1]

[1] This information is from the "Impingement Mortality & Entrainment Study" dated January 2016, prepared for Plum Point Energy Station by EnSafe, Inc.

2. Monitoring

a. Biological Monitoring

In accordance with 40 CFR 125.85, the permittee shall conduct the following alternative monitoring procedures when the cooling water intake structure is in operation to demonstrate compliance with the biological monitoring requirements of Section 316(b) of the Clean Water Act:

i. The permittee shall operate and maintain a CWIS composed of a cylindrical wedge-wire intake screen with the screen surface oriented parallel to the river flow and positioned approximately 300 feet off-shore at a depth of approximately 60 feet. The cylindrical design and parallel orientation of the screen surface to the river flow allows for passive cleaning of the intake screen by the sweep velocity created by the river current. In addition to the passive cleaning of the CWIS screen, the permittee shall operate an air burst system which releases compressed air inside the CWIS and exits the screen in the opposite direction of the normal intake water flow. The air burst system shall be operated at least three times per week to assure any fouling debris is removed from the screen. To monitor for periods of significant screen fouling, the permittee shall, at least once per month, monitor water levels in the cooling water caisson compared to the river water levels. Any significant difference in the water level between the caisson and the river would indicate excessive fouling of the CWIS screen. Because visual inspection of the intake screen in the highly turbid Mississippi River is infeasible, no impingement sampling can be performed. This alternative monitoring plan is justifiable due to diver safety concerns and low underwater visibility. The permittee shall include the records of air burst operation, river surface elevation, and water level in the cooling water caisson, in each 316(b) annual compliance report submitted in accordance with Part II.16.3 of this permit.

ii. The permittee shall conduct entrainment sampling over a 24-hour period during one (1) of the first three (3) years of the term of this permit at a frequency of no less than once every two weeks (biweekly) during the primary period of reproduction, larval recruitment, and peak abundance. For the purposes of this permit, this period has been determined to be March 1 through August 31, based upon the location of the intake structure and a review of previous entrainment sampling results conducted in 2010, 2011, 2012, 2013, and 2015. All months of entrainment sampling must be performed during the same calendar year. The permittee shall include the results of the entrainment sampling in the next annual 316(b) compliance report submitted in accordance with Part II.16.3 of this permit.

b. Velocity Monitoring

The CWIS design intake velocity shall be maintained by the alternative monitoring procedures as outlined in Part II.16.2.a.i of this permit. In situ water velocity measurements are not required.

c. Visual or Remote Inspections

Because visual inspections of the CWIS are infeasible, remote inspections shall be made by the alternative monitoring procedures as outlined in Part II.16.2.a.i of this permit. Visual inspections of the intake screen are not required.

3. Recordkeeping and Reporting

The permittee shall keep records of all compliance monitoring data submitted under Item 11.2 above for a period of at least five (5) years from the date such data is collected. On or before February 1 of each year, the permittee shall submit an annual 316(b) compliance report to the Office Water Quality, Permits Branch containing all records collected pursuant to Part II.16.2.a.i and Part II.16.2.a.ii of this permit.

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 statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

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

7. **State Laws**

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

8. **Property Rights**

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

9. **Severability**

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

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

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

11. **Permit Fees**

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

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

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

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

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

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

production or discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. **Duty to Mitigate**

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

4. **Bypass of Treatment Facilities**

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

A. Bypass not exceeding limitation

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

B. Notice

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

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance.
(c) The permittee submitted notices as required by Part III.B.4.B.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.C(1).

5. **Upset Conditions**

A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.B of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

B. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the permittee can identify the specific cause(s) of the upset.
2. The permitted facility was at the time being properly operated.
3. The permittee submitted notice of the upset as required by Part III.D.6.
4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. **Removed Substances**

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

B. Any changes to the permittee's disposal practices described in the 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 to ensure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Department approved method (i.e., as allowed under Part II.3), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department.

3. **Monitoring Procedures**

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

4. **Penalties for Tampering**

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

5. **Reporting of Monitoring Results**

40 CFR 127.11(a)(1) and 40 CFR 127.16(a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory Authorities must initially request access for a NetDMR account. Once a NetDMR account is established,

access to electronic filing should use the following link https://cdx.epa.gov. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 CFR 127.15. Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR dated and submitted no later than the 25th day of the month, following the completed reporting period beginning on the effective date of the permit.

6. **Additional Monitoring by the Permittee**

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

7. **Retention of Records**

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

8. **Record Contents**

Records and monitoring information shall include:

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

9. **Inspection and Entry**

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

A. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. **Planned Changes**

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

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

2. **Anticipated Noncompliance**

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

3. **Transfers**

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

4. **Monitoring Reports**

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

5. **Compliance Schedule**

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

6. **Twenty-four Hour Report**

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

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

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

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

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

7. **Other Noncompliance**

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

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

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

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

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

9. **Duty to Provide Information**

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

10. **Duty to Reapply**

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

11. **Signatory Requirements**

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

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

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

   (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.
   (b) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively.

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   (a) The chief executive officer of the agency.
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

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

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

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

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

12. **Availability of Reports**

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

13. **Penalties for Falsification of Reports**

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

14. **Other Information**

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

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"7-Day Average"** Also known as "average weekly" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the "daily discharges" of all effluent samples collected during a calendar week in colonies per 100 ml.
2. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
3. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
4. **"APC&EC"** means the Arkansas Pollution Control and Ecology Commission.
5. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
6. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Regulation No. 2, as amended.
7. **"Best Management Practices (BMPs)"** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
8. **"Blowdown"** means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by engineering practices.
9. **"Bottom ash"** means the ash, including boiler slag, which settles in the furnace or is dislodged from furnace walls. Economizer ash is included in this definition when it is collected with bottom ash.
10. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).
11. **"Chemical metal cleaning"** means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.
12. **"Coal pile runoff"** means the rainfall runoff from or through any coal storage pile.
13. **"Combustion residual leachate"** means leachate from landfills or surface impoundments containing combustion residuals. Leachate is composed of liquid, including any suspended or dissolved constituents in the liquid, that has percolated through waste or other materials

emplaced in a landfill, or that passes through the surface impoundment's containment structure (e.g., bottom, dikes, berms). Combustion residual leachate includes seepage and/or leakage from a combustion residual landfill or impoundment unit. Combustion residual leachate includes wastewater from landfills and surface impoundments located on non-adjoining property when under the operational control of the permitted facility.

14. **"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.
15. **"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.
16. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
17. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
18. **"Director"** means the Director of the Arkansas Department of Environmental Quality.
19. **"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.
20. **"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.
21. **"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.
22. **"Flue gas desulfurization (FGD) wastewater"** means any wastewater generated specifically from the wet flue gas desulfurization scrubber system that comes into contact with the flue gas or the FGD solids, including but not limited to, the blowdown from the FGD scrubber system, overflow or underflow from the solids separation process, FGD solids washwater, and filtrate from the solids dewatering process. Wastewater generated from cleaning the FGD scrubber, cleaning FGD solids separation equipment, cleaning FGD solids dewatering equipment, or that is collected in floor drains in the FGD process area is not considered FGD wastewater.
23. **"Flue gas mercury control (FGMC) wastewater"** means any wastewater generated from an air pollution control system installed or operated for the purpose of removing mercury from flue gas. This includes fly ash collection systems when the particulate control system

follows sorbent injection or other controls to remove mercury from flue gas. FGD wastewater generated at plants using oxidizing agents to remove mercury in the FGD system and not in a separate FGMC system is not included in this definition.

24. **"Fly ash"** means the ash that is carried out of the furnace by a gas stream and collected by a capture device such as a mechanical precipitator, electrostatic precipitator, or fabric filter. Economizer ash is included in this definition when it is collected with fly ash. Ash is not included in this definition when it is collected in wet scrubber air pollution control systems whose primary purpose is particulate removal.
25. **"Free Available Chlorine"** means the value obtained using any of the "chlorine-free available" methods in Table IB in 40 CFR 136.3(a) where the method has the capability of measuring free available chlorine, or other methods approved by the permitting authority.
26. **"Gasification wastewater"** means any wastewater generated at an integrated gasification combined cycle operation from the gasifier or the syngas cleaning, combustion, and cooling processes. Gasification wastewater includes, but is not limited to the following: Sour/grey water; CO_2/steam stripper wastewater; sulfur recovery unit blowdown, and wastewater resulting from slag handling or fly ash handling, particulate removal, halogen removal, or trace organic removal. Air separation unit blowdown, noncontact cooling water, and runoff from fuel and/or byproduct piles are not considered gasification wastewater. Wastewater that is collected intermittently in floor drains in the gasification process area from leaks, spills, and cleaning occurring during normal operation of the gasification operation is not considered gasification wastewater.
27. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
28. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
29. **"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.
30. **"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.
31. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
32. **"Low Volume Wastewater"** means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in 40 CFR Part 423. Low volume wastewaters include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition.
33. **"Monitoring and Reporting"**
    When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is

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

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

B. **BI-MONTHLY:**
is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

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

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

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

34. **"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.
35. **"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.
36. **"POTW"** means Publicly Owned Treatment Works;
37. **"Reduction of $CBOD_5$/BOD_5 and TSS in mg/l Formula"**
[(Influent – Effluent) / Influent] × 100
38. **"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.

39. **"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.
40. **"Transport water"** means any wastewater that is used to transport fly ash, bottom ash, or economizer ash from the ash collection or storage equipment, or boiler, and has direct contact with the ash. Transport water does not include low volume, short duration discharges of wastewater from minor leaks (e.g., leaks from valve packing, pipe flanges, or piping) or minor maintenance events (e.g., replacement of valves or pipe sections).
41. **"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.
42. **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.
43. **"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.
44. **"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.
45. **"Weekday"** means Monday – Friday.

Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This draft permitting decision is for the renewal of discharge Permit Number AR0049557 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 47-00461 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:

Plum Point Services Company, LLC - Plum Point Energy Station
P.O. Box 567
Osceola, AR 72370

The facility address is:

Plum Point Services Company, LLC - Plum Point Energy Station
2732 South County Road 623
Osceola, AR 72370

3. PREPARED BY

The permit was prepared by:

Shane Byrum
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4. PERMIT ACTIVITY

Previous Permit Effective Date:	May 1, 2013
Previous Permit Modification Date:	September 1, 2014
Previous Permit Expiration Date:	April 30, 2018

The permittee submitted a permit renewal application on October 30, 2017. It is proposed that the current discharge permit be reissued for a 5-year term in accordance with regulations

promulgated at 40 CFR Part 122.46(a). Internal Outfalls 01D, 02A, and 02C are being removed from the permit. See Section 5.7, 5.8, and 5.9 for more details.

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_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - 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_3-N - ammonia nitrogen
$NO_3 + NO_2$-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:

COMPLIANCE REPORT

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. Part III.C.5 of the permit now requires that DMRs be submitted electronically via NetDMR.
2. Conditional reporting requirements for WET testing if performing retests was added to Part IA and Part II of the permit.
3. Monitoring/reporting requirements for Copper, Zinc, Chromium, Iron, and Selenium were discontinued at Outfall 001 based on evaluation of reported data during the past five years. See Section 12.E of this Fact Sheet for this evaluation.
4. Mass limits for Oil & Grease were revised at Outfall 001 based on plant water balance flow at 100% load condition (1.87 MGD). See Section 11 of this Fact Sheet for discussion.
5. Mass limits for Free Available Chlorine were revised at Internal Outfall 01A based on the highest monthly average flow (1.13 MGD) reported over the past five years (Sep 2013 - Sep 2018). See Section 11 of this Fact Sheet for discussion.
6. Mass limits for TSS and O&G were revised at Internal Outfall 01B based on the highest monthly average flow (0.5 MGD) reported over the past five years (Sep 2013 - Sep 2018). See Section 11 of this Fact Sheet for discussion.
7. Internal Outfalls 02A and 02C, and the associated PPS requirement for 02A, were removed from the permit. These outfalls were associated with Unit 2, which was not constructed as originally planned.
8. Internal Outfall 01D Tier I and associated conditions (Part II.15 and 16) were removed from the permit. The facility no longer discharges from the coal pile runoff pond. This water is recycled back to the makeup water system clarifiers and reused as service water within the facility. The no objection letter can be viewed at the following weblink: 9/6/2013 no objection letter
9. Internal Outfall 01D Tier II (leachate from ash landfill) and associated conditions (Part II.17 through 19) were removed from the permit. The facility does not discharge the leachate. The leachate is collected in a leachate pond then pumped to the lime slurry tank for use as makeup water in the flue gas desulfurization (FGD) scrubber system. The no objection letter can be viewed at the following weblink: 6/21/2011 no objection letter

10. The critical dilution and dilution series for Outfall 001 were revised based on the updated flow rate at 100% load conditions shown on the water balance diagram. See Section 13 of this Fact Sheet for calculations.
11. The definitions of the terms fly ash, bottom ash, blowdown, free available chlorine, coal pile runoff, flue gas desulfurization wastewater, flue gas mercury control wastewater, transport water, gasification wastewater, and combustion residual leachate were included in Part IV of the permit.
12. A condition was added to Part II of the permit stating that no discharge of coal pile runoff or combustion residual leachate is allowed without first modifying this permit.
13. Part III.B.6 (Removed Substances) language was updated, including changes to the required notification time.
14. Part III.D.1 (Planned Changes) language was updated to better clarify what changes require notification.
15. Part III.D.14 of previous permit (Applicable Federal, State or Local Requirements) was removed and replaced with a new section (Other Information).
16. Part II.13 (Stormwater BMPs) was updated in Part II.4.
17. The entrainment sampling period representing the primary period of reproduction, larval recruitment, and peak abundance has been revised from (February 1 – August 1) to (March 1 – August 31), based on the past five years of sampling results. Also, entrainment sampling requirement was reduced from annually to once per permit term within the first three years of the permit. See Section 18.D of the Fact Sheet for more details.
18. Stormwater was removed from list of authorized discharges under this permit because all stormwater discharges from this facility are authorized under NPDES Industrial Stormwater General Permit Tracking Number ARR000704.
19. The permittee address was updated in Part II.8 of the permit. The facility mailing address for all permit correspondence remains unchanged.
20. The list of facility owners was updated in Part II.8 of the permit.
21. Part II.14.F.i. of the permit was updated to allow the facility to request a monitoring frequency reduction for WET testing after four consecutive quarterly tests after the expiration date of the previous permit.
22. A list of species of concern identified by The Department of Arkansas Heritage was added to the Endangered Species section (7.C.) of the fact sheet.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

Outfall 001 is located at the following coordinates based on the application and verified with Google Earth using WGS84 map datum:

Latitude: 35° 39’ 47.60” N; Longitude: 89° 56’ 12.83” W

The receiving waters named:

Mississippi River in Segment 6C of the Mississippi River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 08010100 and reach # 010 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 Mississippi River is not listed on Arkansas 2016 303(d) list. This segment of the Mississippi River (TN08010100001_3000) is listed on the Tennessee 2016 303(d) list for elevated levels of Chlordane, Dioxins, and Polychlorinated Biphenyls (PCBs) in fish tissue. The pollutant sources are listed as dredging and contaminated sediment. These pollutants are addressed in a TMDL prepared by Tennessee Department of Environment and Conservation. This TMDL is discussed in Section B below.

The Tennessee 2016 303(d) list can be viewed at the following weblink:

Tennessee 2016 303(d) list

B. Applicable Total Maximum Daily Load (TMDL) Reports

A TMDL for Chlordane, Dioxins, and Polychlorinated Biphenyls (PCBs) in the Mississippi River was prepared by the Tennessee Department of Environment and Conservation and EPA Region 4 approved the TMDL on July 25, 2008. This TMDL is applicable to the Mississippi River in HUC 08010100 covering parts of Lake, Dyer, Lauderdale, Tipton, and Shelby Counties, Tennessee. This TMDL contains a lumped allocation for Chlordane, Dioxins, and PCBs from other upstream and adjoining states (Kentucky, Missouri, and Arkansas), but does not assign an individual wasteload allocation (WLA) to any facilities in these adjoining states. This TMDL identifies contaminated sediments in the Mississippi River bed as a likely cause of elevated fish tissue concentrations and recommends avoiding disturbance of the sediment. Since Plum Point Energy Station does not perform any activities that would disturb the sediment nor is assigned an individual WLA, no further permitting action is being required to address this TMDL. In addition, Part II.5 of the permit prohibits this facility from discharging PCB compounds.

The TMDL can be viewed at the following weblink:

Tennessee TMDL for Mississippi River

C. Endangered Species

No comments on the application were received from the USF&WS. The draft permit and Fact Sheet were sent to the USF&WS for their review and no comments were received. During the comment period of the draft permit, the Department of Arkansas Heritage identified the following species of conservation concern known to occur within 5 miles downstream of the outfall in the Mississippi River:

Notropis wickliffi, channel shiner – state concern
Scaphirhynchus albus, pallid sturgeon – federal concern (endangered)
Sterna antillarum athalassos, Interior Least Tern – federal concern (endangered)

The limits in the permit are designed to protect all beneficial uses of the receiving waters, including propagation of desirable species of fish and other aquatic life as well as other species which are directly or indirectly by the receiving waters, which includes the above species of concern. Therefore, ADEQ has determined that the final permit limits will serve to help protect the species of concern identified above.

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. Internal Outfall 01A

Average Flow: 1.13 MGD (highest monthly average Sep 2013 – Sep 2018)

Type of Treatment: None

Discharge Description: cooling tower blowdown

B. Internal Outfall 01B

Average Flow: 0.5 MGD (highest monthly average Sep 2013 – Sep 2018)

Type of Treatment: oil/water separator, pH adjustment (neutralization), sedimentation, and mixing/aeration

Discharge Description: low volume wastewater from Unit 1 including, but not limited to: filtration system backwash, oil-free drainage and generation sources, oil/water separator effluent, non-chemical metal cleaning waste, zeolite softening rinse water, reverse osmosis concentrate, neutralization tank effluent, rinse water, water from mixed bed demineralizers and condensate polishers, steam cycle sampling water and blowdown, and submerged chain conveyor system blowdown.

The above listed flow rates for Internal Outfalls 01A and 01B were used to calculate the technology-based mass limits, which were derived from the concentrations given in the effluent limitation guideline. Based on the Permit Writers Manual page 5-30 and 40 CFR 122.45(b)(2)(i), technology-based effluent mass limits are to be based on actual flow rates or production rates that can reasonably be expected to prevail during the next term of the permit (i.e. not the design flow or production rate). Therefore, the highest monthly average flow reported during the past five years at these internal outfalls were used to calculate the mass limits from the technology-based concentrations given in the effluent limitation guideline. See Section 11 of this fact sheet for additional discussion.

C. Internal Outfall 01C

Average Flow: 0.013 MGD (based on previous permit since no discharge has occurred)

Type of Treatment: clarification, pH adjustment (neutralization), precipitation, and sedimentation

Discharge Description: chemical metal cleaning waste associated with Unit 1

D. Outfall 001

Average Flow: 1.87 MGD (based on plant water balance at 100% load condition)

Type of Treatment: None

Discharge Description: combined wastestreams from Internal Outfalls 01A, 01B, 01C

The above listed design (projected) flow rate was used to calculate the water quality based mass limits at Outfall 001 because the technology-based limits from the effluent limitation guideline are not being applied to Outfall 001, rather they are being applied to the internal outfalls as allowed by 40 CFR 122.45(h).

E. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 600 is more than 80, this facility is classified as a major industrial. The MRAT can be viewed at the following weblink: Permit Rating Worksheet

F. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Reg. 6.202.

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. This station is a coal fired electric generating station. The facility uses a closed cycle recirculating water system with an 18-cell mechanical draft cooling tower. The facility has one (1) electric generating unit with a total gross generating capacity of 740 megawatts.

10. **SOLIDS PRACTICES**

Ash is placed in an on-site landfill (Solid Waste Permit No. 0303-S3N-R1). Solids from the coal pile runoff pond are placed back on the coal pile.

11. INTERNAL OUTFALLS AND FLOW RATES

Internal Outfalls

This facility has three internal wastestreams which combine and subsequently discharge through the final outfall (outfall 001). These internal wastestreams are cooling tower blowdown (CTB, outfall 01A), low volume wastewater (LVW, outfall 01B), and chemical metal cleaning wastewater (CMC, outfall 01C)). The CTB is subject to technology-based limits for FAC, Cr, Zn, and pH. The LVW is subject to technology-based limits for TSS, O&G, and pH. The CMC is subject to technology-based limits for TSS, O&G, Fe, Cu, and pH.

The Department has determined that applying mass limits only on the final outfall would not demonstrate compliance with the effluent limitation guideline in all flow situations. Based on the past five years (Sep 2013 – Sep 2018), the flow of the cooling tower blowdown wastestream has averaged about 94% of the total flow of outfall 001. In situations when the CTB flow is lower than average (based on past flow data, the CTB flow can be highly variable), the LVW wastestream could exceed the ELG concentrations and the facility still be in compliance with the mass limits at the final outfall. Therefore, demonstrating compliance with mass limits at the final outfall will not, in all situations, adequately ensure compliance with the technology-based concentration limits for TSS and O&G on the LVW, or the technology-based limits for FAC on the CTB. For these reasons, the Department has chosen to apply the ELG concentration limits at the internal outfalls, as was done in the previous permit. 40 CFR 122.45(h)(1) states that effluent limitations for discharges of pollutants may be imposed on internal wastestreams before mixing with other wastestreams or cooling water streams in instances when permit effluent limits imposed at the point of final discharge would be infeasible or impractical.

Flow Rates

In this renewal permit, the flow rates used for determining mass limits at internal outfall 01A, and internal outfall 01B are calculated using the highest monthly average flow rates reported over the past five years for each of these outfalls. Based on the Permit Writers Manual page 5-30 and 40 CFR 122.45(b)(2)(i), technology-based effluent mass limits are to be based on actual flow rates or actual production rates that can reasonably be expected to prevail during the next term of the permit (i.e. not the design flow or design production rate). Therefore, the highest monthly average flow reported during the past five years at internal outfalls 01A and 01B were used to calculate the mass limits from the technology-based concentrations given in the effluent limitation guideline.

The previous flow value for internal outfall 01C was used since no discharge was reported in past five years.

The previous permit used 4.19 MGD at outfall 001. This was a projected flow rate with both units in operation. However, Unit 2 was not constructed as originally planned. Therefore, the flow rate used in this permit for outfall 001 is 1.87 MGD, which is based on the water balance diagram at 100% load condition. Projected flows or design flows are used at outfall 001 since the limits imposed on outfall 001 are water quality-based, not technology-based.

12. DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS

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

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

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

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

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Draft Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
OUTFALL 001 (Final Outfall)								
O&G	10.0	15.0	N/A	N/A	10.0	15.0	10.0	15.0
TSS	N/A	N/A	Report	Report	Report	Report	Report	Report
pH	6.0 – 9.0 s.u.		N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
Acute WET testing	Report		N/A		Report		Report	
INTERNAL OUTFALL 01A (Cooling Tower Blowdown)								
Total Zinc[1]	N/A	N/A	1.0	1.0	1.0	1.0	1.0	1.0
Total Chromium[1]	N/A	N/A	0.2	0.2	0.2	0.2	0.2	0.2
FAC	N/A	N/A	0.2	0.5	0.2	0.5	0.2	0.5
pH	N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
The 126 priority pollutants (Appendix A of 40 CFR 423) contained in chemicals added for cooling tower maintenance, except Chromium and Zinc [1]	N/A		No detectable amount [1]		N/A		No detectable amount [1]	

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Draft Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
INTERNAL OUTFALL 01B (Low Volume Wastewater)								
TSS	N/A	N/A	30.0	100.0	30.0	100.0	30.0	100.0
O&G	N/A	N/A	15.0	20.0	15.0	20.0	15.0	20.0
pH	N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	
INTERNAL OUTFALL 01C (Chemical Metal Cleaning Wastewater)								
TSS	N/A	N/A	30.0	100.0	30.0	100.0	30.0	100.0
O&G	N/A	N/A	15.0	20.0	15.0	20.0	15.0	20.0
Total Copper	N/A	N/A	1.0	1.0	1.0	1.0	1.0	1.0
Total Iron	N/A	N/A	1.0	1.0	1.0	1.0	1.0	1.0
pH	N/A		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.		6.0 – 9.0 s.u.	

[1] Technology-based limits for Chromium and Zinc and all other priority pollutants are stated in the permit, but monitoring requirements for these pollutants are waived during this permit term based on 40 CFR 122.44(a)(2) and a certification submitted by the facility dated January 24, 2019 that no cooling tower maintenance chemicals containing any of the priority pollutants are used at the facility.

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

No new information was received to warrant adding, removing, or revising any concentration limitations in the permit. Therefore, the concentration limitations in the permit are consistent with the limitations in the previous permit. However, the mass limits for FAC at Internal Outfall 01A, and for TSS and O&G at Internal Outfall 01B, are lower than the previous permit because of updated actual flow rates reported during past five years. Also, the mass limits for O&G and TSS at Outfall 001 are lower than the previous permit because of lower projected flow rates due to Unit 2 not being constructed. These changes in flow rates are discussed in more detail in Section 11 of this Fact Sheet.

B. **Anti-backsliding**

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

C. **Limits Calculations**

1. Mass Limits:

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

Outfall 001

Mass limits for O&G are based on the following calculation using the water quality-based concentrations in Reg. 2.510:

O&G = (10 mg/l)(8.345 lb/gal)(1.87 mgd) = 156.1 lb/day (monthly average)
O&G = (15 mg/l)(8.345 lb/gal)(1.87 mgd) = 234.1 lb/day (daily maximum)

Internal Outfall 01A - Cooling Tower Blowdown

Mass limits for Chromium and Zinc are based on the following calculation using the technology-based concentrations in 40 CFR 423.15(a)(10):

Chromium = (0.2 mg/l)(8.345 lb/gal)(1.13 mgd) = 1.9 lb/day (monthly average)
Chromium = (0.2 mg/l)(8.345 lb/gal)(1.13 mgd) = 1.9 lb/day (daily maximum)

Zinc = (1.0 mg/l)(8.345 lb/gal)(1.13 mgd) = 9.4 lb/day (monthly average)
Zinc = (1.0 mg/l)(8.345 lb/gal)(1.13 mgd) = 9.4 lb/day (daily maximum)

Mass limits for FAC are based on the following calculation taking into consideration the ELG limits the discharge of chlorine to 2 hours per day per generating unit:

FAC = (0.2 mg/l)(8.345)(1.13 mgd)(2 hr/day/unit)(day/24 hr)(1 generating unit)
= 0.2 lb/day (monthly average)
FAC = (0.5 mg/l)(8.345)(1.13 mgd)(2 hr/day/unit)(day/24 hr)(1 generating unit)
= 0.4 lb/day (daily maximum)

Internal Outfall 01B – Low Volume Wastewater

Mass limits for TSS and O&G are based on the following calculation using the technology-based concentrations in 40 CFR 423.15(a)(3):

TSS = (30 mg/l)(8.345 lb/gal)(0.5 mgd) = 125.2 lb/day (monthly average)
TSS = (100 mg/l)(8.345 lb/gal)(0.5 mgd) = 417.3 lb/day (daily maximum)

O&G = (15 mg/l)(8.345 lb/gal)(0.5 mgd) = 62.6 lb/day (monthly average)
O&G = (20 mg/l)(8.345 lb/gal)(0.5 mgd) = 83.5 lb/day (daily maximum)

Internal Outfall 01C – Chemical Metal Cleaning Wastewater

Mass limits for TSS, O&G, Copper, and Iron are based on the following calculations using the technology-based concentrations in 40 CFR 423.15(a)(4):

TSS = (30 mg/l)(8.345 lb/gal)(0.013 mgd) = 3.3 lb/day (monthly average)
TSS = (100 mg/l)(8.345 lb/gal)(0.013 mgd) = 10.8 lb/day (daily maximum)

O&G = (15 mg/l)(8.345 lb/gal)(0.013 mgd) = 1.6 lb/day (monthly average)
O&G = (20 mg/l)(8.345 lb/gal)(0.013 mgd) = 2.2 lb/day (daily maximum)

Copper = (1.0 mg/l)(8.345 lb/gal)0.013 mgd) = 0.1 lb/day (monthly average)
Copper = (1.0 mg/l)(8.345 lb/gal)0.013 mgd) = 0.1 lb/day (daily maximum)

Iron = (1.0 mg/l)(8.345 lb/gal)0.013 mgd) = 0.1 lb/day (monthly average)
Iron = (1.0 mg/l)(8.345 lb/gal)0.013 mgd) = 0.1 lb/day (daily maximum)

2. Daily Maximum Limits:

Outfall 001

O&G daily maximum mass limit is based on the flow rate shown in Section 11 of this Fact Sheet in conjunction with the concentration given in Reg. 2.510. Calculation of the daily maximum mass limit is shown in the previous section.

Internal Outfall 01A – Cooling Tower Blowdown

FAC daily maximum mass limit is based on the flow rate shown in Section 11 of this Fact Sheet in conjunction with the concentration given in 40 CFR 423.15(a)(10). Calculation of the daily maximum mass limit is shown in the previous section and is based on an allowable discharge of FAC of 2 hours per day per generating unit. There is one generating unit at this facility.

Chromium and Zinc daily maximum mass limits are based on the flow rate shown in Section 11 of this Fact Sheet in conjunction with the concentrations given in 40 CFR 423.15(a)(10). Calculations of the daily maximum mass limits is shown in the previous section.

Internal Outfall 01B – Low Volume Wastewater

TSS and O&G daily maximum mass limits are based on the flow rate shown in Section 11 of this Fact Sheet in conjunction with the concentrations given in 40 CFR 423.15(a)(3). Calculation of the daily maximum mass limits are shown in the previous section.

Internal Outfall 01C – Chemical Metal Cleaning Wastewater

TSS, O&G, Copper, and Iron daily maximum mass limits are based on the flow rate shown in Section 11 of this Fact Sheet in conjunction with the concentrations given in 40 CFR 423.15(a)(4). Calculation of the daily maximum mass limits are shown in the previous section.

D. **Applicable Effluent Limitations Guidelines**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines (ELG) promulgated under 40 CFR Part 423 Steam Electric Power Generating Point Source Category. Since this facility was constructed after November 19, 1982, but prior to November 17, 2015, this facility is subject to the 1982 New Source Performance Standards (NSPS) established in the ELG in 40 CFR 423.15(a). A summary of the ELG effluent limitations applicable to each outfall is as follows:

40 CFR Part 423.15(a)(1) and 40 CFR Part 423.15(a)(10) Technology-based Effluent Limits for Cooling Tower Blowdown		
Pollutant	Monthly Average	Daily Maximum
Free Available Chlorine	0.2 mg/L	0.5 mg/L
The priority pollutants contained in chemicals used for cooling tower maintenance listed in Appendix A of 40 CFR 423, except for Chromium and Zinc [1]	No detectable amount[1]	No detectable amount[1]
Chromium, Total[1]	0.2 mg/L[1]	0.2 mg/L[1]
Zinc, Total[1]	1.0 mg/L[1]	1.0 mg/L[1]
pH	6.0 – 9.0 s.u.	

[1] Monitoring at Internal Outfall 01A is waived for all priority pollutants, including Chromium and Zinc, during this permit term because the facility has certified that no cooling tower maintenance chemicals containing any priority pollutant is used at this facility. This certification is dated January 24, 2019.

40 CFR Part 423.15(a)(1) and 423.15(a)(3) Technology-based Effluent Limits for Low Volume Wastewater		
Pollutant	Monthly Average	Daily Maximum
Total Suspended Solids	30 mg/L	100 mg/L
Oil & Grease	15 mg/L	20 mg/L
pH	6.0 – 9.0 s.u.	

40 CFR Part 423.15(a)(1) and 423.15(a)(4) Technology-based Effluent Limits for Chemical Metal Cleaning Wastewater		
Pollutant	Monthly Average	Daily Maximum
Total Suspended Solids	30 mg/L	100 mg/L
Oil & Grease	15 mg/L	20 mg/L
Copper, Total	1.0 mg/L	1.0 mg/L
Iron, Total	1.0 mg/L	1.0 mg/L
pH	6.0 – 9.0 s.u.	

Other ELG Regulated Wastestreams Consideration:

Flue Gas Desulfurization (FGD) Wastewater

40 CFR 423.13(g)(1) of the 2015 ELG requires facilities built after November 19, 1982, and prior to November 17, 2015, that generate FGD wastewater from wet FGD scrubber systems to comply with Arsenic, Mercury, Selenium, and Nitrate/Nitrite limits as soon as possible but no later than December 31, 2023. There are two types of FGD systems, wet and dry. Both wet and dry FGD systems are used to remove sulfur dioxide from the flue gas. This facility utilizes a dry FGD system in which a sorbent slurry is sprayed into a reactor vessel so that the droplets dry as they contact the hot flue gas. Although the dry FGD scrubber uses water, this water evaporates upon contact with the hot flue gas and does not result in a discharge of wastewater. Therefore, this facility does not produce a FGD wastestream.

Combustion Residual Leachate

40 CFR 423.13(l) of the 2015 ELG requires facilities built after November 19, 1982, and prior to November 17, 2015, to meet the 1982 NSPS limits for TSS which are specified in 40 CFR 423.12(b)(11) applicable to the discharge of combustion residual leachate. This facility has a leachate collection system and associated leachate pond. The leachate is pumped from the leachate pond to the lime slurry tank for use in the flue gas desulfurization (FGD) scrubber system, which is described in above paragraph. Therefore, this facility does not produce a combustion residual wastestream.

Coal Pile Runoff

40 CFR 423.15(a)(11) of the 2015 ELG requires facilities built after November 19, 1982 and prior to November 17, 2015 to meet the 1982 NSPS limits for TSS applicable to the discharge of coal pile runoff. This facility no longer discharges from the coal pile runoff pond. This water is recycled back to the makeup water system clarifiers and reused as service water within the facility. Therefore, this facility does not produce a coal pile runoff wastestream.

Fly Ash Transport Water

40 CFR 423.15(a)(7) of the 2015 ELG requires facilities built after November 19, 1982, and prior to November 17, 2015, that use water to transport (sluice) the fly ash to surface impoundments, to meet a zero discharge standard for fly ash transport wastewater as soon as possible but no later than December 31, 2023. This facility utilizes a dry fly ash handling system, therefore there is no fly ash transport water. Fly ash and other particulate matter is collected as a dry material by fabric filters (baghouse) then is dropped in hoppers underneath the baghouse, then transported by truck to the facility's landfill for proper disposal. Therefore, this facility does not produce fly ash transport water.

Bottom Ash Transport Water

40 CFR 423.13(k) of the 2015 ELG requires facilities built after November 19, 1982, and prior to November 17, 2015, that use water to transport (sluice) the bottom ash to surface impoundments to meet a zero discharge standard for bottom ash transport wastewater as soon as possible but no later than December 31, 2023. This facility utilizes a mechanical drag system (MDS). This bottom ash handling system collects bottom ash from the bottom of the boiler in a water-filled trough. The water bath in the trough quenches the hot bottom ash as it falls from the boiler and seals the boiler gases. A drag chain operates in a continuous loop to drag bottom ash from the water trough up an incline, which dewaters the bottom ash by gravity, draining the water back to the trough as the bottom ash moves upward. The dewatered bottom ash is collected in hoppers and then transported by truck to the facility's landfill for proper disposal. The MDS is considered a dry bottom ash handling system because the ash transport mechanism is mechanical removal by the drag chain, not the water. Therefore, this facility already meets the zero discharge standard for bottom ash transport water.

Flue Gas Mercury Control (FGMC) Wastewater

40 CFR 423.13(i) of the 2015 ELG requires facilities built after November 19, 1982, and prior to November 17, 2015, to meet a zero discharge standard for FGMC wastewater as soon as possible but no later than December 31, 2023. This facility uses a FGMC system where activated carbon is injected into the flue gas. The location of the injection point occurs after combustion and before the primary particulate removal system, therefore the mercury-containing carbon (FGMC wastes) are collected and handled in the same way, and together with, the facility's fly ash (dry handling). These wastes are properly disposed of in the facility's landfill. Therefore, this facility does not produce FGMC wastewater.

Gasification Wastewater

40 CFR 423.13(j) of the 2015 ELG requires Integrated Gasification Combined Cycle (IGCC) facilities built after November 19, 1982, and prior to November 17, 2015, to meet Arsenic, Mercury, Selenium, and Total Dissolved Solids limits for gasification wastewater as soon as possible but no later than December 31, 2023. IGCC facilities use a carbon-based feedstock (e.g. coal or petroleum coke) and subject it to high temperature and pressure to produce a synthetic gas (syngas), which is used as the fuel for a combined cycle generating unit. The syngas undergoes a cleaning process before combustion. The wastewater generated by this cleaning process is known as gasification wastewater. This facility does not utilize an IGCC process, therefore has no associated gasification wastestream. Therefore, this facility does not generate a wastestream containing gasification wastewater.

Note: EPA published a new effluent limitation guideline (ELG) for steam electric power plants on November 3, 2015. In the June 6, 2017 federal register, EPA agreed to reconsider the 2015 ELG and postpone compliance dates set forth in the ELG, based on several petitions requesting further review of the ELG. As discussed above, this facility does not generate any of the new 2015 ELG regulated wastestreams.

Therefore, this reconsideration action by the EPA does not affect any portion of the permit for this facility.

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

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

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

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

The following items were used in calculations:

Parameter	Value	Source
Discharge Flow = Q	1.87 MGD = 2.9 cfs	Water balance diagram at 100% load included with renewal application.
7Q10 Background Flow	99,000 cfs	StreamStats report for USGS Station 07032000
LTA Background Flow	485,000 cfs	StreamStats report for USGS Station 07032000
TSS	8 mg/l	CPP Attachment V
Hardness as $CaCO_3$	81 mg/l	CPP Attachment VI
pH	7.67 s.u.	USGS Station 07032000. Average of hydrogen ion concentration converted to pH.
C_b, Upstream Concentration	Arsenic: 1 µg/l Chromium: 0 µg/l Copper: 8 µg/l Iron: 25 µg/l Lead: 1 µg/l Nickel: 2 µg/l Selenium: 0 µg/l Zinc: 11 µg/l	USGS 07032000 (Geometric mean of all values reported for this station)
Q_b background flow, Mixing zone flow for chronic toxicity	25% of 7Q10	Reg. 2.508 and CPP-Appendix D
Q_b background flow, ZID flow for acute toxicity	6% of 7Q10	Reg. 2.508 and CPP-Appendix D

The following pollutants were reported above detection levels:

Pollutant	Concentration Reported, µg/l	MQL, µg/l
Arsenic, Total Recoverable	8.51 [1]	0.5
Chromium, Total Recoverable	9.83 [2]	10
Copper, Total Recoverable	14.8 [2]	0.5
Iron, Total Recoverable	599 [3]	20
Lead, Total Recoverable	0.521 [1]	0.5
Nickel, Total Recoverable	7.88 [1]	0.5
Selenium, Total Recoverable	39.8 [2]	5
Zinc, Total Recoverable	140 [2]	20

[1] One value reported on priority pollutant scan.
[2] Highest value of 60 values reported on DMRs (Oct 2013 – Sep 2018) and 1 value reported on PPS.
[3] Highest value of 60 values reported on DMRs (Oct 2013 – Sep 2018).

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

1. **Aquatic Toxicity Evaluation**

a. Acute Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Acute, µg/l	Acute, µg/l	
Arsenic, Total Rec.	8.51	18.13	1.01	None [4]	No
Chromium, Total Rec.	9.83	9.83 [3]	0.00	2256.37	No
Copper, Total Rec.	14.8	14.8 [3]	8.00	38.87	No
Iron, Total Rec.	599	599 [3]	25.28	None [4]	No
Lead, Total Rec.	0.521	1.11	1.00	269.04	No
Nickel, Total Rec.	7.88	16.78	2.01	2603.30	No
Selenium, Total Rec.	39.8	39.8 [3]	0.02	20.00	No
Zinc, Total Rec.	140	140 [3]	11.06	319.04	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.
[3] Statistical ratio of 2.13 was not used since dataset consisted of more than 20 values.
[4] Arkansas has no acute water quality standard for this parameter at this time.

b. Chronic Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Chronic, µg/l	Chronic, µg/l	
Arsenic, Total Rec.	8.51	18.13	1.00	None [4]	No
Chromium, Total Rec.	9.83	9.83 [3]	0.00	731.94	No
Copper, Total Rec.	14.8	14.8 [3]	8.00	26.41	No
Iron, Total Rec.	599	599 [3]	25.07	None [4]	No
Lead, Total Rec.	0.521	1.11	1.00	10.48	No
Nickel, Total Rec.	7.88	16.78	2.00	289.12	No
Selenium, Total Rec.	39.8	39.8 [3]	0.00	5.00	No
Zinc, Total Rec.	140	140 [3]	11.02	291.33	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.
[3] Statistical ratio of 2.13 was not used since dataset consisted of more than 20 values.
[4] Arkansas has no chronic water quality standard for this parameter at this time.

2. **Human Health (Bioaccumulation) Evaluation**

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1]	Instream Waste Concentration (IWC) µg/l	Criteria[2] µg/l	Reasonable Potential (Yes/No)
Arsenic, Total Rec.	8.51	18.13	1.00	1.4 [5]	No
Chromium, Total Rec.	9.83	9.83 [3]	0.00	100 [6]	No
Copper, Total Rec.	14.8	14.8 [3]	8.00	13,000 [5]	No
Iron, Total Rec.	599	599 [3]	25.00	300 [4]	No
Lead, Total Rec.	0.521	1.11	1.00	50 [4]	No
Nickel, Total Rec.	7.88	16.78	2.00	46,000 [5]	No
Selenium, Total Rec.	39.8	39.8 [3]	0.00	42,000 [5]	No
Zinc, Total Rec.	140	140 [3]	11.00	260,000 [5]	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.
[3] Statistical ratio of 2.13 was not used since dataset consisted of more than 20 values.
[4] 1986 EPA Gold Book criteria.
[5] 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.
[6] National Primary Drinking Water Standard.

ADEQ has determined from the submitted information that the discharge does not pose the reasonable potential to cause or contribute to an exceedance above a listed criteria.

13. 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 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

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

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

TOXICITY TESTS	**FREQUENCY**
48 hour Acute WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is greater than 100 cfs (ft^3/sec) and dilution ratio is greater than 100:1, acute WET testing requirements are included in the permit.

The calculations for dilution used for the acute WET testing are as follows:

Critical Dilution (CD) = (Qd / (Qd + Qb)) × 100

Qd = Average Flow = 1.87 MGD = 2.9 cfs
7Q10 = 99,000 cfs
Qb = Background flow = 0.1 × 0.25 × 7Q10 = 2,475 cfs
CD = ((2.9) / (2.9 + 2,475)) × 100 = 0.12%

Toxicity tests shall be performed in accordance with protocols described in "Methods for Measuring the Acute Toxicity of Effluent to Freshwater and Marine Organisms", EPA/600/4-90/027. 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 0.05%, 0.07%, 0.09%, 0.12%, and 0.16% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 0.12% effluent. The requirement for acute WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species *Daphnia pulex* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility;

the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be reported according to EPA-821-R-02-012, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

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

Administrative Records

The following information summarized toxicity test submitted by the permittee during the term of the current permit at outfall 001:

Permit Number:	AR0049557	AFIN:	47-00461	Outfall Number:	001
Date of Review:	11/30/2018	Reviewer:	A. Bates/M. Barnett		
Facility Name:	Plum Point Energy Station				
Previous Dilution series:	0.08, 0.11, 0.15, 0.20, 0.27%	Proposed Dilution Series:	0.05, 0.07, 0.09, 0.12, 0.16%		
Previous Critical Dilution:	0.20%	Proposed Critical Dilution:	0.12%		
Previous TRE activities:	none				

Frequency recommendation by species	
Pimephales promelas (Fathead minnow):	once per quarter
Daphnia pulex (water flea):	once per quarter

TEST DATA SUMMARY

	Vertebrate (*Pimephales promelas*)		Invertebrate (*Daphnia pulex*)	
TEST DATE	Lethal		Lethal	
	NOEC		NOEC	
12/31/2013	0.27		0.27	
3/31/2014	0.27		0.27	
6/30/2014	0.27		0.27	
12/31/2014	0.27		0.27	
6/30/2015	0.27		0.27	
12/31/2015	0.27		0.27	
6/30/2016	0.27		0.27	
12/31/2016	0.27		0.27	
12/31/2017	0.27		0.27	
6/30/2018	0.27		0.27	
9/30/2018	0.27		0.27	
Failures noted in BOLD				

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal		**Invertebrate Lethal**	
Min NOEC Observed	0.27		0.27	
TU at Min Observed	370.37		370.37	
Count	11		11	
Failure Count	0		0	
Mean	370.370		370.370	
Std. Dev.	0.000		0.000	
CV	0		0	
RPMF	0		0	
Reasonable Potential	0.000		0.000	
100/Critical dilution	83333.333		83333.333	
Does Reasonable Potential Exist	No		No	

PERMIT ACTION

P. promelas acute - monitoring
D. pulex acute - monitoring

14. STORMWATER REQUIREMENTS

The federal regulations at 40 CFR 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 ARR000704.

15. SAMPLE TYPE AND FREQUENCY

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR Part 122.48(b)] and to ensure compliance with permit limitations [40 CFR Part 122.44(i)(l)].

Requirements for sample type and sampling frequency have been based on the current discharge permit, except sample type for TSS at Outfall 001 was changed from "24-hr composite" to "composite".

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
OUTFALL 001				
Flow	Daily	Totalizing meter	Daily	Totalizing meter
O&G	Once/weekday	Grab	Once/weekday[1]	Grab
TSS	Once/month	24-hr composite	Once/month	Composite[2]
pH	Once/weekday	Grab	Once/weekday[1]	Grab
Acute WET Testing	Once/quarter	Composite	Once/quarter	Composite[3]
INTERNAL OUTFALL 01A				
Flow	Daily	Totalizing meter	Daily	Totalizing meter
FAC	Once/weekday	Grab	Once/weekday[1]	Grab
Chromium, Total Rec.	N/A	N/A	N/A[4]	N/A[4]
Zinc, Total Rec.	N/A	N/A	N/A[4]	N/A[4]
The priority pollutants contained in chemicals used for cooling tower maintenance listed in Appendix A of 40 CFR 423, except for Chromium and Zinc	N/A	N/A	N/A [4]	N/A [4]
pH	Once/weekday	Grab	Once/weekday[1]	Grab
INTERNAL OUTFALL 01B				
Flow	Daily	Totalizing meter	Daily	Totalizing meter
O&G	Once/week	Grab	Once/week	Grab
TSS	Once/week	Composite	Once/week	Composite[2]
pH	Once/week	Grab	Once/week	Grab

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
INTERNAL OUTFALL 01C				
Flow	Five/week	Instantaneous	Five/week	Instantaneous
O&G	Twice/month	Grab	Twice/month	Grab
TSS	Twice/month	Grab	Twice/month	Grab
Copper, Total Rec.	Twice/month	Grab	Twice/month	Grab
Iron, Total Rec.	Twice/month	Grab	Twice/month	Grab
pH	Twice/month	Grab	Twice/month	Grab

[1] Weekday = Monday through Friday
[2] Composite sample for TSS is defined in Part IV of the permit.
[3] Composite sample for WET is defined in Part II.13 of the permit.
[4] Monitoring for all priority pollutants, including Chromium and Zinc, is waived at Outfall 01A during this permit term based on 40 CFR 122.44(a)(2) and a certification dated January 24, 2019 from the facility that no cooling tower maintenance chemicals containing any priority pollutant is used at the facility. See Part II.11 and II.12.

16. PERMIT COMPLIANCE SCHEDULE

A Schedule of Compliance has not been included in this permit. Compliance schedules are not allowed for the technology-based limits from the ELG. The mass loading reported for each outfall during the past five years was reviewed. Based on this reported data, there were no reported mass values that exceeded the revised mass limits included in this permit.

17. MONITORING AND REPORTING

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

18. CWA 316(B) REQUIREMENTS FOR COOLING WATER INTAKE STRUCTURE (CWIS)

Construction on this facility commenced after January 17, 2002. Therefore, this facility is considered a "new facility" as defined in 40 CFR 125.83(k). These requirements are applicable to a new facility if it has an intake structure that uses at least 25 percent of the water it withdraws for cooling purposes and has a design intake flow greater than 2 MGD unless the facility obtains cooling water from a public water system (40 CFR 125.81(b)). The CWIS at this facility was originally designed for a total design intake flow of 20,400 gpm (45.45 cfs) when two generating units were in operation. Because only one generating unit was constructed, the design intake flow of the CWIS is 10,200 gpm (22.73 cfs). Therefore, to the extent this facility obtains cooling water from its intake structure and not a public water system, it is subject to 40 CFR 125, Subpart I – Requirements Applicable to Cooling Water Intake Structures for New Facilities Under Section 316(b) of the Clean Water Act. This subpart establishes requirements that apply to the location, design, construction, and capacity of cooling water intake structures at new facilities. The purpose of these requirements is to establish the best technology available for minimizing adverse environmental impact associated with the use of cooling water intake structures. The facility has chosen to comply with these regulations for its intake structure under Track I (40 CFR 125.84(b)).

Track I includes the following requirements:

A. Reduction of intake flow to a level commensurate with that which can be attained by a closed-cycle recirculating cooling water system.

This facility operates a mechanical draft cooling tower and a closed cycle recirculating cooling water system. Therefore, the design and construction of this facility meets this requirement.

B. Design and construct the intake structure to have a maximum through-screen design intake velocity of 0.5 ft/sec.

The wedgewire intake screen with slot opening of 0.125 inches (3.175 mm) was designed so that the maximum design intake velocity through the screen would be less than 0.5 feet per second when two generating units were in operation with a total design intake flow of 20,400 gpm (45.45 cfs). Because only one generating unit was constructed, the design intake flow is 10,200 gpm (22.73 cfs), and the maximum through-screen design intake velocity is 0.203 feet per second.[2] Therefore, the design and construction of the CWIS at this facility meets this requirement.

C. Design intake flow must be no greater than 5% of the source water annual mean flow.

The design intake flow must be no greater than 5% of the source water annual mean flow. The annual mean flow of the source water is 631,971 cfs based on 2013 stage data recorded by the USACE at Mississippi River H.W. Gage 152 near Osceola, Arkansas at river mile 783.5. The design intake flow is less than 0.01 percent of the annual mean flow of the Mississippi River. Therefore, the design and construction of the CWIS at this facility meets this requirement.

D. Monitoring Requirements (40 CFR 125.87)

Due to the design and operational characteristics of the facility's cooling water intake structure, alternative biological and visual monitoring requirements are being granted pursuant to 40 C.F.R. § 125.85. The alternative monitoring requirements are included in Condition 14 of Part II of this permit and are discussed below:

<u>Biological Monitoring</u>

In accordance with 40 CFR 125.85, the permittee shall conduct the following alternative monitoring procedures when the cooling water intake structure is in operation to demonstrate compliance with the biological monitoring requirements of Section 316(b) of the Clean Water Act:

[2] This information is from the "Impingement Mortality & Entrainment Study" dated January 2016, prepared for Plum Point Energy Station by EnSafe, Inc.

i. As an alternative to conducting monthly impingement sampling, the permittee shall operate and maintain a CWIS composed of a cylindrical wedge-wire intake screen with the screen surface oriented parallel to the river flow and positioned approximately 300 feet off-shore at a depth of approximately 60 feet. The cylindrical design and parallel orientation of the screen surface to the river flow allows for passive cleaning of the intake screen by the sweep velocity created by the river current. In addition to the passive cleaning of the CWIS screen, the permittee shall operate an air burst system which releases compressed air inside the CWIS and exits the screen in the opposite direction of the normal intake water flow. The air burst system shall be operated at least three times per week to assure any fouling debris is removed from the screen. To monitor for periods of significant screen fouling, the permittee shall, at least once per month, monitor water levels in the cooling water caisson compared to the river water levels. Any significant difference in the water level between the caisson and the river would indicate excessive fouling of the CWIS screen. Because visual inspection of the intake screen in the highly turbid Mississippi River is infeasible, no impingement sampling can be performed. This alternative monitoring plan is justifiable due to diver safety concerns and low underwater visibility. The permittee shall include the records of air burst operation, river surface elevation, and water level in the cooling water caisson, in each 316(b) annual compliance report submitted in accordance with Part II.14.3 of the permit.

ii. As an alternative to conducting annual entrainment sampling, the permit requires entrainment sampling over a 24-hour period during one (1) of the first three (3) years of the term of this permit at a frequency of no less than once every two weeks (biweekly) during the primary period of reproduction, larval recruitment, and peak abundance. This primary period has been determined to be March 1 through August 31, based upon the location of the intake structure and a review of previous entrainment sampling results conducted in 2010, 2011, 2012, 2013, and 2015. All months of entrainment sampling must be performed during the same calendar year. The permittee will be required to submit the results of the most recent entrainment sampling in each annual 316(b) compliance report.

On February 1, 2016, the facility submitted the 2015 316(b) annual compliance report. With this report the facility requested that the entrainment sampling requirement be discontinued. This request was based on several reasons including the air-burst screen backwash system, river/caisson water level monitoring, high sweep velocities across the screen face, low through-screen velocities, and five years of entrainment data already performed. The facility proposed that if entrainment sampling could not be completely eliminated, entrainment sampling would be performed biweekly during only one year of the five year permit term, during the primary period of reproduction, larval recruitment, and peak abundance.

The Department has reviewed the request to eliminate entrainment monitoring, or alternatively reduce monitoring frequency. Consideration of this request involved review of the five years of sampling results, numbers and types of organisms entrained, the design, location, and operational characteristics of the CWIS, and the regulations and preamble of Part 125, Subpart I – Requirements Applicable to

Cooling Water Intake Structures for New Facilities Under Section 316(b) of the Act.

40 CFR 125.87(a) states, "You must follow the monitoring frequencies identified below for at least two (2) years after the initial permit issuance. After that time, the Director may approve a request for less frequent sampling in the remaining years of the permit term and when the permit is reissued, if supporting data show that less frequent monitoring would still allow for the detection of any seasonal and daily variation in the species and numbers of individuals that are impinged or entrained."

40 CFR 125.89(a)(2) states, "For each subsequent permit renewal, the Director must review the application materials and monitoring data to determine whether requirements, or additional requirements, for design and construction technologies or operational measures should be included in the permit."

The preamble to the 316 regulations, on page 65321 of the December 18, 2001 Federal Register states, "The Director should approve a request for reduced frequency in biological monitoring only if the supporting data show that the technologies are consistently performing as projected under all operating and environmental conditions and less frequent monitoring would still allow for the detection of any future performance fluctuations."

Based on the Department's review of the regulations and preamble, complete elimination of the entrainment monitoring is not supported by the federal regulation. If monitoring was completely eliminated, it would be impossible to detect any future performance fluctuations of the CWIS, determine if any additional operational measures should be included in the permit, or allow for the detection of any seasonal and daily variation in the species and numbers of individuals that are impinged or entrained. However, the federal regulation supports a reduced frequency of monitoring provided the aforementioned items can still be determined through reduced monitoring. Based on the five years of entrainment monitoring completed at this facility, and the location and design of the intake structure, the Department has determined that biweekly entrainment sampling over a 24 hour period from March 1 through August 31 at a frequency of one year of the five year permit term will allow the detection of any seasonal fluctuations in species, numbers of entrained organisms, and any fluctuations in performance of the CWIS. The permit requires the entrainment sampling to be performed from March 1 through August 31, during years 1, 2, or 3 of the five year permit term to ensure the annual report will be available at the time of the next permit renewal application.

Velocity Monitoring

As an alternative to velocity monitoring, the CWIS design intake velocity is maintained by regular operation of air burst technology and monitoring the water level in the caisson compared to the river. The regular use of the air burst technology is designed to maintain the open area of the screen so that through-screen velocity is maintained at or below 0.5 ft/sec. During development of the Clean Water Act 316(b) rules, EPA concluded that reducing the through-screen velocity to less than 0.5 ft/sec will enable a majority of aquatic organisms to escape the hydraulic zone of influence around the

intake screen. Therefore, the regular use of the air burst technology, monitoring of caisson water levels compared to the river level, combined with the design features and location of the intake screen, will ensure that the screen open area is maintained so that the through-screen velocity is maintained at or below 0.5 ft/sec.

Visual or Remote Inspections

As an alternative to visual inspections of the intake screen, the intake screen is remotely monitored by operating air burst technology and monitoring of the water level in the caisson compared to the river. The use of these alternative procedures will ensure that the screen open area is maintained and operating at velocities less than 0.5 feet per second.

E. Record Keeping and Reporting Requirements (40 CFR 125.88)

The permittee shall keep records of all compliance monitoring data submitted under Parts II.16.2.a.i and II.16.2.a.ii of the permit for a period of at least five (5) years from the date such data is collected. On or before February 1 of each year, the permittee shall submit an annual 316(b) compliance report to the Office Water Quality, Permits Branch containing all records collected pursuant to Part II.16.2.a.i and Part II.16.2.a.ii of the permit. The five year minimum period for record retention was chosen to ensure that records of entrainment monitoring will be available to include in each renewal application, and this record retention requirement is consistent with the five year term of the permit.

19. **SOURCES**

The following sources were used to draft the permit:

A. Application No. AR0049557 received October 30, 2017.
B. Arkansas Water Quality Management Plan (WQMP).
C. APC&EC Regulation No. 2.
D. APC&EC Regulation No. 3.
E. APC&EC Regulation No. 6 which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Reg. 6.104.
F. 40 CFR Parts 122 and 125.
G. 40 CFR Part 125, Subpart I (Requirements Applicable to Cooling Water Intake Structures for New Facilities Under Section 316(b) of the Clean Water Act).
H. 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).
I. Discharge permit file AR0049557.
J. Discharge Monitoring Reports (DMRs).
K. “2016 Integrated Water Quality Monitoring and Assessment Report”, ADEQ.
L. “2016 List of Impaired Waterbodies (303(d) List)”, ADEQ, July 2017.
M. “2016 303(d) List”, TN Department of Environment and Conservation, December 2017.
N. “Total Maximum Daily Loads (TMDLs) For Chlordane, Dioxins, and Polychlorinated Biphenyls (PCBs) in the Mississippi River, Mississippi River Watershed (HUC 08010100), Dyer, Lake, Lauderdale, Tipton and Shelby Counties, Tennessee”, prepared and submitted on July 9, 2008 by Tennessee Department of Environment and Conservation, and EPA approved on July 25, 2008.

O. USGS StreamStats 4.0 web-based program for USGS station 07032000.
P. 2010, 2011, 2012, 2013, and 2015 annual compliance reports for CWA 316(b).
Q. Continuing Planning Process (CPP).
R. Technical Support Document For Water Quality-based Toxic Control.
S. Inspection Report dated August 30, 2017.
T. Compliance Review Memo from Christina Brown to Shane Byrum dated November 16, 2018.
U. Certification from facility dated January 24, 2019 concerning cooling tower maintenance chemicals.
V. Comment letter on draft permit from The Department of Arkansas Heritage dated May 3, 2019.
W. Comment letter on draft permit from Plum Point Energy Station dated May 29, 2019.

20. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on May 1, 2019. The last day of the comment period was May 31, 2019. A summary of the comments received by the ADEQ during the public comment period and response to the comments are included with this permit decision. The response to comments also includes a discussion of any substantial changes from the draft permit.

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

21. PERMIT FEE

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

22. POINT OF CONTACT

For additional information, contact:

Shane Byrum
Permits Branch, Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0618

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

Permit No.: AR0049557

Applicant: Plum Point Services Company, LLC
Plum Point Energy Station

Prepared by: Shane Byrum

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

Introduction

The above permit was submitted for public comment on May 1, 2019. The public comment period ended on May 31, 2019.

This document contains a summary of the comments that the ADEQ received during the public comment period. A summary of the changes to the NPDES Permit can be found on the last page of this document.

The following people or organizations sent comments to the ADEQ during the public notice. A total of five (5) comments were raised by two (2) separate commenters.

	Commenter	Number of Comments Raised
1.	Plum Point Energy Station (PPES)	4
2.	The Department of Arkansas Heritage	1

Comment 1 PPES commented that stormwater is listed as an allowable discharge within the first paragraph on the cover page of the draft permit. Since Outfall 01D was removed, stormwater is no longer a source to Outfall 001. None of the remaining outfalls have stormwater listed as a source. Therefore, PPES requests that stormwater be removed from the cover page of the permit.

Response: The Department agrees to remove the word "stormwater" from the cover page of this permit. All stormwater discharges from the facility shall only occur at permitted outfalls under NPDES Industrial Stormwater General Permit Tracking Number ARR000704.

Comment 2 PPES commented that since Outfall 01D was removed, stormwater is no longer a source at Outfall 001. Stormwater runoff from the facility is covered under the Industrial Stormwater General Permit. Therefore, PPES requests that the BMP language in Part II.4 as it relates to stormwater runoff be removed from the permit.

Response: Since stormwater is no longer a source at Outfall 001, the BMP language in Part II.4 was revised by deleting the phrase "stormwater runoff" as shown below:

Best Management Practices (BMPs), as defined in Part IV.7, must be implemented for the facility to prevent or reduce the pollution of waters of the State from ~~stormwater runoff,~~ spills or leaks, and/or waste disposal. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

Comment 3 PPES requested the following changes to Part II.8 of the permit:

a. Change the address for the permittee to:
Plum Point Services Company, LLC
4488 Onondaga Boulevard
Syracuse, NY 13219

b. Maintain all permit correspondence to the facility:
Plum Point Energy Station
P.O. Box 567
Osceola, AR 72370

c. Update the list of owners to the following:
- Plum Point Energy Associates, LLC
- East Texas Electric Cooperative, Inc.
- Missouri Joint Municipal Electric Utility Commission
- The Empire District Electric Company
- Municipal Energy Agency of Mississippi

Response: The permittee address and the list of owners in Part II.8 of the permit was updated as requested, and all permit correspondence will continue to be sent to P.O Box 567, Osceola, AR 72370, as stated on the cover page of the permit.

Comment 4 PPES commented that Part II.14.F provides for a monitoring frequency reduction for WET testing upon successful completion of the first four quarters or first twelve consecutive months of the current permit term of testing. The current permit expired on April 30, 2018. PPES resumed quarterly WET testing after the current permit expired. Multiple quarterly WET tests have been performed with no failures. PPES would like to utilize these WET tests in consideration of future monitoring frequency reductions and thus request that the following changes be made to Part 14.F.i. of the permit:

F. MONITORING FREQUENCY REDUCTION

i. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters *of testing* ~~or first twelve consecutive months~~(in accordance with Item A.i.) ~~of the current permit term of testing for one or both test species, with no lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Daphnia pulex).~~ *after the expiration date of the previous permit (April 30, 2018), for one or both test species, provided that all of the following conditions are met:*

a. The issuance of the renewed permit was not delayed by any fault of the permittee,
b. No 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.

If any of the above conditions are not met, the permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing (in accordance with Item A.i.) after the renewal permit is issued, for one or both test species, <u>with no 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 species (usually the Daphnia pulex).</u>

Response: Since the issuance of the renewal permit was delayed by no fault of the permittee, the Department agrees to replace the draft permit language in Part II.14.F.i. with the language shown above. Added language is shown in *italics* and removed language is shown in ~~strikeout font~~. Additional language not mentioned by the comment (shown in *<u>underlined italics</u>*) was also included for clarification.

Comment 5 The Department of Arkansas Heritage identified the following species of conservation concern known to occur within 5 miles downstream of the outfall in the Mississippi River:

Notropis wickliffi, channel shiner – state concern
Scaphirhynchus albus, pallid sturgeon – federal concern (endangered)
Sterna antillarum athalassos, Interior Least Tern – federal concern (endangered)

Response: The limits in the permit are designed to protect all beneficial uses of the receiving waters, including propagation of desirable species of fish and other aquatic life as well as other species which are directly or indirectly by the receiving waters, which includes the above species of concern. Therefore, ADEQ has determined that the final permit limits will serve to help protect the species of concern identified above. The species of concern listed above have been added to the Endangered Species section (7.C.) of the Fact Sheet for this permit.

Summary of Changes to the permit				
Part	Draft Permit	Final Permit	Justification	Comment #
Cover page of permit	List of authorized discharges included stormwater.	Stormwater was removed from list of authorized discharges under this permit.	This permit does not authorize stormwater discharge. All stormwater from the facility is permitted under ARG000704.	1
II.4	BMPs must be implemented at the facility for stormwater, spills or leaks, and/or waste disposal.	Stormwater was removed from list of activities required for BMP implementation.	This permit does not authorize stormwater discharge. All stormwater from the facility is permitted under ARG000704.	2
II.8.a.	Permittee address listed as: Plum Point Services Company, LLC P.O. Box 567 Osceola, AR 72370	Permittee address listed as: Plum Point Services Company, LLC 4488 Onondaga Boulevard Syracuse, NY 13219	Permittee address changed, but facility mailing address remains unchanged	3
II.8.b.	List of owners: -Plum Point Energy Associates, LLC -East Texas Electric Cooperative, Inc. -Missouri Joint Municipal Electric Company -Municipal Energy Agency of Mississippi	List of owners: -Plum Point Energy Associates, LLC -East Texas Electric Cooperative, Inc. -Missouri Joint Municipal Electric Utility Commission -The Empire District Electric Company -Municipal Energy Agency of Mississippi	Updated list of owners	3
II.14.F.i.	Eligibility for WET testing frequency reduction required 4 consecutive quarterly tests during the new permit term with no lethal effects.	Eligibility for WET testing frequency reduction requires 4 consecutive quarterly tests after the expiration date of previous permit with no lethal effects.	The permit renewal was delayed by no fault of permittee.	4
7.C. of Fact Sheet	No species of concern are identified.	List of species of concern added.	Species of concern identified by Department of Arkansas Heritage.	5