Permit Number: AR0043389
AFIN: 54-00083

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8–4–101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

The applicant's mailing address is:

Helena Municipal Water and Sewer System
702 Cherry Street
Helena-West Helena, AR 72342

The applicant is authorized to discharge from a facility located as follows. The facility's access road is approximately 300 feet east-southeast from the intersection of State Hwy. 44 and Phillips Road 301 and 0.22 mile west from the intersection of State Hwy. 44 and Long Lake Road. From State Hwy. 44, travel north approximately 0.3 mile on the facility's access road to reach the treatment lagoon in Phillips County, Arkansas.

Latitude: 34° 29' 45.90"; Longitude: 90° 38' 00.87"

to receiving waters named:

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

The outfall is located at the following coordinates:

Outfall 001: Latitude: 34° 29' 14"; Longitude: 90° 35' 43"

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

A Response to Comments is attached.

Issue Date: October 31, 2009

Effective Date: November 1, 2009

Expiration Date: October 31, 2014

Steven L. Drown

Steven L. Drown
Chief, Water Division
Arkansas Department of Environmental Quality

PART I
PERMIT REQUIREMENTS

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

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below from a treatment system consisting of a four-cell lagoon (i.e., oxidation ponds) with a design flow of 1.7 MGD.

Effluent Characteristics	**Discharge Limitations**			**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter
Biochemical Oxygen Demand (BOD5)	354	30.0	45.0	three/week	3-hr composite
Total Suspended Solids (TSS)	1,276	90.0	135.0	three/week	3-hr composite
Dissolved Oxygen (DO)	N/A	2.0 (Instantaneous Minimum)		three/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100 ml)			
(April – September)	N/A	200	400	three/week	grab
(October – March)	N/A	1,000	2,000	three/week	grab
Total Phosphorus	Report	Report	Report	once/month	grab
Nitrate + Nitrite (as Nitrogen)	Report	Report	Report	once/month	grab
pH	N/A	Minimum 6.0 s.u.	Maximum 10.5 s.u.	three/week	grab
Acute WET Testing[1]	N/A	Report		once/quarter	24-hr composite
Pimephales promelas (Acute)[1]		48-hr Minimum			
Pass/Fail Lethality (48-Hr NOEC) **TEM6C**		Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (48-Hr NOEC) **TOM6C**		Report %		once/quarter	24-hr composite
Coefficient of Variation (48-Hr NOEC) **TQM6C**		Report %		once/quarter	24-hr composite
Daphnia pulex (Acute)[1]		48-hr Minimum			
Pass/Fail Lethality (48-Hr NOEC) **TEM3D**		Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (48-Hr NOEC) **TOM3D**		Report %		once/quarter	24-hr composite
Coefficient of Variation (48-Hr NOEC) **TQM3D**		Report %		once/quarter	24-hr composite

1 See Condition No. 8 of Part II (WET Testing Condition).

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen due to the presence of oil. (Sheen means an iridescent appearance on the surface of the water.)

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after final treatment at the following monitoring coordinates: Latitude: 34° 29' 40.0" Longitude: 90° 38' 16.4."

SECTION B. PERMIT COMPLIANCE

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

1. Compliance with all final effluent limitations is required on the permit's effective date.

2. Discharge of raw wastewater into Cell #3 will cease as soon as possible but no later than one (1) year after the permit's effective date. Progress reports on this issue must be submitted to the Enforcement Branch of ADEQ's Water Division according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	Four (4) months from the permit's effective date
Progress Report	Eight (8) months from the permit's effective date
Cease Bypass	One (1) year from the permit's effective date

3. The permittee shall measure the average sludge depth (current), determine the average design depth (from the original design basis), and measure the average operating depth (what's left) in each lagoon cell within 90 days of the permit's effective date. The permittee shall submit a report to the Department within 120 days from the permit's effective date detailing the results of this study. The report shall also include plans for solids and sludge removal or justification for not removing the solids and sludge. The Department reserves the right to require removal of the sludge and solids, if necessary.

4. Compliance with Part II.12 (Freeboard Measurement) is required six (6) months from the permit's effective date.

5. Within six (6) months of the permit's effective date, a report must be submitted to the Enforcement Branch of ADEQ's Water Division that certifies that there will be no bypasses of Cell # 1 except as allowed by Part III.B.4 (i.e., that wet-weather bypasses will not occur). This report must be signed pursuant to Part III.D.11.b, certified pursuant to Part III.D.11.c, and signed and stamped by an Arkansas-registered professional engineer.

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be licensed as at least a Class II Wastewater Operator by the State of Arkansas in accordance with Act 211 of 1971, Act 1103 of 1991, Act 556 of 1993, and APCEC Regulation No. 3, as amended.

2. For publicly owned treatment works, the 30-day average percent removal for Biochemical Oxygen Demand (BOD5) and Total Suspended Solids (TSS) shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Parts 133.101(f), 101(g), 102(a), 102(b), 103(c), 105(a)(3), and/or 105(b)(3), as adopted by reference in APCEC Regulation No. 6.

3. Sludge is retained in the treatment lagoon cells. If it is removed, the sludge must be disposed of at a properly licensed facility.

4. The permittee shall report all overflows with the Discharge Monitoring Report (DMR) submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: the date, time, duration, location, estimated volume, and cause of overflow; observed environmental impacts from the overflow; action taken to address the overflow; and ultimate discharge location if not contained (e.g., storm sewer system, ditch, tributary). All overflows which endanger health or the environment shall be orally reported to this department (Enforcement Branch of the Water Division), within 24 hours from the time the permittee becomes aware of the circumstance. A written report of overflows which endanger health or the environment, shall be provided within 5 days of the time the permittee becomes aware of the circumstance.

5. 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.

6. Other Specified Monitoring Requirements

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

   - The monitoring and analytical instruments are consistent with accepted scientific practices;

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

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

7. Contributing Industries and Pretreatment Requirements

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

      (1) Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 140° Fahrenheit or 60° Centigrade using the test methods specified in 40 CFR Part 261.21;

      (2) Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with a pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;

      (3) Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference[1] or Pass Through;[2]

      (4) Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference or Pass Through at the POTW;

      (5) Heat in amounts which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40° Centigrade (104° Fahrenheit) unless the Department, upon request of the POTW, approves the alternate temperature limit;

      (6) Petroleum oil, non-biodegradable cutting oil, or products of mineral origin in amounts that will cause Interference or Pass Through;

[1] For a definition of Interference, see Definition 37 in Part IV of this permit.
[2] For a definition of Pass Through, see Definition 38 in Part IV of this permit.

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and/or

(8) Any trucked or hauled pollutants, except at discharge points designated by the POTW.

b. The permittee shall comply with the pretreatment requirements in 40 CFR Part 403 as specified in the following schedule of compliance. The final approvable package is due 12 months after the permit's effective date.

Pretreatment Schedule of Compliance:

ACTIVITY NUMBER	ACTIVITY	DATE
1	Submit to the Department the results of an industrial user survey which consists of a qualitative analysis of pollutants being contributed by all industrial sources in its entire municipal system (including all treatment plants). The industrial users should be asked to provide information on the type and approximate quantity of pollutants discharged into the system. This information may be derived from knowledge of the facility's process, and should not require any sampling at the source. (Unless the Department notifies the permittee otherwise within 30 days after receipt of this survey, the permittee will be required to continue the program past Activity No. 1. If notified that a pretreatment program is not necessary, the permittee will submit to the Department an update of its industrial user survey, documenting changes in industrial flow and/or characteristics and new contributing industries when next reapplying for this NPDES permit.)	2 months from the permit's effective date
2	Submit to the Department a design of a sampling, inspection and reporting program which will implement the requirements of 40 CFR Parts 403.8 and 403.12, and in particular those requirements referenced in 40 CFR Parts 403.8(f)(l)(iv-v), 403.8(f)(2)(iv-vi), and 403.12(g-j and l-p).	4 months from the permit's effective date
3	Submit to the Department an evaluation of the financial programs, revenue sources, equipment and staffing, which will be employed to implement the pretreatment program [as required by 40 CFR Parts 403.8(f)(3) and 403.9(b)(3)].	6 months from the permit's effective date

4	Submit to the Department the results of an influent pollutant scan (a 24-hour composite sample) to determine all pollutants being contributed to the system. The type of scan to be performed is the basic priority pollutant scan of the 126 "priority pollutants" plus any other pollutants designated in the Arkansas Water Quality Standards. All sampling, analyses, and method detection limits must be done in accordance with 40 CFR Part 136. This scan will also serve as the initial scan necessary for developing technically based local limits (Activity 5 as follows). a) From the qualitative information supplied by the industrial users in Activity 1 and the quantitative information collected in the pollutant scan, the permittee shall determine which industrial users may be discharging pollutants which may affect the operation of the POTW(s) or pass through untreated. b) Sampling and analysis to quantify the pollutants discharged by the industrial users, identified in the investigation of (a) above, shall be completed.	6 months from the permit's effective date
5	Submit to the Department an approvable technically based local limits submission package as required by 40 CFR Part 403.8(f)(4). Technically based local limits should be developed in accordance with *EPA Region 6 Technically Based Local Limits Development Guidance.*	9 months from the permit's effective date
6	40 CFR Part 403.8(f)(1) requires POTWs to apply and enforce the requirements of Sections 307(b) and (c), and 402(b)(8) of the Act and any regulations implementing those sections. Submit to the Department: a) a statement from the city solicitor, a city official acting in a comparable capacity, or the city's independent counsel, that the POTW has the authority to carry out the program; b) a copy of any statute, ordinance, regulation, contract, agreement, or other authority that will be relied on by the POTW to administer the program; c) a statement reflecting the endorsement of or approval by the local boards or bodies responsible for supervising and/or funding the program;	10 months from the permit's effective date

	d) any additional documents required in multi-jurisdictional situations for administration of the program; and, e) an enforcement response plan that shall contain detailed procedures indicating how the POTW will investigate and respond to instances of industrial user noncompliance. The plan shall contain, at a minimum, the aspects defined at 40 CFR Part 403.8(f)(5).	
7	Submit to the Department an approvable pretreatment program (and removal credit approval, if desired and appropriate) as required by 40 CFR Part 403.9. The approvable pretreatment program shall include a compilation of all previously submitted pretreatment program activities as finally amended and supplemented (i.e., Activities 1–6). Upon notification by the Department of approvability of the submitted program, the permittee is required to submit an official request for program approval, including three (3) copies of the program deemed to be approvable.	12 months from the permit's effective date

c. If the permittee does not comply with any of the increments of the progress in the above schedule, the permittee shall submit to the Department within fourteen (14) days of the activity due date a report including, at a minimum, the date on which the required activity will be submitted, the reason for the delay, and the steps taken to return to the established schedule.

d. Upon approval of a local pretreatment program by the Department, this permit will be modified, or, alternatively, revoked and reissued to incorporate that pretreatment program.

e. The permittee may develop and submit an approvable pretreatment program at any time before the deadline established in Activity 7.

f. The permittee may apply for authority to revise categorical pretreatment standards to reflect POTW removal of pollutants in accordance with the requirements of 40 CFR Part 403.7 at any time.

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

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

(1) Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Act if it were directly discharging those pollutants; and

(2) Any substantial change in the volume or character of pollutants being introduced into the treatment works.

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

8. Whole Effluent Toxicity (WET) Testing (48–Hour Acute NOEC Freshwater)

a. SCOPE AND METHODOLOGY

(1) The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL:	001
REPORTED ON DMR AS FINAL OUTFALL:	001
CRITICAL DILUTION (%):	0.100
EFFLUENT DILUTION SERIES (%):	0.042, 0.056, 0.075, 0.100, & 0.133
MINIMUM 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.

(2) 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.

(3) This permit may be reopened to require WET 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 additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

If any valid test demonstrates significant lethal effects to a test species at or below the critical dilution, the testing frequency for this species is automatically increased to at least once per quarter with no option for frequency reduction.

(1) Part I Testing Frequency Other Than Monthly

i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item d of this section and submitted with the period's DMR to the permitting authority for review.

ii. If any of the additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item 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 be 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.

iii. The provisions of Item b(1) are suspended upon submittal of the TRE Action Plan.

(2) Part I Testing Frequency of Monthly

The permittee shall initiate the TRE requirements as specified in Item e of this section when any two of three consecutive monthly toxicity tests exhibit significant lethal effects at or below the critical dilution. 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. REQUIRED TOXICITY TESTING CONDITIONS

(1) Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

i. Each toxicity test control (0% effluent) must have a survival equal to or greater than 90%.

ii. 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.

iii. 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.

iv. If a test passes, the test will still be determined to be invalid if 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. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

v. 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%.

(2) 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 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(1) 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.

(3) Dilution Water

i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

(A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

(B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item c(1), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

(A) a synthetic dilution water control which fulfills the test acceptance requirements of Item c(1) was run concurrently with the receiving water control;

(B) the test indicating receiving water toxicity has been carried out to completion (i.e., 48 hours);

(C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item d below; and

(D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

(4) Samples and Composites

i. The permittee shall collect two flow–weighted composite samples from the outfall(s) listed at Item a(1) above. Unless otherwise stated in this section, a composite sample for WET shall consist of 12 subsamples gathered at equal time intervals during a 24-hour period.

ii. 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 6 degrees Centigrade during collection, shipping, and/or storage.

iii. The permittee must collect all three flow-weighted composite samples within the monitoring period. Second and/or third composite samples shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.

iv. The permittee must collect the composite samples 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.

v. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. 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

(1) 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 which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

(2) A valid test for each species must be reported on the DMR during each reporting period specified in Part I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST Survival results for each species during the reporting period. The full report for all invalid tests, repeat tests (for

invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

(3) The permittee shall report the following results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with Part III.D.4 of this permit. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

i. Pimephales promelas (Fathead minnow)

(A) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C.

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

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

ii. Daphnia pulex

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

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

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

e. TOXICITY REDUCTION EVALUATION (TRE)

(1) Within ninety (90) days of confirming lethality in the retests, the permittee shall submit a 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 TRE 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:

i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation,

treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures, the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA–600/6–91/003) or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified.

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.

iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).

(2) 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.

(3) The permittee shall submit a quarterly TRE Activities Report, with the DMR in the months of January, April, July and October, containing information on TRE activities including:

i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.

(4) The permittee shall submit a Final Report on TRE 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.

(5) 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 WET limits per federal regulations at 40 CFR Part 122.44(d)(1)(v).

f. MONITORING FREQUENCY REDUCTION

(1) The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item a(1) 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 may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Daphnia pulex).

(2) 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(1) 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.

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

(4) This monitoring frequency reduction 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.

9. This permit requires the permittee to monitor and report the concentration of Total Phosphorus (TP) and Total Nitrate + Nitrite (as Nitrogen) on a periodic basis. Based on the results submitted, this permit may be reopened to include numerical limits for these pollutants pursuant to 40 CFR Part 122.62. Numerical limits, if any, will be determined in accordance with APCEC Regulation No. 2 and/or the CPP.

10. After three (3) years of data are collected for Total Phosphorus (TP) and/or Total Nitrate plus Nitrite (as Nitrogen), the permittee may request a monitoring frequency reduction for these pollutants. This request must be made in writing and must be approved by the Department prior to taking place. If approved, the reduction in frequency will be made without a major permit modification.

11. The permittee is required to maintain at least 2.0 feet of freeboard above the total volume required for normal operation based on the design flow rate.

12. The permittee shall demonstrate compliance with Part II.11 by installing a graduated measuring device in the lagoon system so that the freeboard depth can be measured. A measurement must be taken and recorded at least once per week. The monitoring records shall be retained by the permittee pursuant to Part III.C.7. and must be made available to the ADEQ upon request.

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. Duty to Comply

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

2. Penalties for Violations of Permit Conditions

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

3. Permit Actions

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

a. Violation of any terms or conditions of this permit; or
b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
c. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
d. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
e. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by Part III.A.10. herein.

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

4. Toxic Pollutants

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

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

5. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" (Part III.B.4.a.), and "Upsets" (Part III.B.5.b.), 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 (Act 472 of 1949, as amended).

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. Permit Fees

The permittee shall comply with all applicable permit fee requirements for wastewater discharge permits as described in APCEC Regulation No. 9. Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

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

2. Need to Halt or Reduce not a Defense

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

3. Duty to Mitigate

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

4. Bypass of Treatment Facilities

a. Bypass not exceeding limitation

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

b. Notice

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

c. Prohibition of bypass

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

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

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

5. Upset Conditions

a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.b. of this section are met. No determination made during administrative

review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

b. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   (1) An upset occurred and that the permittee can identify the specific cause(s) of the upset;
   (2) The permitted facility was at the time being properly operated.
   (3) The permittee submitted notice of the upset as required by Part III.D.6.; and
   (4) The permittee complied with any remedial measures required by Part III.B.3.

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

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State. Written approval must be obtained from the ADEQ for land application only.

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 discharges shall be monitored.

2. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a

maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

3. Monitoring Procedures

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

4. Penalties for Tampering

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

5. Reporting of Monitoring Results

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1 or other ADEQ-approved form). Permittees are required to use preprinted DMR forms provided by ADEQ, unless specific written authorization to use other reporting forms is obtained from ADEQ. Monitoring results obtained during the previous calendar month shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month following the completed reporting period to begin on the effective date of the permit. Duplicate copies of DMR forms signed and certified as required by Part III.D.11. and all other reports required by Part III.D., shall be submitted to the Director at the following address:

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

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

6. Additional Monitoring by the Permittee

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

7. Retention of Records

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

8. Record Contents

Records and monitoring information shall include:

a. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
b. The individuals(s) who performed the sampling or measurements;
c. The date(s) and time analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used; and
f. The measurements and results of such analyses.

9. Inspection and Entry

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

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

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give notice and provide plans and specification to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility. Notice is required only when:

Any change in the facility discharge (including the introduction of any new source or significant discharge or significant changes in the quantity or quality of existing discharges of pollutants) must be reported to the permitting authority. In no case are any new connections, increased flows, or significant changes in influent quality permitted that cause violation of the effluent limitations specified herein.

2. Anticipated Noncompliance

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

3. Transfers

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

4. Monitoring Reports

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

5. Compliance Schedule

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

6. Twenty-four Hour Report

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

provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:

(1) a description of the noncompliance and its cause;

(2) the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and

(3) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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

(1) Any unanticipated bypass which exceeds any effluent limitation in the permit;

(2) Any upset which exceeds any effluent limitation in the permit and

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Branch of the ADEQ's Water Division.

c. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Enforcement Branch of the ADEQ's Water Division.

7. Other Noncompliance

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

8. Changes in Discharge of Toxic Substances for Industrial Dischargers

The permittee shall notify the Director as soon as he/she knows or has reason to believe:

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

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

9. Duty to Provide Information

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

10. Duty to Reapply

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

11. Signatory Requirements

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

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

b. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   (1) The authorization is made in writing by a person described above.
   (2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant

manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The written authorization is submitted to the Director.

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

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

12. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2 and APCEC Regulation No. 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at ADEQ's North Little Rock office. 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 (Act 472 of 1949, as amended).

PART IV
DEFINITIONS

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

1. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
3. **"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.
4. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APCEC) Regulation No. 2, as amended.
5. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **"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. *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. *Concentration Calculations*: For pollutants with limitations expressed in other units of measurement, determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that sampling day by using the following formula: where C= daily concentration, F=daily flow and n=number of daily samples

$$\frac{C_1F_1 + C_2F_2 + \cdots + C_nF_n}{F_1 + F_2 + \cdots + F_n}$$

7. **"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) report the monthly average (see 30-day average below).
8. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month. The 7-day average for FCB is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.
9. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
10. **"Director"** means the Administrator of the U.S. Environmental Protection Agency and/or the Director of the ADEQ.

11. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
12. **"Industrial User"** means a non-domestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
13. **"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.
14. **"POTW"** means a Publicly Owned Treatment Works.
15. **"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.
16. **"APCEC"** means the Arkansas Pollution Control and Ecology Commission.
17. **"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.
18. **"7-day average"** discharge limitation, other than for FCB, is the highest allowable arithmetic mean of the values for all effluent samples collected during the calendar week. The 7-day average for FCB is the geometric mean of the values of all effluent samples collected during the calendar week in colonies/100 ml. The Discharge Monitoring Report (DMR) should report the highest 7-day average obtained during the calendar month. For reporting purposes, the 7-day average values should be reported as occurring in the month in which the Saturday of the calendar week falls in.
19. **"30-day average"**, other than for FCB, is the arithmetic mean of the daily values for all effluent samples collected during 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. The 30-day average for FCB is the geometric mean of the values for all effluent samples collected during a calendar month. For FCB, report the monthly average as a 30-day geometric mean in colonies per 100 ml.
20. **"24-hour composite sample"** consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at frequent intervals proportional to flow over the 24-hour period.
21. **"12-hour composite sample"** consists of 12 effluent portions, collected no closer together than one hour and composited according to flow or a sample collected at frequent intervals proportional to flow over the 12-hour period.
22. **"6-hour composite sample"** consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow **or** a sample collected at frequent intervals proportional to flow over the 6-hour period.
23. **"3-hour composite sample"** consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow **or** a sample collected at frequent intervals proportional to flow over the 3-hour period.

24. **"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.
25. **"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.
26. **"For 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 monthly average as a 30-day geometric mean in colonies per 100 ml.
27. **"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.
28. **The term "MGD"** shall mean million gallons per day.
29. **The term "mg/l** "shall mean milligrams per liter or parts per million (ppm).
30. **The term "µg/l"** shall mean micrograms per liter or parts per billion (ppb).
31. **The term "cfs"** shall mean cubic feet per second.
32. **The term "ppm"** shall mean parts per million.
33. **The term "s.u."** shall mean standard units.
34. **The term "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.
35. **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 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.

    MONTHLY:

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

    QUARTERLY:

    (a) is defined as a fixed calendar quarter or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed

calendar quarters are: January through March, April through June, July through September, and October through December; or

(b) 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.

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.

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.

36. **The term "Weekday"** means Monday – Friday.
37. Pursuant to 40 CFR Part 403.3(k) the term **Interference** means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:
    (a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
    (b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued under (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) [including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA], the Clean Air Act, the Toxic Substances Control Act, and/or the Marine Protection, Research and Sanctuaries Act.
38. Pursuant to 40 CFR 403.3(p), the term **Pass Through** means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Final Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for the renewal of Permit Number AR0043389 for ADEQ Facility Identification Number (AFIN) 54-00083 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, AR 72118-5317

2. APPLICANT.

The applicant's mailing address is:[1]

Helena Municipal Water and Sewer System
702 Cherry Street
Helena-West Helena, AR 72342

The facility's access road is approximately 300 feet east-southeast from the intersection of State Hwy. 44 and Phillips Road 301 and 0.22 mile west from the intersection of State Hwy. 44 and Long Lake Road. From State Hwy. 44, travel north approximately 0.3 mile on the facility's access road to reach the treatment lagoon.

3. PREPARED BY.

The permit was prepared by:

Chris Roberts, P.E.
Staff Engineer
Discharge Permits Section, Water Division
(501) 683-5406
E-mail: roberts@adeq.state.ar.us

4. PERMIT ACTIVITY.

Previous Permit Effective Date: 02/01/2004
Previous Permit Expiration Date: 01/31/2009

[1] The city's name was changed to Helena-West Helena on January 1, 2006, but the city has not combined its wastewater operations yet. West Helena's wastewater treatment facility is authorized by NPDES Permit No. AR0022021.

The permittee submitted a permit renewal application on 09/17/2008, , with all additional information received by 08/03/2009.[2] The current discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

DMR Review:

The Discharge Monitoring Reports (DMRs) from the previous permit cycle were reviewed as part of the permit renewal process. The following exceedances were noted from March 2006 through February 2009: four for Biochemical Oxygen Demand (BOD5) (all three limits in January 2007 and the 7-Day Average concentration in April 2007).

No permit changes are necessary at this time due to these issues. If compliance becomes an issue, the permit may be reopened for modification pursuant to 40 CFR Part 122.62.

Legal Order Review:

There are currently no active Consent Administrative Orders (CAOs) or Notice of Violations (NOVs) for this facility.

Issues Identified During Site Visit:

The facility is currently operating as a four-cell treatment lagoon system, but it can be operated as a three cell or even a two cell system if maintenance is needed or during an emergency situation. Raw wastewater enters a splitter box that diverts the wastewater to either Cell #1 or Cell #2. A plate prevents the wastewater from entering Cell #2, but during periods of high flow, it appears to be possible that wastewater may overflow the plate and enter Cell #2 directly.[3,4] From Cell #2, there is a gate valve into Cell #3 (open) and a gate valve into Cell #4 (closed). Bypass limitations and requirements are in Part III.B.4, and a condition has been added to Part IB requiring the potential wet-weather bypass (i.e., around Cell #1) to be certified as a physical impossibility.

During the site visit on April 22, 2009, a PVC pipe was found entering Cell #3. This pipe is believed to discharge sanitary wastewater from a nearby industrial facility directly into Cell #3. Although the flow rate is small, it is an unpermitted bypass of Cell #1 and Cell #2. This must be corrected, and a compliance schedule has been added to Part IB to remove this bypass.

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[2] The application was mailed on July 22, 2008, but it was sent to ADEQ's previous address. The Post Office stopped forwarding mail from the P.O. Box earlier in the year, but it did not return the application to the permittee until September 15, 2008. When the error was discovered, the application was mailed to ADEQ's current address.
[3] During a site visit on 04/22/2009, it was noted that the plate guides into Cell #1 were bent, so it is not currently possible to divert the flow directly into Cell #2.
[4] A V-notch has been cut out of the top of the plate, so the overflow rate could be measured if it is observed.

The lagoon is experiencing significant levee erosion. On the external levees, operators periodically add riprap where the soil has been eroded away. The internal levees between Cell #2, #3, and #4 were not built large enough to handle motorized traffic, so riprap is not being added to these. A long-term solution is needed.

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:

a. The facility location description has been clarified.
b. The facility coordinates have been updated based on the gate coordinates collected by ADEQ's inspector.
c. One significant digit has been added to the concentration limits for BOD5 and TSS for accuracy reporting purposes.
d. DO limits have been added pursuant to Reg. 2.505.
e. Total Phosphorus monitoring requirements have been added based on the CPP.
f. Total Nitrate and Nitrite monitoring requirements have been added based on the CPP.
g. One significant digit has been added to the minimum pH limit to comply with Reg. 2.504.
h. The monitoring coordinates (sampling location) were added to Part IA.
i. A compliance schedule to remove the unpermitted bypass has been added to Part IB.
j. A requirement to measure and report the sludge depth has been added to Part IB.
k. A requirement to certify that wet-weather bypasses will not be allowed to occur has been added to Part IB.
l. Parts II, III, and IV have been revised.
m. The minimum wastewater operator classification has been specified as Class II in Part II.
n. A 85% minimum removal efficiency has been added to Part II for TSS pursuant to 40 CFR Part 133.
o. The sludge language has been updated in Part II because the permittee does not land apply biosolids.
p. The pretreatment language in Part II has been updated.
q. The WET language in Part II has been updated.
r. A condition has been added to Part II to allow the permittee to request less frequent monitoring for TP and Nitrates + Nitrites after three years of data are collected.
s. Requirements to measure and maintain at least two (2) feet of freeboard have been added to Part II.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on the permittee's application using the 1927 North American Datum (NAD27) as the coordinate basis:

Latitude: 34° 29' 14" Longitude: 90° 35' 43"

The receiving waters are named:

Mississippi River in Segment 6B of the Mississippi River Basin. The receiving stream in Reach # 002 in USGS Hydrologic Unit Code (H.U.C.) 08020100 is a Water of the State classified for primary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

7. 303(d) LIST AND ENDANGERED SPECIES CONSIDERATIONS.

a. **303(d) List:**

The receiving stream is not on the 2008 303(d) List. Therefore no permit action is needed.

b. **Endangered Species**:

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

In 2003, the USF&WS notified the ADEQ that the federally-endangered pallid sturgeon (*Scaphirhynchus albus*) had been found in the Mississippi River in the vicinity of this facility's outfall. The permit limits are intended to protect all designated uses of the receiving stream which includes, but is not limited to, propagation of desirable species of fish and other aquatic life. No additional permit requirements are believed to be necessary at this time.

8. OUTFALL AND TREATMENT PROCESS DESCRIPTION.

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

a. Design Flow: 1.7 MGD

b. Type of Treatment: a four-cell lagoon (i.e., oxidation ponds)

c. Discharge Description: treated municipal wastewater

d. Facility Status: This facility is classified as a major municipal because the design flow rate (i.e., 1.7 MGD) is greater than 1.0 MGD.

9. ACTIVITY.

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

10. INDUSTRIAL WASTEWATER CONTRIBUTIONS.

This facility receives industrial process wastewater, and some of these sources are subject to pretreatment requirements. Based on the applicant's effluent compliance history and the type of industrial contributions, standard Pretreatment Program implementation conditions are deemed appropriate at this time with the following clarifications.

The permittee receives wastewater from the following industrial facilities subject to the referenced pretreatment standards: Syrgis Performance Initiators, Inc. (Syrgis) (40 CFR Part 414, et al.), and Amerimax Coated Products, Inc. (40 CFR Part 465). According to the Water Division's records, Syrgis treats hazardous waste it generates. By the time it is discharged to the permittee's collection system, it may no longer be hazardous waste. Once it enters the collection system, it is no longer hazardous waste pursuant to 40 CFR Part 261.4(a)(1)(ii).

Based on our records, it appears that the permittee has not met the requirements of APCEC Regulation No. 23 § 270.60(c)(3). Therefore, hazardous waste may only be accepted by the permittee through the collection system's piping.[5] Please note that hazardous waste may not be accepted through the piping if it may cause damage, cause interference, or pass through the system (see Part II.7).

11. SEWAGE SLUDGE PRACTICES.

Sludge is retained in the treatment lagoon cells. Oxidation ponds and treatment lagoons tend to fill (become shallow) due to the settling of the bacterial and algal cells formed during the decomposition of the sewage. Therefore, the sludge containing the oxidized products need to be periodically removed from the ponds in order to maintain the volume required to adequately treat the wastewater. If it is removed, the sludge must be disposed of at a properly licensed facility.

According to Department records, the lagoon was built in approximately 1989,[6] and no records of sludge removal have been found. The permittee is required by Part III.B.1 of the permit to properly operate and maintain the treatment facility. Therefore, the permittee will be required to measure the average sludge depth (current), determine the average design depth (from the original design basis), and measure the average operating depth (what's left) in each lagoon cell. This requirement has been added to Part IB.

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[5] If the permittee receives hazardous waste via a dedicated pipeline, it may be subject to the requirements of APCEC Regulation No. 23 §270.60(c).

[6] During a site visit on April 22, 2009, the permittee's staff were unable to confirm the construction date and the date of initial operation. However, they stated that the new lagoon was probably put into operation in the early 1990s.

12. PERMIT CONDITIONS.

The Arkansas Department of Environmental Quality has made a determination to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR Part 403 and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8–4–101 et seq.).

Final Effluent Limitations

Outfall 001 – treated municipal wastewater

a. **Conventional and/or Toxic Pollutants**

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter
Biochemical Oxygen Demand (BOD5)	354	30.0	45.0	three/week	3-hr composite
Total Suspended Solids (TSS)	1,276	90.0	135.0	three/week	3-hr composite
Dissolved Oxygen (DO)	N/A	2.0 (Instantaneous Minimum)		three/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100 ml)			
(April – September)	N/A	200	400	three/week	grab
(October – March)	N/A	1,000	2,000	three/week	grab
Total Phosphorus	Report	Report	Report	once/month	grab
Nitrate + Nitrite (as Nitrogen)	Report	Report	Report	once/month	grab
pH	N/A	Minimum 6.0 s.u.	Maximum 10.5 s.u.	three/week	grab
Acute WET Testing	N/A	See Issue No. 14 Below.		once/quarter	24-hr composite

b. **Solids, Foam, and Free Oil:** There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen due to the presence of oil. (Sheen means an iridescent appearance on the surface of the water.)

13. BASIS FOR PERMIT CONDITIONS.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7 (48 FR 1413, April 1, 1983).

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

Following regulations promulgated at 40 CFR Part 122.44(1)(2)(ii), the permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44(d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous Permit		Permit Limit	
	Monthly Avg. mg/l	7-Day Avg. mg/l	Monthly Avg. mg/l	7-Day Avg. mg/l	Monthly Avg. mg/l	7-Day Avg. mg/l	Monthly Avg. mg/l	7-Day Avg. mg/l
BOD5	N/A	N/A	30	45	30	45	30.0	45.0
TSS	N/A	N/A	30†	45†	90†	135†	90.0†	135.0†
DO	2.0 (Inst. Min.)		N/A		N/A		2.0 (Inst. Min.)	
FCB (col/100 ml)								
(April – Sept.)	200	400	N/A	N/A	200	400	200	400
(Oct. – March)	1,000	2,000	N/A	N/A	1,000	2,000	1,000	2,000
TP	N/A	N/A	Report	Report	N/A	N/A	Report	Report
$NO_2 + NO_3 - N$	N/A	N/A	Report	Report	N/A	N/A	Report	Report
pH	6.0 – 9.0 s.u.		6.0 – 9.0 s.u.‡		6 – 10.5 s.u.‡		6.0 – 10.5 s.u.‡	

†The previous TSS limits of 90 mg/l (Monthly Average) and 135 mg/l (7-Day Average) (with an additional significant digit) are being continued pursuant to 40 CFR Parts 133.101(f), 133.101(g), 133.103(c), and 133.105(b) and guidance from EPA Region 6 (i.e., a letter from Jack Ferguson, P.E., Chief, NPDES Permits Branch, EPA Region 6, to Marysia Jastrzebski, NPDES Program Manager, ADEQ, dated May 19, 1998). These limits are being continued with the understanding that proper operation and maintenance is occurring pursuant to 40 CFR Part 133.101(f) et al.

‡40 CFR Part 133.102(c) allows the range to be expanded. See Issue No. 13.b.iv below.

Parameter	Water Quality or Technology	Justification
BOD5	Technology	Previous Permit and 40 CFR Part 133
TSS	Technology	Previous Permit and 40 CFR Part 133
DO	Water Quality	Reg. 2.505
FCB	Water Quality	Reg. 2.507
TP	Technology	the CPP
$NO_2 + NO_3 - N$	Technology	the CPP
pH	Technology	40 CFR Part 133.102(c)

a. **Anti-backsliding**

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

b. **Limits Calculations**

i. Mass Limits:

The calculation of the loadings (lbs per day) uses a design flow of 1.7 MGD and the following equation:

lbs/day = Concentration (mg/l) X Flow (MGD) X 8.34

ii. 7-Day Average Limits:

7-Day Average Limits = Monthly Average Limits X 1.5

iii. DO:

To comply with Reg. 2.505, a minimum DO concentration is being added as a minimum limit.

iv. pH:

The limits from the previous permit are being continued based on influent sampling data that shows that the influent is not influenced by industrial dischargers. No inorganic chemicals are added to the treatment system by the permittee. Therefore, an expanded pH range is allowable pursuant to 40 CFR Part 133.102(c).

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

The 208 Plan, developed by the ADEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but it can be revised more often if necessary. The 208 Plan has been revised to add a minimum DO limit year-round.

Year – Round: BOD5/TSS/DO = 30.0/90.0/2.0 mg/l
Design Flow (Q): 1.7 MGD
Background Flow of the receiving stream (7Q10): 120,000 cfs[7]

d. **Toxics Pollutants**

i. Post Third Round Policy and Strategy

Section 101 of the Clean Water Act (CWA) states that "... it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." To insure that the CWA's prohibitions on toxic discharges are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations by Toxic Pollutants" (49 FR 9016-9019, 3/9/84). In support of the national policy, Region 6 adopted the "Policy for post Third Round Permitting" and the "Post Third Round Permit Implementation Strategy" on October 1, 1992. The Regional policy and strategy are designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State water quality standard resulting in non-conformance with the provisions of 40 CFR Part 122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

ii. Implementation

The State of Arkansas is currently implementing EPA's Post Third-Round Policy in conformance with the EPA Regional strategy. The 5-year discharge permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, or where there are no applicable technology-based limits, additional water quality-based effluent limitations and/or conditions are included in the discharge permits. State narrative and numerical water quality standards from APCEC Regulation No. 2 are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

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[7] "Identification and Classification of Perennial Streams of Arkansas," Arkansas Geological Commission, R. A. Hunrichs, 1983 at USGS Station No. 07047970 near Helena.

iii. Priority Pollutant Scan (PPS)

In accordance with the regional policy, ADEQ has reviewed and evaluated the effluent in accordance with the potential toxicity of each analyzed pollutant:

(a) The results were evaluated and compared to EPA's Minimum Quantification Levels (MQLs) to determine the potential presence of a respective toxic pollutant. Those pollutants which are greater than or equal to the MQLs are determined to be reasonably present in the effluent and an evaluation of their potential toxicity is necessary.

(b) Those pollutants with one datum shown as "non-detect" (ND), providing the level of detection is equal to or lower than MQL are determined to be not potentially present in the effluent and eliminated from further evaluation.

(c) Those pollutants with a detectable value even if below the MQL are determined to be reasonably present in the effluent and an evaluation of their potential toxicity is necessary.

(d) For those pollutants with multiple data values and all values are determined to be non-detect, no further evaluation is necessary. However, where the data set includes some detectable concentrations and some values as ND, one-half of the detection level is used for those values below the level of detection to calculate the geometric mean of the data set.

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 (APCEC Regulation No. 2) and with the aquatic toxicity, human health, and drinking water criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)." The following expression was used to calculate the pollutant in-stream waste concentration (IWC):

$$IWC = ((C_e \times Q_e) + (C_b \times Q_b))/(Q_e + Q_b)$$

where:

IWC = in-stream concentration of pollutant after mixing with receiving stream (µg/l)
C_e = pollutant concentration in effluent (µg/l)
Q_e = effluent flow of facility (cfs)
C_b = background concentration of pollutant in receiving stream (µg/l)
Q_b = background flow of receiving stream (cfs)

The following values were used in the IWC calculations:

C_e = varies with pollutant. A single value from the PPS submitted by the permittee as part of the discharge permit application or the geometric mean of a group of data points (less than 20 data points) is multiplied by a factor of 2.13. This is based on EPA Region 6's procedure [See the Continuing Planning Process (CPP).] to extrapolate limited data sets to better evaluate the potential toxicity for higher effluent concentrations to exceed water quality standards. This procedure employs a statistical approach which yields an estimate of a selected upper percentile value (the 95th percentile) of an effluent data set which would be expected to exceed 95% of effluent concentrations in a discharge. If 20 or more data points over the last two years are available, do not multiply by 2.13, but instead use the maximum value reported.

Q_e = 1.7 MGD = 2.6 cfs

C_b = 0 µg/l

Q_b = (See below):

I. Aquatic Toxicity

Chronic Toxicity: Flow = 30,000 cfs, for comparison with chronic aquatic toxicity. This flow is 25 percent of the 7-day, 10-year low-flow (7Q10) of the receiving stream.

Acute Toxicity: Flow = 7,200 cfs, for comparison with acute aquatic toxicity. This flow is 6 percent of the 7Q10 of the receiving stream.

II. Bioaccumulation

Flow = 360,000 cfs, for comparison with bioaccumulation criteria. This flow is the long term average (LTA) of the receiving stream which is calculated by multiplying the 7Q10 times three.

III. Drinking Water

Flow = 120,000 cfs, for comparison with drinking water criteria. This flow is the 7Q10 of the receiving stream.

The following values for the Mississippi River were used to determine pollutant limits:

Hardness = 81 mg/l (from the CPP),

TSS = 8.0 mg/l (from the CPP), and

pH = 7.6 s.u. (average from monitoring station FRA01).[8]

iv. Water Quality Standards for Metals and Cyanide

Standards for chromium (VI), mercury, selenium, and cyanide are expressed as a function of the pollutant's water-effect ratio (WER), while standards for cadmium, chromium (III), copper, lead, nickel, silver, and zinc are expressed as a function of the pollutant's water-effect ratio, and as a function of hardness. The WER is assigned a value of 1.0 unless scientifically defensible study clearly demonstrates that a value less than 1.0 is necessary or a value greater than 1.0 is sufficient to fully protect the designated uses of the receiving stream from the toxic effects of the pollutant.

The WER approach compares bioavailability and toxicity of a specific pollutant in receiving water and in laboratory test water. It involves running toxicity tests for at least two species, measuring the Lethal Concentration 50% (LC50) for the pollutant using the local receiving water collected from the site where the criterion is being implemented, and laboratory toxicity testing water made comparable to the site water in terms of chemical hardness. The ratio between site water and lab water LC50 is used to adjust the national acute and chronic criteria to site specific values.

v. Conversion of Dissolved Metals Criteria for Aquatic Life to Total Recoverable Metal

Metals criteria established in Section 2.508 of APCEC Regulation No. 2 for aquatic life protection are based on dissolved metals concentrations and hardness values. However, 40 CFR Part 122.45(c) requires that effluent limitations for metals in discharge permits be expressed as total recoverable. Therefore a dissolved to total recoverable metal conversion must be calculated. This involves determining a linear partition coefficient for the metal of concern and using this coefficient to determine the fraction of metal dissolved so that the dissolved metal ambient criteria may be translated to a total effluent limit. The formula for converting dissolved metals to total recoverable metals for streams and lakes are provided in the CPP.

[8] February 1968 through March 1974 is the most current monitoring period available at this monitoring station in the Mississippi River.

vi. Comparison of the submitted information with the water quality standards and criteria

The following pollutants were determined by the permittee to be present in the treated effluent. The results are based on the PPS results reported in the application.

Pollutant	Concentration Reported (µg/l)	MQL (µg/l)
Total Recoverable Phenols	6.5	5

Based on the analytical sampling results submitted by the permittee, the ADEQ has determined that no Water Quality Standards or Gold Book criteria are exceeded. Therefore no permit action is necessary to maintain these standards or criteria.

14. WHOLE EFFLUENT TOXICITY (WET).

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 APCEC Regulation No. 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."

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 FR 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 October 1, 1992.

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

TOXICITY TESTS	FREQUENCY
Acute WET	Once/quarter

Requirements for measurement frequency are based on the CPP. Since the 7Q10 is greater than 100 cfs (ft^3/sec) and the dilution ratio is greater than 100:1, acute WET testing requirements will be included in the permit.

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

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

Qd = Design Flow = 1.7 MGD = 2.6 cfs
7Q10 = 120,000 cfs
Qb = Background flow = 0.1 X 0.25 X 7Q10 = 3,000 cfs
CD = ((2.6) / (2.6+3,000)) X 100 = 0.100%

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 **0.042%, 0.056%, 0.075%, 0.100%, and 0.133%**. (See the CPP.) The low-flow effluent concentration (Critical Dilution) is defined as **0.100%** 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 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/600/4–90/027 and shall be submitted as an attachment to the DMR.

This permit may be reopened to require further WET testing studies, a 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 Part 122.62, as adopted by reference in APCEC 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).

WHOLE EFFLUENT TOXICITY TESTING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **AR0043389**
Outfall Number: **001**
Facility Name: **Helena Municipal Water and Sewer System**
Previous Critical Dilution: **0.100** Current Critical Dilution: **0.100**
Date of Review: **4/16/2009** Name of Reviewer: **Barnett**

Number of tests performed during previous 5 years by species:
***Pimephales promelas* (Fathead minnow): 14**
***Daphnia pulex* (water flea): 14**

Failed test dates during previous 5 years by species:

***Pimephales promelas* (Fathead minnow):**	Lethal
	None
***Daphnia pulex* (water flea):**	Lethal
	None

Previous TRE activities: **None**

Frequency recommendation by species:
***Pimephales promelas* (Fathead minnow): four/year**
***Daphnia pulex* (water flea): four/year**

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

Rationale: According to the EPA Region 6 Post-Third Round WET Testing Strategy: "All major dischargers, and those minor dischargers specifically identified by EPA or the State permitting authority (based on available information on a case-by case basis) as posing a significant unaddressed toxic risk, will be required to perform [WET] testing at a frequency of once per quarter for the vertebrate and invertebrate tests species for the first year of a new or reissued permit."

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 for BOD5, TSS, FCB, and pH are based on the previous permit. DO sampling has been set at the same frequency as BOD5's as a grab sample.

The sampling type for TP and nitrate + nitrite as nitrogen ($NO_2 + NO_3 - N$) have been set according to the CPP. The sampling frequency has been set at the minimum to gather monthly data.

WET testing was quarterly in the previous permit until the reduction frequency was reduced to semi-annually on 1/23/08. As discussed in Issue No. 14 of this Fact Sheet, EPA requires quarterly monitoring for at least the first year of a reissued permit.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	once/day	totalizing meter	once/day	totalizing meter
BOD5	three/week	3-hr composite	three/week	3-hr composite
TSS	three/week	3-hr composite	three/week	3-hr composite
DO	N/A	N/A	three/week	grab
FCB	three/week	grab	three/week	grab
TP	N/A	N/A	once/month	grab
$NO_2 + NO_3 - N$	N/A	N/A	once/month	grab
pH	three/week	grab	three/week	grab
Acute WET Testing	once/quarter	24-hr composite	once/quarter	24-hr composite

16. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS.

The permittee has an active industrial stormwater permit (i.e., NPDES Permit No. ARR00C436) for a "no exposure" site. Thus, stormwater pollution prevention plan (SWPPP) requirements are not required in this permit. However, a condition to maintain adequate freeboard in each cell of the lagoon has been added to Part II pursuant to Paragraph 93.415 of the "Recommended Standards for Wastewater Facilities" (2004 Edition).

17. PERMIT COMPLIANCE.

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

a. Compliance with all final effluent limitations is required on the permit's effective date.

b. Discharge of raw wastewater into Cell #3 will cease as soon as possible but no later than one (1) year after the permit's effective date. Progress reports on this issue must be submitted to the Enforcement Branch of ADEQ's Water Division according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	Four (4) months from the permit's effective date
Progress Report	Eight (8) months from the permit's effective date
Cease Bypass	One (1) year from the permit's effective date

c. The permittee shall measure the average sludge depth (current), determine the average design depth (from the original design basis), and measure the average operating depth (what's left) in each lagoon cell within 90 days of the permit's effective date. The permittee shall submit a report to the Department within 120 days from the permit's effective date detailing the results of this study. The report shall also include plans for solids and sludge removal or justification for not removing the solids and sludge. The Department reserves the right to require removal of the sludge and solids, if necessary.

d. Compliance with Part II.12 (Freeboard Measurement) is required six (6) months from the permit's effective date.

e. Within six (6) months of the permit's effective date, a report must be submitted to the Enforcement Branch of ADEQ's Water Division that certifies that there will be no bypasses of Cell # 1 except as allowed by Part III.B.4 (i.e., that wet-weather bypasses will not occur). This report must be signed pursuant to Part III.D.11.b, certified pursuant to Part III.D.11.c, and signed and stamped by an Arkansas-registered professional engineer.

18. MONITORING AND REPORTING.

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

19. SOURCES.

The following sources were used to prepare the permit:

a. Application No. AR0043389 received 9/17/2008.
b. Arkansas Water Quality Management Plan (WQMP).
c. APCEC Regulation No. 2.
d. APCEC Regulation No. 3.
e. APCEC Regulation No. 6.
f. 40 CFR Parts 122, 125, 133, and 403.
g. Discharge permit file AR0043389.
h. Discharge Monitoring Reports (DMRs).
i. "Identification and Classification of Perennial Streams of Arkansas," Arkansas Geological Commission, R. A. Hunrichs, 1983.
j. Letter from Jack Ferguson, P.E., Chief, NPDES Permits Branch, EPA Region 6, to Marysia Jastrzebski, NPDES Program Manager, ADEQ, dated 05/19/1998.

k. Letter from Ms. Margaret Harney, U.S. Fish and Wildlife Service, to Parviz Mokhtari, Engineer, Water Division, ADEQ, received 12/01/2003.
l. "Recommended Standards for Wastewater Facilities" (10 States Standards), Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Health Education Services Division, 2004 Edition.
m. "2008 Integrated Water Quality Monitoring and Assessment Report Prepared pursuant to Sections 305(b) and 303(d) of the Federal Water Pollution Control Act," ADEQ.
n. Continuing Planning Process (CPP).
o. Inspection Reports dated 05/23/2007 and 04/16/2008.
p. E-mail from Anne Roberts, Enforcement Administrator, Water Division, ADEQ, to Chris Roberts, Engineer, Water Division, ADEQ, dated 04/15/2009.
q. Site Visit on 04/22/2009.
r. E-mails from Amber Bussell, Laboratory Manager, McClelland Consulting Engineers, Inc., to Chris Roberts, Engineer, Water Division, ADEQ, dated 08/03/2009.

20. POINT OF CONTACT.

For additional information, contact:

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ADEQ

A R K A N S A S
Department of Environmental Quality

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

The response to comments received on the subject draft permit, in accordance with regulations promulgated at 40 CFR Part 124.17, is as follows:

Permit No.: AR0043389

Applicant: Helena Municipal Water and Sewer System

Prepared by: Chris Roberts, P.E.

Public Notice Date: The draft permit was publicly noticed on September 18, 2009.

Date Prepared: October 29, 2009

ADEQ Comment:

In the draft permit, the numerical DO limit was a monthly average minimum, and DO sampling was to be collected as a 3-hour composite sample to be consistent with the BOD5 sampling. After further review, the DO limit should be an instantaneous minimum limit. Therefore, grab sampling is more appropriate. The permit and Fact Sheet have been updated, accordingly.