

**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:

City of Huntsville
112 West War Eagle
P.O. Box 430
Huntsville, AR 72740

The facility address is:

City of Huntsville
30187 Madison Hwy 23
Huntsville, AR 72740

is authorized to discharge from a facility located as follows: on US Highway 23 North of Huntsville and south of Highway 412 in Madison County, Arkansas.

Latitude: 36° 06' 42.7"; Longitude: 93° 43' 58.3"

to receiving waters named:

Town Branch, thence to Holman Creek, thence to War Eagle Creek, thence to the White River in Segment 4K of the White River Basin.

The outfall is located at the following coordinates:

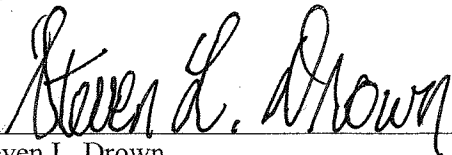
Outfall 001: Latitude: 36° 06' 45"; Longitude: 93° 43' 58"

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.

Effective Date: June 1, 2011

Expiration Date: May 31, 2014



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

26 APRIL 11
Issue Date

**PART I
 PERMIT REQUIREMENTS**

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

During the period beginning on the effective date and lasting one year from the effective date, 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 bar screen, grit removal, anaerobic selector, anoxic basin, oxidation ditch, final clarification, UV disinfection unit, cascade aeration with a design flow of 2.0 MGD.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Maximum)	Once/day	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	167	10	15	Once/week	composite
Total Suspended Solids (TSS)	250	15	22.5	Once/week	composite
Ammonia Nitrogen (NH3-N)					
(April-Oct)	26.7	1.6	3.9	Once/week	composite
(Nov-March)	50.0	3.0	4.5	Once/week	composite
Dissolved Oxygen	N/A	6.6 (Inst. Min.)		Once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	1000	2000	Once/week	grab
Total Phosphorus	83.4	5	7.5	Once/week	grab
Nitrite+Nitrate Nitrogen	166.8	10	15	Once/week	composite
Total Dissolved Solids	Report	Report	Report	Once/week	composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Once/week	grab
Chronic WET Testing ¹	N/A	Report		Once/quarter	composite

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
<u>Pimephales promelas (Chronic)¹</u> Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) TQP6C Growth (7-day NOEC) TPP6C		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	composite composite composite composite composite
<u>Ceriodaphnia dubia (Chronic)¹</u> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) TQP3B Reproduction (7-day NOEC) TPP3B		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	composite composite composite composite composite

1 See Condition No. 9 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 at the following locations:

Flow: after the UV treatment and prior to the cascade aeration.
 All other parameters: after the cascade aeration.

All unauthorized Sanitary Sewer Overflows (SSO) must be reported to ADEQ. See Condition No. 5 of Part II.

**PART I
 PERMIT REQUIREMENTS**

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

During the period beginning one year from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below from a treatment system consisting of bar screen, grit removal, anaerobic selector, anoxic basin, oxidation ditch, final clarification, UV disinfection unit, cascade aeration with a design flow of 2.0 MGD.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Maximum)	Once/day	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	167	10	15	Once/week	composite
Total Suspended Solids (TSS)	250	15	22.5	Once/week	composite
Ammonia Nitrogen (NH3-N)					
(April-Oct)	26.7	1.6	3.9	Once/week	composite
(Nov-March)	50.0	3.0	4.5	Once/week	composite
Dissolved Oxygen	N/A	6.6 (Inst. Min.)		Once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	1000	2000	Once/week	grab
Total Phosphorus ¹	33.3	2	3	Once/week	grab
Nitrite+Nitrate Nitrogen	166.8	10	15	Once/week	composite
Total Dissolved Solids	Report	Report	Report	Once/week	composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Once/week	gab
Chronic WET Testing ²	N/A	Report		Once/quarter	composite

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
<u>Pimephales promelas (Chronic)²</u> Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) TQP6C Growth (7-day NOEC) TPP6C		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter	composite composite composite composite composite
<u>Ceriodaphnia dubia (Chronic)²</u> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) TQP3B Reproduction (7-day NOEC) TPP3B		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter	composite composite composite composite composite

- 1 Compliance with the final effluent limitations for Total Phosphorus is required one year from the effective date of this permit.
- 2 See Condition No. 9 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 at the following locations:

Flow: after the UV treatment and prior to the cascade aeration.
 All other parameters: after the cascade aeration.

All unauthorized Sanitary Sewer Overflows (SSO) must be reported to ADEQ. See Condition No. 5 of Part II

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 the all the Interim Effluent Limits and the Final Effluent Limits except Total Phosphorus is required on the effective date of the permit.

Compliance with the Final Effluent Limits for Total Phosphorus is required one year from the effective date of the permit.

2. Total Dissolved Solids

This permit is issued for three years with a requirement for monitoring and reporting for Total Dissolved Solids. Before this permit is reissued, i.e., prior to or upon the expiration date, the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No. 2, CPP, the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports and progress reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and limits will be effective immediately upon the effective date of the renewal permit.

Within 60 days from the effective date of this permit, the Permittee shall submit to ADEQ a workplan addressing all options for achieving compliance with water quality standards for Total Dissolved Solids. These options must include, but are not limited to: source reduction, outfall relocation, treatment alternatives, and/or revision of the Arkansas Water Quality Standards. The workplan must include the chosen option along with alternative options in the event the chosen option is not successful. A milestone schedule must be included which outlines when the work will begin on the project, when the project is anticipated to be completed (not to exceed 3 years from the effective date), and interim dates for completion of significant steps in the project.

Upon approval by ADEQ, the submitted milestone schedule shall be incorporated into this permit by reference and will be enforceable. The workplan shall be signed in accordance with Part III.D.11 and submitted to the attention of:

Arkansas Department of Environmental Quality
Water Division
Discharge Permits Section
5301 Northshore Drive
North Little Rock, AR 72118-5317

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be licensed as Class IV by the State of Arkansas in accordance with 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 Carbonaceous Biochemical Oxygen Demand (CBOD5) and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102, as adopted by reference in APCEC Regulation No. 6.
3. Additional Conditions for Land Application of Municipal Wastewater Biosolids Additional Conditions for Land Application of Municipal Wastewater Biosolids

1. GENERAL REQUIREMENTS:

- a. Only biosolids which are not classified as a hazardous waste under state or federal regulations may be land applied.
- b. The waste disposal system shall be operated and maintained in accordance with the Waste Management Plan (WMP) approved by the Department.
- c. Plant Available Nitrogen (PAN) will not be applied at a rate exceeding the annual nitrogen uptake of the crop. At no time will the nitrogen application rate (PAN/acre-year) be allowed to exceed the site specific rate approved by the Department.
- d. Biosolids with Polychlorinated Biphenyls (PCB's) concentrations equal or greater than 50 mg/kg (dry basis) will not be land applied at any time.
- e. CEILING CONCENTRATIONS (milligrams per kilogram, dry weight basis): If the biosolids to be land applied exceed any of the pollutant concentrations listed in **Table 1** below, the biosolids shall not be land applied.

TABLE 1	
<u>Element</u>	<u>Concentration (mg/kg)</u>
Arsenic	75
Cadmium	85
Chromium	*
Copper	4,300
Lead	840
Mercury	57

TABLE 1	
Element	Concentration (mg/kg)
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

*This value is being reevaluated by US EPA.

- f. **POLLUTANTS LIMITS:** When bulk biosolids are applied to agricultural land, forest, a public contact site, or reclamation site, the permittee shall not exceed the Cumulative Pollutant Loading Rate values listed in **Table 2**, or the Pollutant Concentration values listed in **Table 3**.

TABLE 2		
Element	Cumulative Pollutant Loading Rate	
	Kg/ha	lbs/ac
Arsenic	41	37
Cadmium	39	35
Chromium	*	*
Copper	1,500	1,350
Lead	300	270
Mercury	17	15
Molybdenum	*	*
Nickel	420	378
Selenium	100	90
Zinc	2,800	2,520

*This value is being reevaluated by US EPA.

TABLE 3	
Element	Monthly Average Concentration (mg/kg)
Arsenic	41
Cadmium	39
Chromium	*
Copper	1,500
Lead	300
Mercury	17
Molybdenum	*
Nickel	420
Selenium	36
Zinc	2,800

*This value is being reevaluated by US EPA.

- g. The biosolids generator must issue a signed certification stating that the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits have been met. The State requirements on Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits are the same as those listed in 40 CFR Part 503. All the above information must be made available to the land-applicator before the biosolids materials are delivered. Concurrently, a signed copy of each certification must be also submitted to the ADEQ Water Division.
- h. Biosolids can only be stored in accordance with the permit and the approved waste management plan, if provisions are made in the plan for that purpose. The utilization of improvised field storage sites or any other site not approved by the Department is strictly prohibited.
- i. Transportation of the biosolids must be such that will prevent the attraction, harborage or breeding of insects or rodents. It must not produce conditions harmful to public health, the environment, odors, unsightliness, nuisances, or safety hazards.
- j. The containers used for the transportation of the biosolids must be of the closed type. Transportation equipment must be leak-proof and kept in a sanitary condition at all times. Biosolids must be enclosed or covered as to prevent littering, vector attraction, or any other nuisances.
- k. The permittee will be responsible for assuring that the land owner, of any land application site not owned by the permittee, and the waste applicator, if different from the permittee, abide by the conditions of this permit.

- l. Waste shall not be discharged from this operation to the waters of the State or onto the land in any manner that may result in runoff to the waters of the State.
- m. Biosolids will not be applied to slopes with a gradient greater than 15%; or to soils that are saturated, frozen or covered with snow, during rain, or when precipitation is imminent.
- n. The permittee will not cause any underground drinking water source to exceed the limitations in 40 CFR Part 257, Appendix I.

Chemicals and their Maximum Contaminant Levels (MCLs) from 40 CFR Part 257, Appendix I			
Chemical	mg/l	Chemical	mg/l
Arsenic	0.05	Lindane	0.004
Barium	1.0	Lead	0.05
Benzene	0.005	Mercury	0.002
Cadmium	0.01	Methoxychlor	0.1
Carbon tetrachloride	0.005	Nitrate	10.0
Chromium (hexavalent)	0.05	Selenium	0.01
2,4-Dichlorophenoxy acetic acid	0.1	Silver	0.05
1,4-Dichlorobenzene	0.075	Toxaphene	0.005
1,2-Dichloroethane	0.005	1,1,1-Trichloroethane	0.2
1,1-Dichloroethylene	0.007	Trichloroethylene	0.005
Endrin	0.0002	2,4,5-Trichlorophenoxy acetic acid	0.01
Fluoride	4.0	Vinyl chloride	0.002

- o. The permittee will not cause or contribute to the taking of life or the destruction or adverse modification of the critical habitat of any known endangered or threatened species of plant, fish or wildlife.
- p. The permittee will take all necessary measures to reduce obnoxious and offensive odors. Equipment will be maintained and operated to prevent spillage and leakage.
- q. Disposal of wastewater biosolids in a flood plain will not restrict the flow of the base flood, reduce the temporary storage capacity of the flood plain, or result in a washout of solid waste, so as to pose a hazard to human life, wildlife or land and water uses.
- r. Biosolids will not be spread within 50 feet of rock outcrops and property lines; 100 feet of lakes, ponds, springs, streams, wetlands and sinkholes; 200 feet of drinking water wells; 300 feet of occupied buildings and streams classified as an "extraordinary resource water body."

- s. All new land application sites must have a waste management plan approved by the Department prior to land application of wastewater biosolids. This change normally requires a permit modification.

2. MONITORING AND REPORTING REQUIREMENTS:

The permittee will be responsible for the biosolids analyses, soil analyses, and a reporting schedule that must include the following:

a. Biosolids Analysis

- i. Biosolids samples collected must be representative of the treated biosolids to be land applied. The samples are to be stored in appropriate containers and kept refrigerated or frozen to prevent any change in composition and analyzed by a laboratory certified by the Department.
- ii. Quarterly representative samples of the land-applied biosolids will be analyzed and results expressed in dry basis in mg/kg, except as otherwise indicated:

Volatile Solids (%)	Total Kjeldahl Nitrogen
Total Solids(%)	Total Phosphorus
Nitrate +Nitrate Nitrogen	Total Potassium
Ammonia Nitrogen	Arsenic
Cadmium	Copper
Lead	Mercury
Nickel	Selenium
Zinc	pH (SU)

b. Soils Analysis

Each land application site will be soil tested in the Spring prior to application for the following parameters by a laboratory certified by the Department:

Nitrate-Nitrogen	Potassium
Phosphorus	Magnesium
Arsenic	Cadmium
Copper	Lead
Mercury	Nickel
Selenium	Zinc
pH	
Cation Exchange Capacity (me/100g)	
Salt Content (micro-mhos/cm)	

c. Reporting

- i. Annual reports will be sent to the Department and to the owner of the land receiving biosolids prior to May 1, which must include the following:

The biosolids and soil analyses conducted under section a. above (including a statement that the analyses were performed in accordance with EPA Document SW-846, "Test Methods for Evaluation of Solid Waste," or other procedures approved by the Director), application dates and locations, volumes of biosolids applied (in dry tons/acre-year and gallons/acre-year of biosolids), methods of disposal, identity of hauler, and type of crop grown, amounts of nitrogen applied, total elements added that year (lbs/acre), total elements applied to date, and copies of soil analyses for each site.

- ii. The permittee will also maintain copies of the above records for Department personnel review at the biosolids generating facility for a period of three (3) years.

3. Land Application Sites

Sludge is treated by lime stabilization and land applied at the following locations:

Land Owner	Field	Acres	Section	Township	Range
MRiver	1	76	13	17 North	26 West
	2	60	13	17 North	26 West
	3	20	13	17 North	26 West
	4	20	13	17 North	26 West
	5	6	13	17 North	26 West
	6	14	14	17 North	26 West
	7	29	12	17 North	26 West
	8	6	14	17 North	26 West
	9	1	14	17 North	26 West
	10	13	24	17 North	26 West
	11	39	14	17 North	26 West
	12	10	14	17 North	26 West
	13	6	13	17 North	26 West
	14	4	13	17 North	26 West
	15	73	13	17 North	26 West
	16	73	24	17 North	26 West
	17	27	24	17 North	26 West
	18	7	14	17 North	26 West
	19	24	11	17 North	26 West
	20	14	11	17 North	26 West
	21	24	14	17 North	26 West

Land Owner	Field	Acres	Section	Township	Range
MRiver	22	18	14	17 North	26 West
	23	16	13	17 North	26 West
	24	3	14	17 North	26 West
	25	4	14	17 North	26 West
	26	22	14	17 North	26 West
	27	1	13	17 North	26 West
Walden	11	30	3	17 North	26 West
	12	20	3	17 North	26 West
	13	15	3	17 North	26 West
	21	10	31	18 North	25 West
	22	25	31	18 North	25 West
	23	5	31	18 North	25 West
	24	20	31	18 North	25 West
	25	30	31	18 North	25 West
Cox	1	8	10	17 North	26 West
	2	5	10	17 North	26 West
	3	45	15	17 North	26 West
	4	30	10	17 North	26 West
	5	24	10	17 North	26 West
McCloud	1	10	22	17 North	26 West
Whorton	1	23	22	17 North	26 West
Hatfield	1	40	6	17 North	25 West
	2	15	6	17 North	25 West
WWTP	1	8	27	17 North	26 West
Garrett	1	9	34	16 North	27 West
	2	10	34	16 North	27 West
	3	5	34	16 North	27 West
	4	1	34	16 North	27 West
	5	5	34	16 North	27 West
Johnson	E1	15	21	17 North	26 West
	W1	30	22	17 North	26 West
	W2	40	27	17 North	26 West
	W3	40	28	17 North	26 West

4. Approval to land apply biosolids pursuant to Part II Condition 3 is limited to a maximum of two (2) years after this permit's effective date. A separate land application permit (or permits) must be obtained within this time period or application of biosolids must cease. Reporting requirements of Part II Condition 3 continue for the term of this permit unless they are superseded by similar conditions in one or more separate land application permits.

5. Sanitary Sewer Overflow (SSO):

1. An overflow is any spill, release or diversion of sewage from a sanitary sewer collection system, including:
 - a. an overflow that results in a discharge to waters of the state; and
 - b. an overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the state.

2. Immediate Reporting

All overflows shall be reported to Enforcement Branch of the Water Division by telephone (501-682-0638), facsimile (501-682-0910), or by e-mail waterenfssso@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance.

At a minimum the report shall identify:

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

3. Discharge Monitoring Reports (DMRs)

The permittee shall report every month all overflows with the Discharge Monitoring Report (DMR) submittal. These reports shall be summarized and reported in tabular format with the minimum following information. The permittee may use ADEQ Form attached to the permit or a copy of the form may obtain from the following web site: http://www.adeq.state.ar.us/water/branch_enforcement/forms/ssso_report.asp

- a. The location(s) of overflow;
- b. The receiving water (If there is one);
- c. The duration of overflow;
- d. Cause of overflow;
- e. The estimated volume of overflow (MG);
- f. A description of the sewer system component from which the release occurred (e.g., manhole, constructed overflow pipe, crack in pipe);
- g. The estimated date and time when the overflow began and stopped or will be stopped;
- h. The cause or suspected cause of the overflow;
- i. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;

- j. If reasonably made, an estimate of the number of persons who came into contact with wastewater from the overflow; and
 - k. Steps taken or planned to mitigate the impact(s) of the overflow and a schedule of major milestones for those steps.
6. 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.
7. 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.

8. Contributing Industries and Pretreatment Requirements

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

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

- (2) pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, 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* or pass through**;
 - (4) any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Pass Through** or Interference* with the POTW;
 - (5) heat in amounts which will inhibit biological activity in the POTW resulting in Interference*, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 deg. C (104 deg. F) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits;
 - (6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference* or pass through**;
 - (7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
 - (8) Any trucked or hauled pollutants, except at discharge points designated by the POTW.
2. 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.
 3. The permittee shall provide adequate notice to the Department of the following:
 - (1) any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 or 306 of the Act if it were directly discharging those pollutants; and
 - (2) any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

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

* According to 40 CFR 403.3(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).

- ** According 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:
- i. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
 - ii. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the 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 the Marine Protection, Research and Sanctuaries Act.

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

1. SCOPE AND METHODOLOGY

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

APPLICABLE TO FINAL OUTFALL(S):	001
REPORTED ON DMR AS FINAL OUTFALL:	<u>OUTFALL</u> 001
CRITICAL DILUTION (%):	100 %
EFFLUENT DILUTION SERIES (%):	32%, 42%, 56%, 75%, 100%
TESTING FREQUENCY:	once/quarter
COMPOSITE SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the

control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013, or the most recent update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.
- c. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

2. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of 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 or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit. In addition:

a. Part I Testing Frequency Other Than Monthly

- i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with

the period discharge monitoring report (DMR) to the permitting authority for review.

- ii. **IF LETHAL EFFECTS HAVE BEEN DEMONSTRATED** 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 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.
- iii. **IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED** If any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE_{SL}) requirements as specified in Item 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required for failure to perform the required retests.
- iv. The provisions of Item 2.a.i. are suspended upon submittal of the TRE Action Plan.

b. Part I Testing Frequency of Monthly

The permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section when any two of three consecutive monthly toxicity tests exhibit significant toxic effects at or below the critical dilution. A TRE may also be required due to a demonstration of intermittent lethal and/or sub-lethal effects at or below the critical dilution, or for failure to perform the required retests.

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

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

- i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
 - ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
 - iii. 60% of the surviving control females must produce three broods. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
 - iv. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.
 - v. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.
 - vi. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.
 - vii. 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%.
 - viii. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;
 - ix. A PMSD range of 12 - 30 for Fathead minnow growth.
- b. Statistical Interpretation
- i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA/821/R-02-013 or the most recent update thereof.

- ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA/821/R-02-013 or the most recent update thereof.
- iii. If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.

c. Dilution Water

- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water 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 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
 - (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
 - (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);
 - (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and

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

d. Samples and Composites

- i. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for WET shall consist of 12 subsamples gathered at equal time intervals during a 24-hour period.
- ii. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples, on use, are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.
- 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 so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 6 degrees Centigrade during collection, shipping, and/or storage.
- 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. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol

associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section.

- vi. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in item 1.a. above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.
- vii. The permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.

4. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA/821/R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.
- b. 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 lethal and sub-lethal effects results for each species during the reporting period. The full reports for all invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.
- c. The permittee shall submit the results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

- i. Pimephales promelas (Fathead minnow)
 - (A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP6C
 - (B) Report the NOEC value for survival, Parameter No. TOP6C
 - (C) Report the NOEC value for growth, Parameter No. TPP6C
 - (D) If the NOEC for growth is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP6C
 - (E) Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C

- ii. Ceriodaphnia dubia

If the NOEC for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP3B

- (A) Report the NOEC value for survival, Parameter No. TOP3B
- (B) Report the NOEC value for reproduction, Parameter No. TPP3B
- (C) If the NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B
- (D) Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

5. TOXICITY REDUCTION EVALUATIONS (TRES)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE_{SL}) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE_L) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a TRE_{SL} where there are no effects at effluent dilutions of less than 76% effluent.

- a. Within ninety (90) days of confirming persistent toxicity, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes the following:
- i. **Specific Activities.** The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

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

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

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

Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

- 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.).

- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

- c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

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

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

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

A copy of the TRE Activities Report shall also be submitted to the state agency.

- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

A copy of the Final Report on Toxicity Reduction Evaluation Activities shall also be submitted to the state agency.

- e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

6. MONITORING FREQUENCY REDUCTION

- a. 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 1.a.) of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Ceriodaphnia dubia).
- b. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item 3.a. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.
- c. SUB-LETHAL OR SURVIVAL FAILURES - If any test fails the survival or sub-lethal 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.

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

10. Total Dissolved Solids

This permit is issued for three years with a requirement for monitoring and reporting for Total Dissolved Solids. Before the permit is reissued, the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No. 2, CPP, the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports and progress reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and limits will be effective immediately upon the effective date of the renewal permit.

Within 60 days from the effective date of this permit, the Permittee shall submit to ADEQ a workplan addressing options for achieving compliance with water quality standards for Total Dissolved Solids. These options include, but are not limited to: source reduction, outfall relocation, and/or revision of the Arkansas Water Quality Standards. The workplan shall contain a schedule for the completion of the study within 8 months of the effective date of the permit and selection of the preferred option(s) within 12 months of the effective date of the permit, unless such time periods are extended by ADEQ based on the findings of the study.

Upon approval by ADEQ, the submitted milestone schedule shall be incorporated into this permit by reference and will be enforceable. The workplan shall be signed and submitted to the attention of:

Arkansas Department of Environmental Quality
Water Division
Discharge Permits Section
5301 Northshore Drive
North Little Rock, AR 72118-5317

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 statutes or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (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 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5 (d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce not a Defense

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

3. Duty to Mitigate

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

4. Bypass of Treatment Facilities

a. Bypass not exceeding limitation

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II.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 and other approved Form by ADEQ). 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:

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

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

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of

this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. Retention of Records

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

8. Record Contents

Records and monitoring information shall include:

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

9. Inspection and Entry

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

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

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give notice 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 Section of the Water Division of the ADEQ.
- c. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours to the Enforcement Section of the Water Division of the ADEQ.

7. Other Noncompliance

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

8. Changes in Discharge of Toxic Substances for Industrial Dischargers

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

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

9. Duty to Provide Information

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

10. Duty to Reapply

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

11. Signatory Requirements

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

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

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

(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 the offices of the Department of Environmental Quality. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. Penalties for Falsification of Reports

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2. and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

PART IV DEFINITIONS

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

1. **“Act”** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **“Administrator”** means the Administrator of the U.S. Environmental Protection Agency.
3. **“APCEC”** means the Arkansas Pollution Control and Ecology Commission.
4. **“Applicable effluent standards and limitations”** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. **“Applicable water quality standards”** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APCEC) Regulation No. 2, as amended.
6. **“Bypass”** As defined at 122.41(m).
7. **“Composite sample”** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
8. **“Daily Discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
 - A. **Mass Calculations:** For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total mass of pollutant discharged over the sampling day.
 - B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month. The 7-day average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.
9. **“Department”** means the Arkansas Department of Environmental Quality (ADEQ).
10. **“Director”** means the Director of the Arkansas Department of Environmental Quality.
11. **“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.

12. **“E-Coli”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the monthly average as a 30-day geometric mean in colonies per 100 ml.
13. **“Fecal Coliform Bacteria (FCB)”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
14. **“Grab sample”** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
15. **“Industrial User”** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
16. **“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.
17. **“Instantaneous Minimum”** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
18. **“Monthly average”** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month. For Fecal Coliform Bacteria (FCB) or E-Coli, report the monthly average, (see 30-day average below).
19. **“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.
20. **“POTW”** means a Publicly Owned Treatment Works.
21. **“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.
22. **“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.
23. **“7-day average”** Also known as Average weekly. means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
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. **“Visible sheen”** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
27. **“MGD”** shall mean million gallons per day.
28. **“mg/l”** shall mean milligrams per liter or parts per million (ppm).
29. **“µg/l”** shall mean micrograms per liter or parts per billion (ppb).
30. **“cfs”** shall mean cubic feet per second.
31. **“ppm”** shall mean parts per million.
32. **“s.u.”** shall mean standard units.
33. **“Weekday”** means Monday – Friday.
34. **Monitoring and Reporting:**

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

A. MONTHLY:

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

B. BI-MONTHLY:

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

C. QUARTERLY:

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

D. SEMI-ANNUAL:

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

E. ANNUAL or YEARLY:

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

Final Fact Sheet

This Final Fact Sheet is for information and justification of the permit limits only and is not enforceable.

For the final renewal Permit Number AR0022004 with AFIN 44-00018 to discharge to Waters of the State

1. PERMITTING AUTHORITY.

The issuing office is:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT.

The applicant's mailing address is:

City of Huntsville
112 West War Eagle
P.O. Box 430
Huntsville, AR 72740

The facility address is:

City of Huntsville
30187 Madison Hwy 23
Huntsville, AR 72740

3. PREPARED BY.

The permit was prepared by:

Marysia Jastrzebski, P.E.
Staff Engineer
Discharge Permits Section, Water Division
(870)446-5939
E-mail: marysia@adeq.state.ar.us

4. PERMIT ACTIVITY.

Previous Permit Effective Date:	October 1, 2004
Previous Permit Expiration Date:	September 30, 2009

The permittee submitted a permit renewal application on March 31, 2009. The first draft permit was prepared and publicly noticed on May 15, 2010. During the public notice period two requests for a public hearing were submitted: one dated June 7, 2010, from Larry Garrett representing Huntsville Water Utilities and one dated June 7, 2010, from Stephen M. Valesko representing Butterball, LLC. These requests were granted and a Public Hearing and Public Meeting were conducted on July 22, 2010. Several commenters spoke during the hearing and submitted public comments. As a result, the draft NPDES permit has been revised. Pursuant to 40 CFR Parts 124.14(b) and (c), a second public notice was necessary to allow public participation on the proposed changes. Only changes from the May 15, 2010, draft were opened for public comment. The current discharge permit is being reissued for a 3-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

The following comments were received on the first draft permit publicly noticed on May 15, 2010. A response follows each comment:

Issue #1

“The City states as follows:

1. That the monitoring of Holman Creek for total dissolved solids (TDS) levels was undertaken by the ADEQ without notice to the City over a period of at least six years. During that time the finding that Holman Creek was an impaired stream was arrived at without the City having any opportunity to work with its major industrial wastewater customer, the Butterball Turkey Company, hereinafter "the Company", to alleviate the TDS discharge. If the opportunity to do so had been made available the City and the Company could have adopted whatever best management practices were necessary to reduce the TDS discharge into the POTW receiving stream with the goal of maintaining TDS levels below the limit currently cited as causing the impaired stream designation to be necessary. The City and the Company stand willing to accomplish those best management practices for that purpose, with the expectation that over the period of the proposed NPDES permit the TDS levels will be maintained consistently below the 500 mg/l standard level. If that were to be achieved the designation of Holman Creek as an impaired stream could be removed.
2. That ADEQ should remove the proposed TDS effluent limitation from the draft Permit in order to allow additional time for the City and the Company to identify and eliminate the sources of TDS. It is premature and unreasonable to impose the proposed "most stringent" effluent limitation at this time without allowing the responsible parties the opportunity to remedy the situation themselves.
3. Since it was notified of the proposed NPDES permit in May, 2010, the Company has identified and is investigating eighteen potential areas within its facility where best management practices and/or capital projects may be completed in an effort to significantly reduce the discharge of TDS (primarily salts) to the City's treatment plant. Given time, the Company expects to be able to substantially reduce its contribution of TDS to the City's effluent and is confident its efforts will likely result in Holman Creek

being removed from the State's 303(d) list, thus rendering the proposed permit limit moot.

4. The City and the Company share the same goals as ADEQ, i.e., preservation and improvement of water quality in the Holman Creek/Town Branch watershed and the removal of Holman Creek from the State's 303(d) list of impaired water bodies. However, there is no imminent threat to human health or the environment that justifies the proposed TDS permit limit. Based on the State's own water quality monitoring data, there have been no TDS exceedances in Holman Creek since December 2007 and only four exceedances since September 2006. In addition, the actual drinking water source, Beaver Lake, is approximately twenty five miles downstream from the City's discharge point.
5. ADEQ's reliance on the June 8, 2009, memorandum from Mo Shafi to Steve Drown as the legal basis for the TDS limit is arbitrary, capricious and not in accordance with governing law for several important reasons. First, an agency's informal guidance/policy document does not have the force of law. It was not subject to the formal rulemaking procedures, with the opportunity for public review and comment, and thus cannot form the legal basis for an agency decision. Second, ADEQ incorrectly cites to an inapplicable federal regulation as the stated regulatory basis for the guidance document's directives. The policy cites 40 CFR Part 122.4(i) as the basis for the imposition of the "most stringent applicable water quality criteria" and the three year compliance deadline for such limits. The federal regulation, however, establishes permit restrictions and limits only for "new sources" and "new dischargers" on impaired water bodies. It is not applicable to existing dischargers such as the City. Finally, even the guidance document itself notes that (1) "permit writers may use their best professional judgment to deviate from the guidelines contained in this chart," and (2) another option to the three year compliance deadline is a "site specific study until TMDL is finalized." ADEQ therefore incorrectly points to this guidance document as the legal basis for its proposed permitting decision and unreasonably fails to exercise its discretion to allow the parties additional time to study and remedy the TDS discharge issue on their own.
6. Should ADEQ fail to exercise its discretion and instead choose to impose the proposed permit limits on the City, the consequences would likely prove to be disastrous for the City, Madison County and the surrounding northwest Arkansas community. The region relies heavily on the economic impact of the Company's facility. The Company employs over 650 people from the City of Huntsville and surrounding area and provides them an annual payroll of more than \$22,000,000.00. It also acts as a critical client/customer to a number of local businesses, including those involved in welding, metal fabricating, trucking and trucking repair and maintenance, refrigeration repair, builders and contractors, concrete services, restaurants and retail, and many more. The Company paid \$140,000.00 in local property taxes last year together with \$1,053,482.00 to the City in the last twelve months for water and sewer service. The proposed limits are so stringent that only the most advanced technology, e.g., a reverse osmosis treatment system, would be capable of meeting the limits. Implementing this technology is currently estimated to cost approximately \$10,000,000.00 to \$15,000,000.00. If such costs were \$15,000,000.00, the annual additional financial burden which the City would have to assume through the issuance of thirty year municipal bonds with an interest rate of 5%

would range from \$975,000.00 to \$1,200,000.00. It is not a safe assumption that such bonds would be marketable. Therefore, neither the City nor the Company is in a financial position to fund this project. The City is constrained by the \$4,700,000.00 upgrade of the plant that was recently completed for the removal of phosphorus. That project, as were previous capital improvements, was funded by the issuance of municipal bonds, which now represent a total bonded debt in excess of \$6,800,000.00. The water utility customers are already burdened with higher water and sewer rates to pay the bonds off. We cannot ask our residential customers to pay more. Therefore the only option is to pass the costs of the required plant upgrade to remove TDS from its effluent onto our largest customer, Butterball Turkey Company. The Company would have to consider winding down its operations here and relocating its facility to another location where it is more affordable to operate if the proposed limits are put in place.

7. On information and belief, no other city in Arkansas is currently subject to TDS effluent limits, and only a very few are required to report TDS effluent levels. Therefore the City requests that the TDS effluent limit currently proposed to be included in the NPDES permit be removed, and in its stead a monitor and report requirement be substituted, with a view to the City's and the Company's working towards the abatement of TDS discharges in order to accomplish the reduction of the current level of TDS in Holman Creek sufficient to justify the eventual removal of Holman Creek from the ADEQ 303(d) list of impaired water bodies.”

“As Director of the Water Utility, I want everyone to know that we as a Utility want to be very proactive in protecting the stream and our water supply.

- In 2004 & 2005 when TDS levels were seen elevated at the ADEQ monitoring station on Holman Creek, had we been notified at that time that there was a potential problem we could have addressed it then by putting BEST MANAGEMENT PRACTICES in place and Holman Creek possibly could have never reached the impaired list thus not being here tonight.
- I also believe that in most cases, NPDES permit holders are asked to monitor and report for the period of 1 permit (5 years) when there is a suspected problem so that a basis of setting permit limits can be established, as happened with us for Nitrates/Nitrites, Phosphorus, etc . This never happened with us for TDS.
- ADEQ's own records show that there has not been a problem with TDS since 2006 and obviously shows that improvements have been made in water quality without even knowing there was a problem.
- If 500 Mg/l is an acceptable level for Holman Creek as ADEQ has stated as being the level that puts Holman Creek on the impaired list then the basis of 389 Mg/l (through the pounds formula) would lower the creek level to less than 100 by the time it reaches the monitoring station. All the more reason to allow MONITORING and REPORTING before setting a limit, to establish a basis for the numbers to be applied to in the limit.

- We are addressing the TDS through our industry and believe without a shadow of a doubt this can be corrected without limits being placed in our permit at this time through BMP's and causing millions of dollars to have to be spent for treatment when it would not be necessary if given the time to do so.
- All we are asking, is to allow us to MONITOR & REPORT for I permit period, implement BMP's to see if there is a problem and thus establishing a basis for a limit if one is needed.”

“Thank you for allowing the Federation to participate in this hearing. We appreciate the efforts being made to solicit input on this issue and strongly support a foundation of thorough fact finding as the basis for all proposed regulatory actions, including this one.

The Arkansas Poultry industry prides itself for being good stewards of the environment. We strive to provide a safe work environment and community for industry employees and the residents of Arkansas. We all agree clean water is crucial and should be protected. However, a review of the State's water quality data indicates that Holman Creek is not a waterway which requires the imposition of the most stringent water quality criteria. Holman Creek poses no imminent threat to human health or the environment, nor does it serve as a source of drinking water.

As I understand it, testing conducted by the state indicates there have been no TDS exceedences since December 2007 and only four since 2006. In addition, this creek is classified as a source of drinking water, when, in fact, it is not nor does it have a close proximity to the actual water source for the City or other nearby communities. It is difficult for me to understand why the state would require the most stringent TDS limits that are legally not required nor justified based on actual water quality data.

The proposed TDS limits in the draft permit, if finalized, will prove costly to the community. Others have submitted comments on the economic cost of complying with the proposed limits, with costs not only to the city, but to companies within the city, and to the tax payers and residents of the city. Quotes of compliance costs in excess of \$10 million are certainly something that requires companies to evaluate how they do business and whether there are other areas of this country that are more suitable to allowing a business to operate competitively. Any decision to move poultry production from the state of Arkansas would be costly. Jobs would be lost, family farms shut down, and the services from lost tax revenue would be compromised.

The Poultry Federation understands the need for regulations, but we do not support regulations that go above and beyond what is needed to fix a problem that does not exist.

We also understand the cost of doing business, and we hope that this commission will take its time and look closely at the science and facts and make a reasonable determination as to what is actually needed in this situation. We do not want or need a rushed decision that could create a serious problem for the residents of Arkansas should our employment and farms from the poultry industry move out of our state. I believe the department has the discretion

and this discretion should be used to the fullest extent as we work together to find the proper solution.”

“As you may know, Butterball owns and operates a turkey processing facility in the City of Huntsville, located at 1294 N. College Street. Effluent from the Butterball facility makes up approximately 80% of the total volume of wastewater received by and treated at the City's wastewater treatment plant. Butterball has a substantial interest in the Draft Permit as the City would likely have little choice but to attempt to pass the cost of any plant upgrades necessary to comply with the Draft Permit onto our facility in the form of water and/or sewer rate increases.

Butterball is committed to a healthy and safe work environment and community for its employees and the residents of Huntsville, Madison County and northwest Arkansas. Butterball also understands and supports the importance of clean water and the protection of a safe drinking water supply for the City and all area users. However, the Draft Permit's proposed limit on Total Dissolved Solids (TDS) goes far beyond what is necessary and legally required for the protection of water quality in the region. The proposed TDS limit is premature and unreasonable, and the Arkansas Department of Environmental Quality's (ADEQs) decision to include the TDS limit in the Draft Permit is arbitrary, capricious and otherwise not in accordance with the law. As explained below, Butterball, therefore, respectfully requests that ADEQ remove the proposed TDS limit from the Draft Permit in order to allow time for the City and Butterball to properly monitor, identify and address, where possible, any problems, real or perceived, associated with TDS in the City's effluent.

First, it is important to note that there is no imminent threat to water quality in Holman Creek due to the City's discharge which justifies the proposed TDS limit. The State's own water quality monitoring data for Holman Creek indicates that there have been no TDS exceedences of applicable water quality standards since December 2007 and only four (4) exceedences since September 2006. If this trend continues, it is likely that Holman Creek will be removed from the State's 303(d) list within a few years. Further, while Holman Creek is currently designated for use as a source of drinking water, it is not used as such, and the actual source of drinking water for the City and region is Beaver Lake which is located approximately 25 miles downstream of the City's discharge point. There is no indication in the record that water quality at Beaver Lake is in anyway impaired due to the concentration of TDS in the City's effluent. Thus, from a water quality perspective, there is no reasonable basis for the Draft Permit's proposed TDS limits, and it is unreasonable for ADEQ to manage Holman Creek as a source of drinking water. The State should develop and apply appropriate stream-specific water quality standards for Holman Creek, in accordance with Arkansas Regulation 2.306, instead of using the generic, default ecoregion standards used in the Draft Permit.

In addition, the State is under no obligation to impose the proposed TDS limit at this time and clearly has the discretion to delay the imposition of such a limit. As indicated in the Draft Permit and accompanying Narrative, ADEQ primarily relies on its June 8, 2009 internal memorandum from Mo Shaffi to Steve Drown as the legal basis for the proposed TDS limit. Reliance on this informal policy memorandum is arbitrary, capricious and not in accordance with governing law for several important reasons. First, an agency's informal guidance/policy

document does not have the force of law. *Orsini v. State*, 340 Ark. 665,670 (2000) (only those regulations adopted pursuant to legislative authority are considered to be part of the substantive law of the state); see also *Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000). The memorandum was not subject to the State's formal rulemaking procedures, with the opportunity for public review and comment, and thus cannot form the legal basis for an agency decision. Second, ADEQ incorrectly cites to an inapplicable federal regulation as the stated regulatory basis for the guidance document's directives. The policy cites 40 CFR Part 122.4(i) as the basis for the imposition of the "most stringent applicable water quality criteria" and the 3-year compliance deadline for such limits. The cited federal regulation, however, establishes permit restrictions and limits only for "new sources" and "new dischargers" on impaired water bodies. It is not applicable to existing dischargers such as the City of Huntsville. Finally, even the guidance document itself states that the "permit writers may use their best professional judgment to deviate from the guidelines contained in this chart," and another option to the 3-year compliance deadline is a "site specific study until TMDL is finalized." Thus, the June 2009 policy memorandum cannot form the legal basis for the imposition of the proposed TDS limit.

ADEQ also relies on Arkansas Regulation 2.104 as a basis for the establishment of the proposed 3-year deadline for the City to comply with the TDS limit. However, ADEQ appears to be applying this regulation in a different manner than it was intended for. Regulation 2.104 allows ADEQ to provide a reasonable time for an existing facility to comply with new or revised water quality based effluent limits but places a three-year limit on any compliance schedule offered to a permittee. Thus, the regulation provides that a permittee can be allowed no more than three years to come into compliance with a new effluent limit once such a limit is included in its permit. It does not, however, establish any specific time period within which ADEQ must establish, create or impose a new water quality based effluent limit and place it within a permittee's permit. It only applies after a new water quality limit is included in a permit. Stated another way, the mere listing of Holman Creek on the State's 303(d) list does not trigger the regulation's three-year deadline. The State has the discretion to allow time for additional monitoring, study and/or corrective action before deciding to create and impose a new TDS limit in the City's permit.

ADEQ therefore incorrectly relies on the June 2009 guidance document and Arkansas Regulation 2.104 as the legal basis for its proposed permitting decision. Neither is binding on the State and neither can serve as the basis for the creation and imposition of the proposed TDS limit at this time. The decision to impose the TDS limit at this time is, therefore, arbitrary and capricious, and the State should exercise its reasonable discretion and remove the proposed TDS requirement from the Draft Permit. Further, as noted above, the State should revise the designated use of Holman Creek, in accordance with Arkansas Regulation 2.306, and remove the current designation as a drinking water source in order to develop more appropriate stream specific water quality standards.

ADEQ can exercise its discretion and provide the City and Butterball the much needed time to study and evaluate the complex issue of TDS in our respective wastewaters, in lieu of incorporating the proposed TDS limit into the Draft Permit. Since the issuance of the Draft Permit in May 2010, Butterball has retained a consultant to work with it to develop a comprehensive facility assessment work plan to better understand the processes that generate

TDS. The facility assessment work plan will not only examine the facility's processes but identify the sources of TDS within the facility and evaluate feasible alternatives and actions for source reduction and/or improved operations and maintenance of existing treatment systems. The goal of the facility assessment work plan is to identify and implement areas of source reduction of TDS (primarily salts) to the City's treatment plant.

It is critical that ADEQ remove the proposed TDS limit from the Draft Permit in order to avoid potentially disastrous economic consequences to the City of Huntsville, Madison County and the surrounding region. If the proposed TDS limit is finalized, it is likely that the City would be required to construct a reverse osmosis treatment system in order to assure compliance with the new limit. Our consultants estimate that an appropriately sized reverse osmosis system would cost the City approximately \$10 - 15 million to construct with significant additional annual operating expenses. Butterball understands that the City is not likely to be able to finance such a project without passing a substantial portion of the costs onto Butterball via increases in water and sewer rates. Any such additional costs would place a significant strain on the economic performance of our facility and would likely force our Company to re-evaluate our business model for the facility and the northwest Arkansas region. The resulting impact on Huntsville and the surrounding community could be severe. Butterball is the largest employer in the City and Madison County. The facility employs over 650 people from the region, almost 350 of whom are City and County residents. These employees earn over \$22 million annually in payroll and benefits, approximately half of which goes to the City and County residents. In addition, in 2009, the Company paid almost \$140,000 in local property taxes and paid \$1,053,482 to the City for water and sewer services. The Butterball facility also is a significant customer to many of the City and region's local businesses, including those involved in welding, metal fabricating, trucking and trucking repair and maintenance, refrigeration repair, builders and contractors, concrete services, restaurants and retail, and many more. In short, the economic consequences of the Draft Permit on the City of Huntsville, Madison County and the surrounding region could be severe and should not be overlooked by ADEQ when considering whether to go forward with the proposed TDS limit.

Based on the above, Butterball requests that ADEQ remove the proposed TDS limit from the Draft Permit. In its place, Butterball recommends that ADEQ propose a program for the monitoring and sampling of water conditions in Town Branch and Holman Creek, and provide a reasonable schedule for the City and Butterball to identify and adopt whatever best management practices or capital projects are necessary and appropriate to reduce the concentration of TDS in the City's effluent. ADEQ should also move forward with the removal of the current drinking water designated use for Holman Creek and designate a more appropriate stream-specific use and corresponding water quality standards.”

“I’m a citizen of Benton County and President of the Northwest Arkansas Property Rights Association. In listening to the presentation of the various members of the Arkansas Department of Environmental Quality it became apparent that the monitoring station at Holman Creek has shown the water quality has met or exceeded standards for the past three years. That or exceeded federal standards. Since the Huntsville water treatment plant was up-, this was since the Huntsville water treatment plant was upgraded. There is nothing to indicate that they will not continue to meet this criteria in the foreseeable future. Therefore,

in the interest of good and fair government, I feel as though no change should be required. Thank you.”

“The City accomplished a \$1.25 million upgrade of its treatment plant in 2001 for the removal of nitrate-nitrites. The funding for which came from grant monies that were accessed after resolute resistance to an increase in water rates was announced by the City's principal wafer customer, a poultry processor still in operation here currently owed by the Butterball Turkey Company.

We have just completed a \$4.7 million upgrade of our treatment plant for phosphorus removal. The funds for this project came from municipal bonds, which will be paid off over several years by rates paid by our customers. At the beginning of this year a dramatic decrease in water usage by the Butterball Turkey Company resulted in our having to raise water rates to meet our bonded debt and operational cash flow requirements.

The proposed TDS limits will impose a cost burden on the City which our engineers, McGoodwin, Williams & Yates, have estimated in the range of \$10 to \$15 million. Our only option would be to pass either the cost burden or the burden of actual compliance with these limits on to the Butterball Turkey Company. We cannot be certain that the Company will assume either burden, and the possibility exists that it would relocate its Huntsville operations elsewhere. This would be a devastating blow to the City of Huntsville, Madison County, and northwest Arkansas.

Our experience with plant upgrades in 2001 and 2008 have demonstrated that the time for achieving compliance with an effluent limit such as that in this proposed permit exceeds the time stated therein.

Therefore it is necessary for the City of Huntsville to request that the Total Dissolved Solids limit stated in this draft permit be postponed until economic resources are available sufficient to meet the construction costs it will entail. The City also asks that the time for compliance be stated with adequate allowance for the design and construction of the facility mandated by it

The City further requests that there be a public hearing on this matter.”

Response #1

While it is important to note that the Department does not agree with all of the submitted comments, the Department met with the permittee and the representatives of Butterball on August 24, 2010 to discuss issues related to Total Dissolved Solids raised during the public comment period. In accordance with the discussions during this meeting and a letter dated September 14, 2010, and a letter received on October 25, 2010, from Larry Garrett, Executive Director of Huntsville Water Utilities, it has been decided to reissue this permit for three years with a monitoring and reporting requirement for Total Dissolved Solids. Additionally, the permittee will be required to develop a workplan addressing options for achieving compliance with water quality standards for Total Dissolved Solids. These options include, but are not limited to: source reduction, outfall relocation and/or revision of the

Arkansas Water Quality Standards. Upon approval by ADEQ, the submitted milestone schedule shall be incorporated into this permit by reference and will be enforceable.

After three years and before this permit is renewed, the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No. 2, Continuous Planning Process (CPP), the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports and the progress reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and the limits will be effective immediately upon the effective date of the renewed permit.

It is also crucial to add that removal of the current drinking water designated use for Holman Creek and/or Town Branch and/or modification of water quality criteria in these streams under Reg. 2.306 must be initiated by a third party, not by the Department.

Issue #2

“Re Draft Permit, Part I.A, Pages 1-4, Interim and Final Effluent Limitations for Total Dissolved Solids (TDS): The Draft Permit requires that TDS be monitored and reported for the first three years and thereafter be limited to a monthly average of 6,488.5 pounds per day. BWD supports the inclusion of final effluent limitations for TDS at least as stringent as in the Draft Permit given that Holman Creek is listed as impaired for TDS on the 2008 303(d) list and for TDS and Chloride on the proposed 2010 303(d) list. BWD suggests that ADEQ consider including final effluent concentration limits for TDS, which according to the Fact Sheet at page 13 would be a Monthly Average limit of 389 mg/l and a 7-Day Average limit of 583.5. Monthly Average and 7-Day Average concentration limits are included for all of the other pollutant parameters that have mass limits. BWD notes that apparently per Arkansas Pollution Control and Ecology Commission (APCEC) Regulation 2.106 and 2.511, the critical flow used to calculate the TDS limit was four (4) cfs. The Q7-10 for the receiving stream is zero and the actual flow (or the harmonic mean flow) prior to the discharge apparently is unknown. See Fact Sheet at pages 12-13. BWD suggests that flow monitoring upstream of the discharge be required for future use in regard to TDS and Chloride.”

Response #2

The Department disagrees. After consideration of the comments submitted by several commenters regarding new effluent limitations for TDS, the Department made the determination to issue this permit for three years with a requirement for monitoring and reporting. See Response #1 for details. Furthermore, the use of the critical flow of four (4) cfs is appropriate in accordance with Reg. 2.106.

No change to the draft permit is proposed.

Issue #3

“In addition to the comments above regarding the proposed TDS limit, Butterball also offers the following comment for ADEQ's consideration. The Draft Permit proposes revised

(reduced) Ammonia Nitrogen and Total Phosphorous effluent limitations without providing the City a reasonable period of time to come into compliance with the new limits. The Draft Permit provides no compliance schedule for the Ammonia Nitrogen limit and only a one-year compliance schedule for the Total Phosphorus effluent limitations. As noted above, Arkansas Regulation 2.104 states that it the Department's policy to provide a reasonable time for an existing facility to comply with new or revised water quality based effluent limitations once such limits are placed in a permit. The regulation allows for a compliance schedule of up to three years to be included in a NPDES permit at the time of its renewal. Butterball therefore requests that the Draft Permit be revised to include a three year schedule of compliance for the revised Ammonia Nitrogen and Total Phosphorus limits, and that the proposed interim limitations for Total Phosphorus be changed to monitor and report only.”

Response #3

The Department disagrees. Reg. 2.104, does not require the Department to include a three-year schedule, but rather “on a case-by-case basis, a reasonable time for an existing facility to comply with new or revised water quality based effluent limits. Consequently, compliance schedules may be included in NPDES permits at the time of renewal to require compliance with new water quality standards at the earliest practicable time; but not to exceed three years from effective date of permit.”

In the case of Total Phosphorus, the following rationale was used to establish one year as a “reasonable” and “earliest practicable” time to meet the final effluent limits for this parameter:

- (1) The city has known of its upcoming effluent limitations for Total Phosphorus for more than 5 years. In accordance with page 6 of Fact Sheet published with the previously issued permit “Monitoring and reporting requirements for Phosphorous are included in the proposed permit. Effluent limitations for Total Phosphorous will be included in the next NPDES permit”, and
- (2) The City has already installed wastewater treatment units designed to remove this pollutant. In order to comply with this future permit limit, the City finished upgrading its wastewater treatment facility in November 2008. In accordance with a letter dated March 9, 2009, from Mayor Bates, the anaerobic selector basin allowing for the biological removal of phosphorus had been built as planned. In addition to the ability to remove phosphorus biologically, an alum feed system with chemical storage tank, was constructed as planned.
- (3) A review of Discharge Monitoring Reports indicated that the facility is not consistently meeting the proposed limitations (four out of thirteen reported Monthly Average values exceeded the proposed limit of 2 mg/l). It was the best engineering judgment of the permit writer to allow one more year before the limits become effective so the city can implement any further operational measures needed to achieve the final limitations. This one year is considered to be “reasonable” and the “earliest practicable” time to achieve these limits since the wastewater treatment technology to meet these limits is already in place.

- (4) The interim effluent limitations will remain as originally proposed. The existing facility has been specifically upgraded to remove Total Phosphorus. Since this upgrade the highest Monthly Average of 4.5 mg/l was reported in April 2009. All reported concentrations since April 2009 were below these values. Therefore, it is the best engineering judgment of the permit writer that the existing facility is capable of meeting the proposed interim limits of the Monthly Average of 5 mg/l and 7-Day Average of 7 mg/l on the effective date of the permit.

Ammonia Nitrogen: The Department disagrees. The following rationale was used to require immediate compliance date:

- (1) The facility already has the following limitations for this parameter: Monthly Average of 3 mg/l and Daily Maximum of 5 mg/l.
- (2) A review of Discharge Monitoring Reports for the months of April 2005 through March 2010 indicated that facility violated the proposed Monthly Average effluent limit of 1.6 mg/l (effective during the months of April through October) only 5 out of 35 reporting periods. The last time the permittee reported concentration above the proposed limit was in August 2008. The average Monthly Average concentration of 0.44 mg/l, which is significantly lower than the proposed limit of 1.6 mg/l, was reported since the facility's upgrade in November 2008.
- (3) Since the facility already has the wastewater treatment technology capable of meeting the proposed effluent limits and has been demonstrating consistent compliance during last 22 reporting periods, there is no justification for allowing any permit schedule under Reg. 2.104.

Issue #4

“In general and subject to the comments below, BWD supports the changes that have made the Draft Permit more stringent than the current permit, including the effluent limitations for Ammonia-Nitrogen (NH₃-N). We understand and appreciate any concerns the City may have related to increased costs associated with these more stringent permit requirements, particularly during the current economic downturn. Nonetheless, we believe that the current and future economic condition of Northwest Arkansas is dependent upon the protection of the water quality of Beaver Lake, and that it is incumbent upon all of the point source dischargers in the watershed to ensure that their discharges do not contribute to a degradation of the water quality of the lake.”

Response #4

The Department acknowledges this comment. No permit action is required.

Issue #5

“re Draft Permit, Part LA, Pages 1-4, Interim and Final Effluent Limitations for Total Phosphorus (TP): BWD supports the inclusion of TP effluent limitations that are at least as stringent as those in the Draft Permit. These limits are readily achievable with the treatment system already installed at the plant. The Beaver Lake watershed was declared to be a Nutrient Surplus Area by Act 1061 of 2003 (codified at Ark. Code Ann. § 15-20-1104). Current research shows the upper one-third (1/3) of Beaver Lake to be eutrophic to have an overabundance of algae. (See, e.g., Koller Iriarte, Monica A., 2007, Trophic Conditions and Nutrient Limitations in the Headwaters of Beaver Lake, Arkansas, During a Dry Hydrologic Year, 2005-2006, Masters Abstracts International, Vol. 45. No. 04). Algae content, as expressed by Chlorophyll-a, has also been shown to be directly related to both TP and Total Nitrogen (Koller Iriarte, 2007). Because of algae, BWD experiences episodic taste and odor events in the drinking water. These algal blooms can also cause operational problems for our treatment processes, such as the clogging of our filters. In addition and also related to the nutrient levels in the lake, BWD is seeing an increase in disinfection byproducts precursors in the water at our intake. When chlorinated, these precursors form disinfection byproducts (DBPs). DBPs are strictly regulated under the Safe Drinking Water Act, with the DBP limits becoming even more stringent in 2012. The cost for BWD and its customer cities to maintain compliance with the 2012 DBP standards is expected to be significant. It is, therefore, particularly important to BWD that the Huntsville facility's nutrient-containing wastewater not contribute to increased algal growth in the Lake.”

Response #5

The Department acknowledges this comment. No permit action is required.

Issue #6

“re Draft Permit, Part LA, Pages 1-4, Interim and Final Effluent Monitoring Requirements for TP: For the pollutant parameters, TP is to be monitored twice per month and the rest of the parameters are to be monitored once per week. No explanation is given in the Fact Sheet for why TP is to be monitored only half as frequently as the other pollutant parameters, other than that the monitoring frequencies remain the same as in the current permit. The current permit did not contain limits for TP; only monitoring was required. Now that TP limits are included in the Draft Permit, BWD requests that TP also be monitored once per week. By comparison, the NPDES Permit No. AR0050024 issued in October 2009 to the Northwest Arkansas Conservation Authority (NACA) requires that TP be monitored three (3) times per week. The design flow for NACA is 3.6 MGD and for Huntsville it's 2.0 MGD. The NACA design flow is less than twice that of Huntsville, but NACA is required to monitor for TP approximately 6 times more frequently than Huntsville. Given the concerns related to nutrients in the Beaver Lake watershed set forth in Comment 2 above, it seems reasonable and prudent that Huntsville be required to monitor for TP at least once per week. Weekly TP monitoring also would not be unduly burdensome or expensive.”

Response #6

The Department agrees. In order to be consistent with the monitoring frequencies required for other parameters the monitoring frequency for Total Phosphorus has been changed from twice per month to once per week. However, this monitoring frequency may be reduced after five years if the facility shows consistent compliance with this new permit limit. The second draft includes the monitoring frequency of once per week.

Issue #7

“re Draft Permit, Part I.A, Pages 1-4, Interim and Final Effluent Limitations: BWD suggests that monitoring and reporting for Chloride be required given that Holman Creek is listed as impaired for Chloride on the proposed 2010 303(d) list. Does ADEQ intend to modify the permit to include Chloride limits if the listing for Holman Creek on the proposed 2010 303(d) list is approved by EPA?”

Response #7

Chloride is not listed on any approved 303(d) list, therefore, the Department has no rationale for inclusion of this parameter in the NPDES permit. If this parameter is added to any future lists, any future NPDES permits issued to the City of Huntsville will address it.

No change to the draft permit is required.

Issue #8

“Comment 6 re Draft Permit, Part LA, Pages 1 and 3, Sample Types: The required sample types for a number of the pollutant parameters is "3-hr. composite." BWD questions whether this is consistent with ADEQ's current policy and with the current revisions to the standard Part IV Definitions.”

Response #8

The Department agrees. The second draft permit will include a requirement for a “composite sample” instead of a “3-hr composite”. “Composite sample” is defined in Part IV of the permit as a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.

Issue #9

“re Draft Permit, Part II: The numbering of the sections in Part II does not follow a consistent pattern and is, therefore, confusing. In addition, the tables giving the locations of the sites for the land application of biosolids on pages 7-8 of Part II do not have a section number, and are inappropriately included under Part II, Condition 3.(b)(3)(ii) regarding the

land application annual reports. BWD suggests that the sections in Part II be renumbered for consistency and to include a section number for the tables that begin on Page 7 of Part II of the Draft Permit.”

Response #9

The Department agrees. All condition in Part II have been renumbered for consistency and a section number has been included for the table with the locations of the land application sites.

DMR Review:

The Discharge Monitoring Reports (DMR's) from the previous permit cycle were reviewed during the permit renewal process. There was only one violation shown for the following parameters and reporting periods during last two years:

CBOD5: May 2008 (7-Day Avg. only)

Since there were no recent or consistent permit violations noted, no action is required at this time.

Legal Order Review:

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

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY DRAFTED PERMIT.

The following are changes/revisions to the first draft permit publicly noticed on May 15, 2010:

1. This NPDES permit will be issued for 3 years.
2. The effluent limitation for Total Dissolved Solids has been replaced with Monitoring and Reporting requirements. A special condition addressing TDS has been included in Part II.
3. A schedule of compliance for Total Dissolved Solids has been revised.
4. The sample type for CBOD5, TSS, NH3-N, Nitrite+Nitrate Nitrogen, and Total Dissolved Solids has been changed from 3-hr composite to composite.
5. The sampling frequency for Total Phosphorus has been changed from twice per month to once per week.
6. Part IV has been revised.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on the previous permit:

Latitude: 36° 06' 45" Longitude: 93° 43' 58"

The receiving waters named:

Town Branch, thence to Holman Creek, thence to War Eagle Creek, thence to the White River in Segment 4K of the White River Basin. The receiving stream in reach # 959 in USGS Hydrologic Unit Code (H.U.C) of 11010001 is a Water of the State classified for secondary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

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

a. 303(d) List:

The receiving stream, Town Branch is not listed on the 2008 303(d) list, however, Town Branch flows approximately one half a mile before its confluence with Holman Creek. Holman Creek is listed on 2008 303(d) list in Category 5A as impaired for Total Dissolved Solids with a municipal source listed as a source of the impairment. No TMDL is available at this time.

Based on the comments submitted by the permittee and several other commenters, the first draft permit has been revised to delete the effluent limitations for TDS. Instead, the current permit will be reissued for three years and will only require monitoring and reporting for this parameter. Additionally, the permittee will be required to develop a workplan addressing options for achieving the compliance with water quality standards for Total Dissolved Solids. These options include, but are not limited to: source reduction, outfall relocation and/or revision of the Arkansas Water Quality Standards. Upon approval by ADEQ, the submitted milestone schedule shall be incorporated into this permit by reference and will be enforceable.

This permit may be reopened to include the effluent limitations for this parameter if required by TMDL as per special condition No. 6 of Part II. The permittee may chose to perform TMDL and submit it to the Department for review and approval.

US EPA Region 6 with cooperation from the Arkansas Department of Environmental Quality established TMDL for Nitrites + Nitrates Nitrogen in December 2000. The effluent limitations for this parameter are consistent with this TMDL.

b. Endangered Species:

No comments on the application were received from the U.S. Fish and Wildlife Service (USF&WS).

8. OUTFALL AND TREATMENT PROCESS DESCRIPTION.

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

a. Design Flow: 2.0 MGD

- b. Type of Treatment: bar screen, grit removal, anaerobic selector, anoxic basin, oxidation ditch, final clarification, UV disinfection unit, cascade aeration
- c. Discharge Description: treated municipal wastewater
- d. Facility Status: This facility is classified as a Major municipal since the design flow of the facility is greater than 1.0 MGD.

9. ACTIVITY.

Under the Standard Industrial Classification (SIC) code of 4952 or North American Industry Classification System (NAICS) code of 22132, the applicant's activities are the operation of a sewage treatment plant.

10. INDUSTRIAL WASTEWATER CONTRIBUTIONS.

This facility receives non-categorical significant industrial process wastewater from one facility, a turkey processor. Based on this and the applicant's effluent compliance history, standard boilerplate Pretreatment Prohibitions (40 CFR 403.5(b)) are deemed appropriate at this time.

11. SEWAGE SLUDGE PRACTICES.

Sewage sludge is stabilized by lime stabilization and dried in sludge drying beds before being land applied at the following approved land application sites:

Land Owner	Field	Acres	Section	Township	Range
MRiver	1	76	13	17 North	26 West
	2	60	13	17 North	26 West
	3	20	13	17 North	26 West
	4	20	13	17 North	26 West
	5	6	13	17 North	26 West
	6	14	14	17 North	26 West
	7	29	12	17 North	26 West
	8	6	14	17 North	26 West
	9	1	14	17 North	26 West
	10	13	24	17 North	26 West
	11	39	14	17 North	26 West
	12	10	14	17 North	26 West
	13	6	13	17 North	26 West
	14	4	13	17 North	26 West
	15	73	13	17 North	26 West
	16	73	24	17 North	26 West
	17	27	24	17 North	26 West
	18	7	14	17 North	26 West

Land Owner	Field	Acres	Section	Township	Range
MRiver	19	24	11	17 North	26 West
	20	14	11	17 North	26 West
	21	24	14	17 North	26 West
	22	18	14	17 North	26 West
	23	16	13	17 North	26 West
	24	3	14	17 North	26 West
	25	4	14	17 North	26 West
	26	22	14	17 North	26 West
Walden	27	1	13	17 North	26 West
	11	30	3	17 North	26 West
	12	20	3	17 North	26 West
	13	15	3	17 North	26 West
	21	10	31	18 North	25 West
	22	25	31	18 North	25 West
	23	5	31	18 North	25 West
	24	20	31	18 North	25 West
Cox	25	30	31	18 North	25 West
	26	25	31	18 North	25 West
	1	8	10	17 North	26 West
	2	5	10	17 North	26 West
	3	45	15	17 North	26 West
McCloud	4	30	10	17 North	26 West
	5	24	10	17 North	26 West
Whorton	1	10	22	17 North	26 West
Hatfield	1	23	22	17 North	26 West
	2	15	6	17 North	25 West
WWTP	1	40	6	17 North	25 West
	1	8	27	17 North	26 West
Garrett	1	9	34	16 North	27 West
	2	10	34	16 North	27 West
	3	5	34	16 North	27 West
	4	1	34	16 North	27 West
	5	5	34	16 North	27 West
Johnson	E1	15	21	17 North	26 West
	W1	30	22	17 North	26 West
	W2	40	27	17 North	26 West
	W3	40	28	17 North	26 West

Approval to land apply biosolids pursuant to Part II Condition 3 of the NPDES permit is limited to a maximum of two (2) years after this permit's effective date. A separate land application permit (or permits) must be obtained within this time period or application of biosolids must cease. Reporting requirements of Part II Condition 3 continue for the term of this permit unless they are superseded by similar conditions in one or more separate land application permits.

12. PERMIT CONDITIONS.

The Arkansas Department of Environmental Quality has made a determination to issue a final 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.).

a. Interim Effluent Limitations

Outfall 001- treated municipal wastewater

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

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Maximum)	Once/day	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	167	10	15	Once/week	composite
Total Suspended Solids (TSS)	250	15	22.5	Once/week	composite
Ammonia Nitrogen (NH3-N)					
(April-Oct)	26.6	1.6	3.9	Once/week	composite
(Nov-March)	50.0	3.0	4.5	Once/week	composite
Dissolved Oxygen	N/A	6.6(Inst. Min.)		Once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	1000	2000	Once/week	grab
Total Phosphorus	83.4	5	7.5	Once/week	grab
Nitrite+Nitrate Nitrogen	166.8	10	15	Once/week	composite
Total Dissolved Solids	Report	Report	Report	Once/week	composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Once/week	grab
Chronic WET Testing	N/A	Report		Once/quarter	composite

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

b. Final Effluent Limitations

Outfall 001- treated municipal wastewater

i. Conventional and/or Toxic Pollutants

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
		Monthly Avg.	Monthly Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Maximum)	Once/day	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	167	10	15	Once/week	composite
Total Suspended Solids (TSS)	250	15	22.5	Once/week	composite
Ammonia Nitrogen (NH3-N)					
(April-Oct)	26.6	1.6	3.9	Once/week	composite
(Nov-March)	50.0	3.0	4.5	Once/week	composite
Dissolved Oxygen	N/A	6.6 (Inst. Min.)		Once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	1000	2000	Once/week	grab
Total Phosphorus	33.4	2	3	Once/week	grab
Nitrite+Nitrate Nitrogen	166.8	10	15	Once/week	composite
Total Dissolved Solids	Report	Report	Report	Once/week	composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Once/week	grab
Chronic WET Testing	N/A	Report		Once/quarter	composite

- ii. **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 final 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 final 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
CBOD5	10	15	25	40	10	15	10	15
TSS	15	22.5	30	45	15	23	15	22.5
NH3-N								
(April-Oct)	1.6	3.9	N/A	N/A	3	5	1.6	3.9
(Nov-March)	3.0	4.5	N/A	N/A	3	5	3.0	4.5
Dissolved Oxygen	6.6 (Inst. Min.)		N/A		6.6 (Inst. Min.)		6.6 (Inst. Min.)	
FCB (col/100 ml)	1000	2000	N/A	N/A	1000	2000	1000	2000
TP	2	3	Report	Report	Report	Report	2	3
NO ₃ + NO ₂ - N	10	15	N/A	N/A	10	15	10	15
TDS	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.		6-9 s.u.		6.0-9.0 s.u.	

Parameter	Water Quality or Technology	Justification
CBOD5	Water Quality	MultiSMP Model dated July 13, 2009, 40 CFR 122.44(l), Previous Permit
TSS*	Technology	CPP, 40 CFR 122.44(l), Previous Permit
NH3-N**	Water Quality	Reg. 2.512 / MultiSMP Model dated July 13, 2009
DO	Water Quality	Reg. 2.505
Fecal Coliform Bacteria	Water Quality	Reg. 2.507
Nitrite+Nitrate Nitrogen	Water Quality	Previous Permit, TMDL for Nitrate dated December 8, 2000 for Town Branch and Holman Creek
Phosphorus***	Technology	Reg. 2.509
pH****	Water Quality	Reg. 2.504
TDS*****	Water Quality	Reg. 2.511

* TSS

The 7-Day Average effluent limitations have been slightly revised in accordance with the following equation:

Daily Maximum limits = Monthly average limits X 1.5

** NH3-N

The water quality effluent limitations for Ammonia are based either on DO-based effluent limits or on toxicity-based standards, whichever are more stringent. The toxicity-based effluent limitations are based on Reg. 2.512 and Section 5.35 of the CPP.

More stringent effluent limitations have been included for the months of April through October. A review of the DMRs data indicates that the existing facility is capable of meeting these limitations, therefore, no schedule of compliance is included. These limits are effective immediately.

*** Total Phosphorus

Act 1061 of 2003(codified at Ark. Code Ann. &15-20-1104) declared the Upper White River watershed above its confluence with the Buffalo River, including Madison County in HUC 11010001 to be Nutrient Surplus Area.

In accordance with Reg. 2.509 Monthly Average effluent limitation of 2 mg/l applies to the wastewater treatment facilities with the design flows between 1 to 3 mgd discharging to waters in Nutrient Surplus Areas.

The permittee received a Construction Permit for expansion to the existing wastewater treatment plant on August 18, 2006. On March 9, 2009, the Department received a letter from Mayor Bates summarizing the changes that had been made to the scope of construction. According to this letter, the anaerobic selector basin allowing for the biological removal of phosphorus had been built as planned. In addition to the ability to remove phosphorus biologically, an alum feed system with chemical storage tank, was constructed as planned.

A review of the Discharge Monitoring Reports for the months of November 2008 (when the anaerobic selector basin was completed) through November 2009 indicates that the existing wastewater treatment facility is not consistently meeting the proposed Monthly Average effluent limitations. The average Monthly Average during these 13 months was calculated to be 2.0 mg/l, however four reported monthly values were above the proposed limit of 2 mg/l. The highest Monthly Average concentration of 4.7 mg/l was reported in April 2009. Additionally, three reported 7-Day Average concentrations were above the proposed 7-Day Average limit of 3 mg/l. The highest reported 7-Day Average concentration of 6.7 mg/l was reported in April 2009.

The final limitations of 2 mg/l (Monthly Average) and 3 mg/l (7-Day Average) will become effective one year from the effective date of the permit. Since the permittee already installed wastewater treatment units designed to remove Total Phosphorus, this one year will allow the permittee time to implement any operational measures needed to achieve the final limitations. In the interim effluent limitations of 5 mg/l (Monthly Average) and 7.5 mg/l (7-Day Average) will apply. Based on the submitted DMRs these interim effluent limitations can be consistently met on the effective date of the permit.

**** pH

The effluent limitations for this parameter have been revised from 6-9 s.u. to 6.0-9.0 s.u. to be consistent with Reg.2.504.

***** Total Dissolved Solids (TDS)

See Response #1 on page 10 above and Paragraph 7.a. on page 17 above for details.

This permit may be reopened to include the effluent limitations for this parameter if required by TMDL as per special condition No. 6 of Part II.

a. Anti-backsliding

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

The final 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 2.0 MGD and the following equation:

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

ii. Daily Maximum(7-Day Average) Limits:

$$\text{Daily Maximum limits} = \text{Monthly average limits} \times 1.5$$

c. 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 Reg. 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.

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, therefore no further evaluation is necessary. However, where 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, Reg. 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 instream waste concentration (IWC):

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

where:

IWC = instream concentration of pollutant after mixing with receiving stream ($\mu\text{g/l}$)
 C_e = pollutant concentration in effluent ($\mu\text{g/l}$)
 Q_e = effluent flow of facility (cfs)
 C_b = background concentration of pollutant in receiving stream ($\mu\text{g/l}$)
 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 Priority Pollutant Screen (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 factor is based on EPA's Region VI 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 = 2.0 MGD = 3.09 cfs

C_b = 0 $\mu\text{g/l}$

Q_b = (See below):

I. Aquatic Toxicity

Chronic Toxicity: Flow = 0 cfs, for comparison with chronic aquatic toxicity. This flow is 67 percent of the 7-day, 10-year low-flow (7Q10) for the receiving stream. The 7Q10 of 0 cfs is based on "Identification and Classification of Perennial Stream of Arkansas", Arkansas Geological Commission Map.

Acute Toxicity: Flow = 0 cfs, for comparison with acute aquatic toxicity. This flow is 33 percent of the 7Q10 for the receiving stream.

II. Bioaccumulation

Flow = 0 cfs, for comparison with bioaccumulation criteria.

III. Drinking Water

Flow = 0 cfs, for comparison with drinking water criteria. This flow is the 7Q10 for the receiving stream.

The following values were used to determine limits for the pollutants:

Hardness = 148 mg/l, based on the CPP.

TSS = 2.5 mg/l, based on the CPP

pH = 7.6 s.u., based on compliance data from "Arkansas Water Quality Inventory Report"305(b)

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 Water-effect ratio (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 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 APCEC Regulation No. 2, Section 2.508 for aquatic life protection are based on dissolved metals concentrations and hardness values. However, Federal Regulations cited at 40 CFR Part 122.45(c) require that effluent limitations for metals in discharge permits be expressed as total recoverable based on the CPP. Therefore a dissolved to the total recoverable metal conversion must be implemented. 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 and Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR Part 131.36.

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

The following pollutants were determined to be present in the effluent for each pollutant as reported by the permittee.

Pollutant	Concentration Reported, µg/l	MQL, µg/l
Copper, Total Recoverable	4.26	0.5
Zinc, Total Recoverable	30	20
Phenols, Total	26	5
Mercury, Total Recoverable	0.01374, additional tests show no detect*, assume zero	0.005

* On November 10, 2009, the facility submitted four additional tests for this parameter. Sampling was done on September 24, 2009, October 1, 2009, October 8, 2009, and October 15, 2009, using clean techniques. EPA test Method 1631E was used. All tests showed concentrations below MQL value of 0.005 µg/l.

ADEQ has determined from the information submitted by the permittee that no water quality standards or Gold Book criteria are exceeded for Copper, Zinc, Mercury, and Phenols. Therefore, no permit action is necessary to maintain standards or criteria for these parameters (See Attachment 1.)

14. WHOLE EFFLUENT TOXICITY.

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be

present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

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

TOXICITY TESTS
Chronic WET

FREQUENCY
Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs (ft³/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit.

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

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

$$Q_d = \text{Design flow} = 2.0 \text{ MGD} = 3.09 \text{ cfs}$$

$$7Q_{10} = 0 \text{ Cfs}$$

$$Q_b = \text{Background flow} = (0.67) \times 7Q_{10} = 0 \text{ cfs}$$

$$CD = (3.09) / (3.09 + 0) \times 100 = 100\%$$

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are **32%, 42%, 56%, 75%, and 100%** (See the CPP). The low-flow effluent concentration (critical dilution) is defined as **100%** effluent. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead minnow (*Pimephales promelas*) are 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/600/4-91/002, July 1994 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

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

Permit Number: AR0022004 AFIN: 44-00018 Outfall Number: 001
 Date of Review: 4/12/2010 Reviewer: M. Barnett
 Facility Name: Huntsville
 Previous Dilution series: 32,42,56,75,100 Proposed Dilution Series: 32,42,56,75,100
 Previous Critical Dilution: 100 Proposed Critical Dilution: 100
 Previous TRE activities: None

Frequency recommendation by species:

Pimephales promelas (Fathead minnow): once per quarter
Ceriodaphnia dubia (water flea): once per quarter

TEST DATA SUMMARY

TEST DATE	Vertebrate		Invertebrate	
	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC
Mar-05	100	100	100	100
Jun-05	100	100	100	100
Sep-05	100	100	100	100
Dec-05	100	100	100	100
Mar-06	100	100	100	100
Jun-06	100	100	100	100
Sep-06	100	100	100	100
Dec-06	100	100	100	31
Jan-07	100	100	100	100
Mar-07	100	100	100	100
Jun-07	100	100	100	100
Sep-07	100	100	100	100
Dec-07	100	100	100	100
Mar-08	100	100	100	100
Jun-08	100	100	100	100
Sep-08	100	100	100	100
Dec-08	100	100	100	100
Mar-09	100	100	100	100
Jun-09	100	100	100	75
Sep-09	100	100	100	100
Dec-09	100	100	100	100

Failures are noted in **BOLD**

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-Lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	100	100	100	31
TU at Min Observed	1.00	1.00	1.00	3.23
Count	21	21	21	21
Failure Count	0	0	0	2
Mean	1.000	1.000	1.000	1.122
Std. Dev.	0.000	0.000	0.000	0.488
CV	0	0	0	0.4
RPMF	#N/A	#N/A	#N/A	1.2
Reasonable Potential	#N/A	#N/A	#N/A	3.871

PERMIT ACTION

Although reasonable potential appears to exist for *C. dubia* sub-lethal, only one failure has been reported during the past three years, therefore WET limits are not required at this time.

City of Huntsville receives influent from an SIU. Occasionally the SIU has reported high TDS. However, Huntsville did not begin monitoring TDS until July 2009.

The receiving waterbody is listed as impaired due to TDS, therefore, the facility is receiving a new TDS limit with compliance schedule.

P. promelas lethal - monitoring
P. promelas sub-lethal - monitoring
C. dubia lethal - monitoring
C. dubia sub-lethal - monitoring

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)(1)]

Requirements for sample type and sampling frequency for flow, DO, FCB, pH, and Chronic WET testing have been based on the current discharge permit. Requirements for sampling frequency for CBOD5, TSS, NH3-N have also been based on the current discharge permit. The sampling frequency for Total Phosphorus has been revised from twice per month to once per week to be consistent with the monitoring frequencies for other parameters. The 3-hr sample type for CBOD5, TSS, and NH3-N has been replaced with composite sampling to allow the facility flexibility in how samples are taken.

The sampling frequency for Nitrate + Nitrite – Nitrogen have been reduced using EPA's *Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies*. This decrease in monitoring frequencies does not constitute backsliding based on 40 CFR 122.44 (1)(2)(i)(B)(1) since information is available which was not available at the time of permit issuance.

The requirements for a sample type and sampling frequency for Total Dissolved Solids are similar to those required for CBOD5.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	Once/day	Totalizing meter	Once/day	Totalizing meter
CBOD5	Once/week	3-hr composite	Once/week	composite
TSS	Once/week	3-hr composite	Once/week	composite
NH3-N				
(April-Oct)	Once/week	3-hr composite	Once/week	composite
(Nov-Apr)	Once/week	3-hr composite	Once/week	composite
Dissolved Oxygen	Once/week	Grab	Once/week	grab
FCB	Once/week	Grab	Once/week	grab
TP	Twice/month	Grab	Once/week	grab
NO ₃ + NO ₂ - N	Three/week	3-hr composite	Once/week	composite
TDS	N/A	N/A	Once/week	composite
pH	Once/week	Grab	Once/week	grab
Chronic WET Testing	Once/quarter	24-hr composite	Once/quarter	composite

16. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS.

In lieu of storm water pollution prevention plan requirements, the permittee submitted a “No exposure certification for exclusion from NPDES Storm water.” The tracking permit No. ARR000005 was assigned to this permittee.

17. PERMIT COMPLIANCE.

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

1. Compliance with the all the Interim Effluent Limits and the Final Effluent Limits except Total Phosphorus is required on the effective date of the permit.

Compliance with the Final Effluent Limits for Total Phosphorus is required one year from the effective date of the permit.

2. Total Dissolved Solids

This permit is issued for three years with a requirement for monitoring and reporting for Total Dissolved Solids. Before this permit is reissued, i.e., prior to or upon the expiration date, the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No. 2, CPP, the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports and progress reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and limits will be effective immediately upon the effective date of the renewal permit.

Within 60 days from the effective date of this permit, the Permittee shall submit to ADEQ a workplan addressing all options for achieving compliance with water quality standards for Total Dissolved Solids. These options must include, but are not limited to: source reduction, outfall relocation, treatment alternatives, and/or revision of the Arkansas Water Quality Standards. The workplan must include the chosen option along with alternative options in the event the chosen option is not successful. A milestone schedule must be included which outlines when the work will begin on the project, when the project is anticipated to be completed (not to exceed 3 years from the effective date), and interim dates for completion of significant steps in the project.

Upon approval by ADEQ, the submitted milestone schedule shall be incorporated into this permit by reference and will be enforceable. The workplan shall be signed in accordance with Part III.D.11 and submitted to the attention of:

Arkansas Department of Environmental Quality
Water Division
Discharge Permits Section
5301 Northshore Drive
North Little Rock, AR 72118-5317

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 draft and final permits:

- a. Application No. AR0022004 received 3/31/2009.
- 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. Act 1061 of 2003(codified at Ark. Code Ann. &15-20-1104).
- h. Discharge permit file AR0022004.
- i. Discharge Monitoring Reports (DMRs).
- j. "Arkansas Water Quality Inventory Report 2008 (305B)", ADEQ.
- k. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.
- l. Continuing Planning Process (CPP).
- m. Technical Support Document For Water Quality-based Toxic Control.
- n. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR Part 131.36.
- o. Town Branch and Holman Creek. TMDL for Nitrate. US EPA Region 6 with cooperation from the ADEQ, December 8, 2008.
- p. Inspection Report dated April 17, 2009.
- q. E-mail dated July 13, 2009, from Chris Roberts to Marysia Jastrzebski.
- r. E-mail dated July 2, 2009, from Allen Gilliam to Marysia Jastrzebski.
- s. E-mail dated June 10, 2009, from Anne Roberts to Marysia Jastrzebski.
- t. E-mail dated July 16, 2009, from Jennifer Harmon to Marysia Jastrzebski.
- u. Sit visit report dated July 22, 2009.
- v. Letter dated November 7, 2009, from Bill Eoff to Marysia Jastrzebski.
- w. Request for a Public Hearing dated June 7, 2010, from Stephen M. Valesko.
- x. Comment Letter dated June 7, 2010, from Larry Garrett to Steven Drown.
- y. Written comments submitted by the Poultry Federation and oral comments by Mr. Marvin Childers, President.
- z. Written comments submitted by Alan D. Fortenberry, P. E., Chief Executive Officer, Beaver Water District.

- aa. Written comments submitted by Stephen M. Valesko, V. P. Engineering, Butterball and oral comments by Bill Folk, Huntsville Complex Manager.
- bb. Written and oral comments submitted by Larry Garrett, Director, Huntsville Water Utilities.
- cc. Written and oral comments submitted by Honorable Larry Bates, Mayor of the City of Huntsville.
- dd. Oral comments submitted by Robert Kossieck, President of the Northwest Arkansas Property Rights Association.
- ee. Meeting with the permittee on August 24, 2010.
- ff. Letter dated September 14, 2010, from Larry Garrett to Marysia Jastrzebski.
- gg. Letter received on October 25, 2010, from Larry Garrett to Mo Shafii.
- hh. Letter dated February 25, 2011, from Kevin Hatfield, Mayor, City of Huntsville.
- ii. Letter dated February 25, 2011, from Colene Gaston, Staff Attorney, Beaver Water District to Marysia Jastrzebski.

20. POINT OF CONTACT.

For additional information, contact:

Marysia Jastrzebski, P.E.
Permits Branch, Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (870)446-5939

**RESPONSE TO COMMENTS
FINAL PERMITTING DECISION**

Response to comments received on the subject draft permit in accordance with regulations promulgated at 40 CFR Part 124.17 and Regulation No. 8 are as follows:

Permit No.: AR0022004
Applicant: City of Huntsville
Prepared by: Marysia Jastrzebski
Public Notice Date: The draft permit was publicly noticed on or about January 27, 2010.
Date Prepared: March 31, 2011

The following changes were made in response to the submitted comments:

1. The requested correction (sludge is stabilized by lime stabilization not aerobic digestion) has been made both in paragraph 11 on Page 17 of Fact Sheet and in the Condition 3.3 of Part II of the final permit (see Issue #2)
2. Paragraph 2 on Page 1 of Part IB was made consistent with Condition 10 of Part II of the final permit (see Issue #4)

The following comments were received on the draft permit:

- a. Letter dated February 25, 2011, from Kevin Hatfield, Mayor, City of Huntsville to Marysia Jastrzebski (Issues 1 and 2)
- b. Letter dated February 25, 2011, from Colene Gaston, Staff Attorney, Beaver Water District to Marysia Jastrzebski (Issues 3 through 7)

The permittee submitted the following comments:

ISSUE #1

“Section B. Permit Compliance

Paragraph 1. states that compliance with all of the Interim Effluent Limits and the Final Effluent Limits except Total Phosphorus required on the effective date of the permit.

Paragraph 2. provides for the submission by the City within 60 days of a work plan addressing three suggested options for achieving compliance for water quality standards for Total Dissolved Solids. The City intends to meet that submission deadline. However, pursuing either of the options does present potential time related problems. The City will proceed with a third party rulemaking in order to seek a revision of the Arkansas Water Quality Standards. A cost sharing

agreement to fund the consultant, GBMc, for this purpose has been entered into with the Butterball Turkey Company. However, the City is not in a position to predict the ultimate result that will ensue from the third party rule making effort. A substantial period of time will be consumed while it is undertaken. The City deems it necessary to state that compliance with the Final Effluent Limits with respect to Total Dissolved Solids may not be possible to attain during the three year period of this Interim Permit if the third party rule making does not achieve a revision of the Arkansas Water Quality Standards. Outfall relocation will entail engineering design, financial underwriting, land acquisition and construction which will require substantial time periods if they become necessary under this permit. Source reduction will require the City to impose and enforce a Total Dissolved Solids limit on the Butterball Turkey Company through its industrial user permitting process which will inevitably take a reasonable, but unpredictable, amount of time to accomplish.

Therefore, the City raises the above by way of timely reserving its rights to object to the Total Dissolved Solids effluent limits being unduly enforced due to the impossibility of compliance which may result from the City's good faith reliance on the terms and conditions stated in Section B, Paragraph 2.

The City will make every effort to accomplish the goals specified in the permit, as it is the policy of the City of Huntsville, Arkansas, to be a competent steward of the environment it occupies. However, the potential economic impacts delineated in the comments previously submitted to the Department of Environmental Quality continue to exist as contingencies of which the City must be cognizant.”

RESPONSE #1

The Department acknowledges this comment and understands that the permittee has the right to object to any condition of this or any future permit. However, Reg. 2.104, requires compliance with new water quality limits at the earliest practicable time not to exceed three years from the effective date of the permit. Therefore, no further extensions will be allowed in the permit regardless of which particular option the permittee will choose.

ISSUE #2

“The Fact Sheet, page 18, Section 11 states as follows: "Sewage sludge is stabilized by aerobic digestion and further stabilized and dried in sludge drying beds before being land applied at the following approved land application sites:" The City desires that the record of this permit accurately reflect that sewage sludge is not stabilized by aerobic digestion but rather by the process of lime stabilization.”

RESPONSE #2

The Department agrees. The requested correction has been made both in paragraph 11 on Page 17 of Fact Sheet and in the Condition 3.3 of Part II of the final permit.

Beaver Water District (BWD) submitted the following comments:

ISSUE #3

“Comment 1 re Deletion of the Final Effluent Limitation for Total Dissolved Solids (TDS):

The First Draft Permit required that TDS be monitored and reported for the first three years and thereafter be limited to a monthly average of 6,488.5 pounds per day. The Second Draft Permit at Pages 1-3 of Part I.A requires only that TDS be monitored and reported for the three year term of the permit. Given that Holman Creek is listed as impaired for TDS on the 2008 303 (d) list, BWD questions whether the issuance of a permit that does not contain numeric effluent limitations for TDS is permissible under Arkansas Pollution Control and Ecology Commission (APCEC) Regulation No. 2, § 2.201 and under 40 C.F.R. §§ 122.4(a), (d), and (g), which are incorporated by reference in APCEC Regulation No.6. § 6.104(A)(3).”

RESPONSE #3

The Department acknowledges this comment, however, Reg. 2.104 allows a reasonable time (up to three years) for an existing facility to comply with new or revised water quality effluent limits. Therefore, the final permit is in compliance with Reg. 2. Additionally, the final permit does not violate requirements contained in 40 CFR 122.4(a), (d), and (g).

No changes were made in the final permit.

ISSUE #4

“Comment 2 re Permit Compliance Schedule for TDS: The Second Draft Permit at § I.B.2 on Page 1 of Part I.B requires the permittee within 60 days of the effective date of the permit to submit a Workplan with a milestone schedule that addresses options for achieving compliance with the water quality standards for TDS. The provisions are repeated at § II.10 on Pages 23-24 of Part II. Section 11.10, however, contains the following additional provisions:

This permit is issued for three years with a requirement for monitoring and reporting for Total Dissolved Solids. At the end of three years and before the permit is reissued the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No.2, CPP, the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and limits will be effective immediately upon the effective date of the permit.

First, and subject to Comment 1 above, should ADEQ issue a final permit without numeric effluent limitations for TDS, BWD requests that the above quoted language be modified as follows:

This permit is issued for three years with a requirement for monitoring and reporting for Total Dissolved Solids. ~~At the end of three years and before the permit is reissued~~ least six months prior to the expiration of the permit, the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No.2, CPP, the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and limits will be effective immediately upon the effective date of the renewal permit. The Department will initiate the permit renewal process in a manner calculated to produce a final permit close in time to the expiration date of the current permit.

The suggested changes are aimed at making it clear that the approach taken in the Second Draft Permit regarding TDS is not intended to circumvent the requirement of APCEC Regulation No.2, § 2.104 that schedules of compliance for water quality based effluent limitations shall not exceed three years.

Second, BWD requests that the quoted language with suggested revisions be incorporated at § I.B.2 on Page 1 of Part I. B. This language needs to be included where the compliance schedule is first discussed, instead of being tucked away at Pages 23-24 of Part II of the permit.”

RESPONSE #4

The Department partially agrees. As requested, the Department added the word “renewal” to “permit” to make it clear to which permit it was referring. The other requested changes were not made. Based on the requirements of state and federal regulations, the complete application must be submitted at least 180 days before the expiration date of this permit. At that time, the Department will initiate the renewal process. In order to clarify this matter the words “At the end of three years” were deleted. After these changes, the paragraph now reads as follows:

“This permit is issued for three years with a requirement for monitoring and reporting for Total Dissolved Solids. ~~At the end of three years and b~~ Before the permit is reissued the Department will re-evaluate the need for inclusion of effluent limitations for this parameter after reviewing the most current Regulation No. 2, CPP, the 303(d) list of the impaired streams, and the submitted Discharge Monitoring Reports and the progress reports. If it is determined that effluent limitations for this parameter are required, no schedule of compliance to meet these limitations will be allowed and limits will be effective immediately upon the effective date of the renewal permit.”

As requested, this paragraph was also included on Page 1 of Part IB of the final permit.

ISSUE #5

“Comment 3 re Workplan required by Compliance Schedule for TDS: As discussed above, the Second Draft Permit at § 1.B.2 on Page 1 of Part I.B requires the permittee within 60 days of the effective date of the permit to submit a Workplan with a milestone schedule that addresses options for achieving compliance with the water quality standards for TDS. Section I.B.2 also

provides that, "These options include, but are not limited to: source reduction, outfall relocation and/or revision of the Arkansas Water Quality Standards."

First, and again subject to Comment 1 above, BWD requests that Section I.B.2 be modified to include a requirement that any study or report under the Workplan aimed at revision of the Arkansas Water Quality Standards (WQS) must also analyze the impact upon Beaver Lake of any changes to the WQS of the receiving stream. TDS, chlorides, and sulfates are all conservative constituents of a water system. In other words, they do not assimilate into or disappear from the system, but are carried on downstream. Conventional drinking water treatment does not remove TDS.

Appropriate water quality models of Beaver Lake exist to analyze the impact of any proposed revision of the WQS of the receiving stream on the Lake over seasonal and annual time frames. The United States Geological Survey (USGS) in 2006 developed a Beaver Lake model based on the CE-QUAL-W2 model, a two-dimensional water quality model and hydrodynamic model. This model has been peer reviewed and subsequently published.

Second, should any study or report under the Workplan include calculation of effluent discharge limitations for TDS, chlorides, or sulfates, those calculations should not utilize the arbitrary and unsupported critical flow of four (4) cfs. Because the Q7-10 for the receiving stream is zero and because the receiving stream is in the watershed of a drinking water supply reservoir, BWD suggests that a critical flow of zero should be utilized in calculating the limits. At the very least, the values from the USGS gage at Hindsville should be utilized. The receiving stream, Town Branch, is a tributary of a tributary to War Eagle Creek upstream from the Hindsville gage. According to the USGS Report, "Low-Flow Characteristics and Regionalization of Low-Flow Characteristics for Selected Streams in Arkansas," the 7Q10 flow for War Eagle Creek at Hindsville is 2.2 cfs."

RESPONSE #5

The Department acknowledges this comment. Procedures for modification of water quality criteria not affecting the fishable/swimmable use (if this is the option the permittee chooses to explore) are defined by Reg. 2.306 and the CPP. No additional criteria needs to be provided in this NPDES permit. Furthermore, any calculations of permit limits for minerals must be in accordance with the approved CPP along with the provisions and water quality standards in Regulation No. 2 active at the time of permit issuance.

No changes were made in the final permit.

ISSUE # 6

"Comment 4 re Interim and Final Effluent Limitations for Total Phosphorus (TP): BWD objects to giving the permittee yet another year from the effective date of the final permit before it has to meet the final effluent limitations for TP (see Pages 1 and 3 of Part I.A and Page 1 of Part I.B. of the Second Draft Permit). Even though the language regarding the one year compliance schedule for TP did not change from the First to the Second Draft Permit, the delay in the issuance of the

final permit as applied to the implementation of this provision means a substantive change in the permit requirements. Therefore, BWD can not be barred from commenting on this provision in the Second Draft Permit.

A brief recounting of the history of the Huntsville NPDES Permit is helpful to understand why BWD is raising this issue at this time. The current permit was sent to the City on or about August 31, 2004. Included in the Final Fact Sheet accompanying the current permit was the statement on Page 6 that "Effluent Limitations for Total Phosphorus will be included in the next NPDES permit." Therefore, the City has known that it would be subject to a TP limit for at least six and a half years. The construction of wastewater treatment facilities to remove phosphorus was completed by approximately November 2008. The final effluent limitations for TP in the Second Draft Permit have been achievable since at least 2009 with the treatment system in place at the plant.

The current permit expired September 30, 2009. The First Draft Permit was issued on or about May 15, 2010. The First Draft Permit had a one year compliance schedule for meeting the final effluent limitations for TP. Had the First Draft Permit been finalized in a timely manner, the final effluent limitations for TP would have become effective around September 2011. It now appears that unless the terms of the Second Draft Permit are modified, the final effluent limitations for TP will not become effective until April 2012 at best. Therefore, BWD requests that the terms of the final permit require compliance with the final effluent limitations for TP within three (3) months of the effective date of the final permit or by September 1, 2011, whichever comes later. Forty C.F.R. § 122.47(a)(1), which is incorporated by reference in APCEC Regulation No.6, § 6.104(A)(3), applies to the use of compliance schedules in NPDES permits and requires that effluent limitations must be met "as soon as possible." For the reasons outlined above, as soon as possible really is now.

The Beaver Lake watershed was declared to be a Nutrient Surplus Area by Act 1061 of 2003 (codified at Ark. Code Ann. § 15-20-1104). As stated in BWD's comments on the First Draft Permit, current research shows the upper one-third (1/3) of Beaver Lake to be eutrophic or to have an overabundance of algae. (See, e.g., Koller Iriarte, Monica A., 2007, Trophic Conditions and Nutrient Limitations in the Headwaters of Beaver Lake, Arkansas, During a Dry Hydrologic Year, 2005-2006, Masters Abstracts International, Vol. 45, No. 04). Algae content, as expressed by Chlorophyll-a, has also been shown to be directly related to both TP and Total Nitrogen (Koller Iriarte, 2007). Because of algae, BWD experiences episodic taste and odor events in the drinking water. These algal blooms can also cause operational problems for our treatment processes, such as the clogging of our filters. In addition and also related to the nutrient levels in the lake, BWD is seeing an increase in disinfection byproducts precursors in the water at our intake. When chlorinated, these precursors form disinfection byproducts (DBPs). DBPs are strictly regulated under the Safe Drinking Water Act, with the DBP limits becoming even more stringent in 2012. BWD is in the process of designing new disinfection facilities in order to comply with the more stringent DBP regulations. The cost of these facilities and the cost for BWD and its customer cities to maintain compliance with the 2012 DBP standards is expected to be significant. It is, therefore, particularly important to BWD that there be no further delay in the operation of the Huntsville wastewater treatment facilities to remove phosphorus to meet the final effluent limitations."

RESPONSE #6

The Department acknowledges this comment, however, no changes were made to the Total Phosphorus (TP) interim and final effluent limits or the Schedule of Compliance from the first draft permit public noticed on May 13, 2010 to the second draft permit public noticed on January 27, 2011. As outlined in the public notice for the second draft permit in accordance with 40 CFR 124.14(b) and (c), only the changes from the first draft permit were open for public comment. Since the TP limits were not open for public comment, a response to this comment will not be provided.

No changes were made to the final permit.

ISSUE # 7

“Comment 5 re Increase in Frequency of Interim and Final Effluent Monitoring Requirements for TP: BWD supports the increase in the frequency of monitoring for TP from twice per month to once per week (see Pages 1 and 3 of Part I.A. in the Second Draft Permit). This change brings this permit more in line with the permits issued to other municipal dischargers in Northwest Arkansas. Also, given the concerns related to nutrients in the Beaver Lake watershed set forth in Comment 4 above, it seems reasonable and prudent that Huntsville be required to monitor for TP at least once per week. Weekly TP monitoring is not unduly burdensome or expensive.”

RESPONSE #7

The Department acknowledges this comment.