

Permit number: AR0043397

**AUTHORIZATION TO DISCHARGE 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.),

City of Rogers
4300 Rainbow Rd.
Rogers, AR 72758

is authorized to discharge from a facility located at 4300 Rainbow Road, 2.7 miles south of the intersection of SE Walton Boulevard and SE "C" Street in Bentonville, Arkansas in Sections 19 and 30, Township 19 North, Range 30 West in Benton County, Arkansas

Latitude: 36° 17' 53"; Longitude: 94° 12' 50"

to receiving waters named:

Outfall 001: Osage Creek, thence to the Illinois River, thence to the Arkansas River in Segment 3J of the Arkansas River Basin. Latitude: 36° 18' 07"; Longitude: 94° 12' 58"

Outfall 002: Pinnacle Golf Course – "C" Lake; Latitude: 36° 17' 57"; Longitude: 94° 12' 04"

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

The response to comments is attached to this final permit.

This permit shall become effective on March 1, 2006

This permit and the authorization to discharge shall expire at midnight, February 28, 2011

Signed this 31st day of January 2006

Martin Maner, P.E.
Chief, Water Division
Arkansas Department of Environmental Quality

**PART I
PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 (design flow of 6.7mgd)
- treated municipal wastewater

During the period beginning on the effective date of the permit, and lasting until date of expiration, the permittee is authorized to discharge from outfall serial number 001. Such discharges shall be limited and monitored by the permittee as specified below:

<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 ¹	N/A	Report	Report	Daily	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)					
(May-Oct)	558.8	10	15	Once/week	24-hr composite
(Nov-Apr)	1117.6	20	30	Once/week	24-hr composite
Total Suspended Solids (TSS)					
(May-Oct)	838.2	15	23	Once/week	24-hr composite
(Nov-Apr)	1117.6	20	30	Once/week	24-hr composite
Ammonia Nitrogen (NH ₃ -N)					
(April)	134.1	2.4	5.7	Once/week	24-hr composite
(May-Oct)	83.8	1.5	2.3	Once/week	24-hr composite
(Nov-March)	223.5	4	6	Once/week	24-hr composite
Dissolved Oxygen ²					
(May-Oct)	N/A	7.9 Min	N/A	Three/week	Continuous
(Nov-April)	N/A	10 Min	N/A	Three/week	Continuous
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	200	400	Three/week	Grab
Total Residual Chlorine (TRC) ³	N/A	0.1 mg/l (Inst. Max.)		Three/week	Continuous
Phosphorus, Total	55.9	1	2	Once/week	24-hr composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Three/week	Continuous
<u>Whole Effluent Toxicity Lethality</u> <u>(7-day NOEC)^{4,5}</u> 2241	<u>Daily Average Minimum</u>		<u>7-day Minimum</u>	Once/quarter	24-hr composite
	not < 68 %		not < 68%		

<u>Pimephales promelas (Chronic)</u> ⁴ Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C		<u>7-Day Average</u> Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
<u>Ceriodaphnia dubia (Chronic)</u> ⁴ Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail Production (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B Reproduction (7-day NOEC) TPP3B		<u>7-Day Average</u> Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite

1 Report monthly average and daily maximum as MGD. See Condition No. 12 of Part III.

2 The monthly average Dissolved Oxygen must be equal or above the specified limit.

3. See Condition No. 10 of Part III.

4 See Condition No. 9 of Part III.

5 The daily average lethality and 7-day minimum lethality (7-day NOEC) value shall not be less than **68** % effluent. The daily average lethality (7-day NOEC) value is defined as the greatest effluent concentration which does not elicit **lethality** that is statistically different from the control (0% effluent) at the 95% confident level.

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. No visible sheen (Sheen means an iridescent appearance on the surface of the water).

Samples taken in compliance with the monitoring requirements specified above shall be taken at the discharge from the final treatment unit.

**PART I
PERMIT REQUIREMENTS**

SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 (design flow of 14 mgd) - treated municipal wastewater

During the period beginning the effective date of the permit and, and lasting until date of expiration, the permittee is authorized to discharge from outfall serial number 001. Such discharges shall be limited and monitored by the permittee as specified below:

<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 ¹	N/A	Report	Report	Daily	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	1,168	10	15	Three/week	24-hr composite
(Nov-Apr)	1,751	15	23	Three/week	24-hr composite
Total Suspended Solids (TSS)					
(May-Oct)	1,751	15	23	Three/week	24-hr composite
(Nov-Apr)	2,335	20	30	Three/week	24-hr composite
Ammonia Nitrogen (NH3-N)					
(April)	234	2.0	4.5	Three/week	24-hr composite
(May-Oct)	175	1.5	2.3	Three/week	24-hr composite
(Nov-March)	350	3.0	4.5	Three/week	24-hr composite
Dissolved Oxygen ²					
(May-October)	N/A	7.9 Min	N/A	Three/week	Continuous
(Nov-April)	N/A	10 Min	N/A	Three/week	Continuous
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	200	400	Three/week	Grab
Total Residual Chlorine (TRC) ³	N/A	0.1 mg/l (Inst. Max.)		Three/week	Continuous
Phosphorus, Total	117	1	2	Three/week	24-hr composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Three/week	Continuous
<u>Whole Effluent Toxicity Lethality</u> (7-day NOEC)^{4,5} 2241	<u>Daily Average Minimum</u>		<u>7-day Minimum</u>	Once/quarter	24-hr composite
	not < 82 %		not < 82%		

<u>Pimephales promelas (Chronic)</u> ⁴ Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C		<u>7-Day Average</u>		
		Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
<u>Ceriodaphnia dubia (Chronic)</u> ⁴ Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail Production (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B Reproduction (7-day NOEC) TPP3B		<u>7-Day Average</u>		
		Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report (Pass=0/Fail=1)	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite
		Report %	Once/quarter	24-hr composite

1 Report monthly average and daily maximum as MGD. See Condition No. 12 of Part III.

2 The monthly average Dissolved Oxygen must be equal or above the specified limit.

3. See Condition No. 10 of Part III.

4 See Condition No. 9 of Part III.

5 The daily average lethality and 7-day minimum lethality (7-day NOEC) value shall not be less than **82 %** effluent. The daily average lethality (7-day NOEC) value is defined as the greatest effluent concentration which does not elicit **lethality** that is statistically different from the control (0% effluent) at the 95% confident level.

* Five/week-Monday-Friday

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. No visible sheen (Sheen means an iridescent appearance on the surface of the water).

Samples taken in compliance with the monitoring requirements specified above shall be taken at the discharge from the final treatment unit.

**PART I
PERMIT REQUIREMENTS**

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

During the period beginning on the effective date of the permit and lasting until date of expiration, the permittee is authorized to discharge from outfall serial number 002. Such discharges shall be limited and monitored by the permittee as specified below:

<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 ¹	N/A	Report	Report	Daily	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	N/A	10	15	Once/week	24-hr composite
Total Suspended Solids (TSS)	N/A	15	23	Once/week	24-hr composite
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	200	400	Once/week	Grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Three/week	Continuous

1 Report monthly average and daily maximum as MGD.

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. No visible sheen (Sheen means an iridescent appearance on the surface of the water).

Samples taken in compliance with the monitoring requirements specified above shall be taken at the discharge from the final treatment unit and prior to discharge to Pinnacle Golf Course "C" Lake. The sample taken for compliance with Outfall 001 monitoring requirements can be used for compliance with monitoring requirements at Outfall 002.

SECTION B. SCHEDULE OF COMPLIANCE

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

Outfalls 001 and Outfall 002:

Compliance is required on the effective date of the permit.

PART II 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; or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report 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 ten thousand dollars (\$10,000) 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 condition II 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 II. A.3., if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Regulation No. 2, as amended, (regulation establishing water quality standards for surface waters of the State of Arkansas) 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 Regulation No. 2 (Arkansas Water Quality Standards), 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 II.B.4.a.), and “Upsets” (Part II.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 be 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 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 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 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 Part 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 II.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 II.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 II.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 base permit effluent limitations if the requirements of Part II.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 II.D.6.: and
- (4) The permittee complied with any remedial measures required by Part II.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). 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's signed and certified as required by Part II.d.11 and all other reports required by Part II.D. (Reporting Requirements), shall be submitted to the Director at the following address:

NPDES Enforcement Section
Water Division
Arkansas Department of Environmental Quality
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913

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 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. **Retention of Records**

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

8. **Record Contents**

Records and monitoring information shall include:

- a. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were formed;
- 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:

For Industrial Dischargers

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Part 122.29(b).
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40CFR Part 122.42 (a)(1).

For POTW Dischargers:

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 II.C.5. (Reporting). **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.
- c. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

7. **Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Part II.D.4,5 and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part II.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, in a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the “notification levels” described in 40 CFR Part 122.42(a)(1).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit if that discharge will exceed the highest of the “notification levels” described in 40 CFR Part 122.42(a)(2).

9. **Duty to Provide Information**

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

10. **Duty to reapply**

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

11. **Signatory Requirements**

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

- 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 Regulation 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 II.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 III
OTHER CONDITIONS**

1. The operator of this wastewater treatment facility shall be licensed by the State of Arkansas in accordance with Act 211 of 1971, Act 1103 of 1991, Act 556 of 1993, and Regulation No. 3, as amended.
2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR 133.102, as adopted by reference in APCEC Regulation No. 6.
3. Produced sludge shall be disposed of by land application only when meeting the following criteria:
 - a. Sewage sludge from treatment works treating domestic sewage (TWTDS) must meet the applicable provisions of 40 CFR Part 503; and
 - b. The sewage sludge has not been classified as a hazardous waste under state or federal regulations.
4. The permittee shall give at least 120 days prior notice to the Director of any change planned in the permittee's sludge disposal practice or land use applications, including types of crops grown (if applicable).
5. The permittee shall report all overflows with the Discharge Monitoring report (DMR) submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: the date, time, duration, location, estimated volume, and cause of overflow; observed environmental impacts from the overflow; action taken to address the overflow; and ultimate discharge location if not contained (e.g., storm sewer system, ditch, tributary.) Overflows which endanger health or the environment shall be orally reported to this department (Enforcement Section of Water Division), within 24 hours from the time the permittee becomes aware of the circumstance. A written report of overflows which endanger health or the environment, shall be provided within 5 days of the time the permittee becomes aware of the circumstance.
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 water body, or a Total Maximum Daily Load (TMDL) is established or revised for the water body that were not available at the time of permit

issuance that would have justified the application of different permit conditions at the time of permit issuance.

7. Contributing Industries and Pretreatment Requirements

- A. The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the approved POTW pretreatment program submitted by the permittee. The pretreatment program was approved on **January 13, 1984**. The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:
1. Industrial user information shall be updated at a frequency adequate to ensure that all IUs are properly characterized at all times.
 2. The frequency and nature of industrial user compliance monitoring activities by the permittee shall be commensurate with the character, consistency and volume of waste. However, in keeping with the requirements of 40 CFR 403.8(f)(2)(v), the permittee must inspect and sample the effluent from each Significant Industrial User at least once a year. This is in addition to any industrial self-monitoring activities;
 3. The permittee shall enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements.
 4. The permittee shall control through permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users identified as significant under 40 CFR 403.3(t), this control shall be achieved through permits or equivalent individual control mechanisms issued to each such user. Such control mechanisms must be enforceable and contain, at a minimum, the following conditions:
 - a. Statement of duration (in no case more than five years);
 - b. Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
 - c. Effluent limits based on applicable general pretreatment standards, categorical pretreatment standards, local limits, and State and local law;

- d. Self-monitoring, sampling, reporting, notification and recordkeeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in 40 CFR 403, categorical pretreatment standards, local limits, and State and local law;
 - e. Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines.
- 5. The permittee shall evaluate, at least once every two years, whether each Significant Industrial User needs a plan to control slug discharges. If the POTW decides that a slug control plan is needed, the plan shall contain at least the minimum elements required in 40 CFR 403.8 (f)(2)(v).
 - 6. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and,
 - 7. The approved program shall not be modified by the permittee without the prior approval of the Department.
- B. The permittee shall establish and enforce specific limits to implement the provisions of 40 CFR Parts 403.5(a) and (b), as required by 40 CFR Part 403.5(c). Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

The permittee shall, within sixty(60) days of the effective date of this permit,(1) submit a **written certification** that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, **or** (2) submit a **written notification** that a technical evaluation revising the current TBLL and a final sewer use ordinance which incorporates such revisions will be submitted within 12 months of the effective date of this permit.

All specific prohibitions or limits developed under this requirement are deemed to be conditions of this permit. The specific prohibitions set out in 40 CFR Part 403.5(b) shall be enforced by the permittee unless modified under this provision.

- C. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D (NPDES

Application Testing Requirements) Table II at least **once per year** and the toxic pollutants in Table III at least **once per quarter**. If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least **once per year** on both the influent and effluent.

1. The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR 136. Where composite samples are inappropriate, due to sampling, holding time, or analytical constraints, at least four (4) grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.
- D. The permittee shall prepare annually a list of Industrial Users which during the preceding twelve months were in significant noncompliance with applicable pretreatment requirements. For the purposes of this Part, significant noncompliance shall be determined based upon the more stringent of either criteria established at 40 CFR Part 403.8(f)(2)(vii) [rev. 7/24/90] or criteria established in the approved POTW pretreatment program. This list is to be published annually in the largest daily newspaper in the municipality during the month of January.

In addition, by February 15th the permittee shall submit an updated pretreatment program status report to ADEQ containing the following information:

1. An updated list of all significant industrial users. For each industrial user listed, the following information shall be included:
 - a. Standard Industrial Classification (SIC) code and categorical determination.
 - b. Control document status. Whether the user has an effective control document, and the date such document was last issued, reissued, or modified, (indicate which industrial users were added to the system (or newly identified) within the previous 12 months).
 - c. A summary of all monitoring activities performed within the previous 12 months. The following information shall be reported:

- (1) total number of inspections performed;
 - (2) total number of sampling visits made;
 - d. Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:
 - (1) Compliant (C) - no violations during the previous 12 month period;
 - (2) Non-compliant (NC) - one or more violations during the previous 12 months but does not meet the criteria for significant noncompliant industrial users.
 - (3) Significant Noncompliance (SN) - in accordance with requirements described in d. above.
 - e. For significantly noncompliant industrial users, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If ANY industrial user was on a schedule to attain compliance with effluent limits, indicate the date the schedule was issued and the date compliance is to be attained.
2. A list of all significant industrial users whose authorization to discharge was terminated or revoked during the preceding 12 month period and the reason for termination.
 3. A report on any interference, pass through, upset or POTW permit violations known or suspected to be caused by industrial contributors and actions taken by the permittee in response.
 4. The results of all influent, effluent analyses performed pursuant to paragraph (c) above;
 5. A copy of the newspaper publication of the significantly noncompliant industrial users giving the name of the newspaper and the date published; and
 6. The information requested may be submitted in tabular form as per the example tables provided for your convenience (See Attachments A, B and C); and

7. The monthly average water quality based effluent concentration necessary to meet the state water quality standards as developed in the approved technically based local limits.
- E. 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 Section 301 and 306 of the Act if it were directly discharging those pollutants; and
 2. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

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

8. ADDITIONAL CONDITIONS FOR LAND APPLICATION OF BIOSOLIDS

A. GENERAL REQUIREMENTS:

1. Only biosolids which are not classified as a hazardous waste under state or federal regulations may be land applied.
2. 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.
3. Biosolids with Polychlorinated Biphenyls (PCB's) concentrations equal or greater than 50 mg/kg (dry basis) will not be land applied at any time.
4. CEILING CONCENTRATIONS (milligrams per kilogram, dry weight basis): If the biosolids to be land applied exceed any of the pollutant concentrations listed below, the biosolids **may not** be land applied.

<u>Pollutant</u>	<u>Ceiling Concentrations</u>
Arsenic	75
Cadmium	85
Copper	4300
Lead	840

Mercury	57
Nickel	420
Selenium	100
Zinc	7500

5. **CUMULATIVE CONCENTRATION LIMITS:** When the cumulative amount of any pollutant land applied to a specific site exceeds any of the loading rates listed below, no more biosolids may be land applied the specific site.

Cumulative Pollutant

<u>Element</u>	<u>Loading Rate</u>	
	<u>kg/ha (lbs/ac)</u>	
Arsenic	41	(37)
Cadmium	39	(35)
Copper	1500	(1350)
Lead	300	(270)
Mercury	17	(15)
Nickel	420	(378)
Selenium	100	(90)
Zinc	2800	(2520)

6. The biosolids generator must issue a signed certification stating that the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits have been met for each time the biosolid is released for disposal. The State requirements on Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits are the same as those listed in Federal; Regulation 40 CFR Part 503. All the above information must be made available to the land applicator before the material is delivered. Concurrently, a signed copy of each certification must be also submitted to ADEQ's Water Division.
7. The containers used for the transportation of the biosolids must be of the closed type.
8. 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.
9. Transportation equipment must be leak-proof and kept in a top sanitary conditions at all times. Biosolids must be enclosed or covered as to prevent littering, vector attraction, or any other nuisances.

10. 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.
11. Biosolids will be spread evenly over the application area and in no way biosolids will be allowed to enter the waters of the State.
12. 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.
13. The permittee will take all necessary measures to reduce obnoxious and offensive odors. Equipment will be maintained and operated to prevent spillage and leakage.
14. Disposal of biosolids in a floodplain will not restrict the flow of the base flood, reduce the temporary storage capacity of the floodplain, or result in a washout of solid waste, so as to pose a hazard to human life, wildlife or land and water uses.
15. Biosolids will not be spread within 25 feet of rock outcrops; 50 feet of property lines; 200 feet of drinking water well; 100 feet of lakes, ponds, springs, streams, wetlands, and sinkholes; 300 feet of occupied buildings and streams classified as an "extraordinary resource stream."
16. All new land application sites must have a waste management plan approved by the Department prior to land application of biosolids. This may require a permit modification.

B. MONITORING AND REPORTING REQUIREMENTS:

1. The permittee will be responsible for the biosolids analyses, soil analyses, and a reporting schedule that must include the following:
 - a. Biosolids Analysis
 - (1) Biosolids samples collected must be representative of the treated biosolids to be land applied. The samples are to be stored in appropriate glass or plastic containers and kept refrigerated or frozen to prevent any change in composition.

- (2) Quarterly grab 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 Nitrogen	Total Potassium
Nitrite Nitrogen	Ammonia Nitrogen
Arsenic	Cadmium
Chromium	Copper
Lead	Mercury
Nickel	Selenium
Zinc	pH (SU)

b. Soils Analysis

- (1) Each land application site will be soil tested in the Spring prior to application for the following parameters:

Nitrate-Nitrogen	Potassium
Phosphorus	Magnesium
Arsenic	Cadmium
Copper	Lead
Selenium	Mercury
Nickel	pH
Zinc	C.E.C.
Electrical Conductivity	

c. Reporting

- (1) 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 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.

- (2) The permittee will also maintain copies of the above records for Department personnel review at the biosolids generating facility.

9. WHOLE EFFLUENT TOXICITY TEST REQUIREMENT (WET Limits, 7 DAY CHRONIC, FRESHWATER)

1. SCOPE AND METHODOLOGY

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

APPLICABLE TO OUTFALL(S):	001(design flow of 6.7 mgd)
REPORTED ON DMR AS OUTFALL:	TX1Q
CRITICAL DILUTION:	68 %
EFFLUENT DILUTION SERIES:	29%, 38%, 51%, 68%, 89%
TEST SPECIES/METHODS:	40 CFR Part 136

APPLICABLE TO OUTFALL(S):	001(design flow of 14 mgd)
REPORTED ON DMR AS OUTFALL:	TX1Q
CRITICAL DILUTION:	82 %
EFFLUENT DILUTION SERIES:	26%, 35%, 46%, 62%, 82%
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA/600/4-91/002 or the most recent update thereof. This test should be terminated when 60% of the surviving adults in the control produce three broods.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA/600/4-91/002, 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 defined as the greatest effluent dilution at and below which lethality 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.
- c. When the testing frequency stated above is less than monthly and the effluent fails the survival endpoint at the critical dilution, the permittee shall be considered in violation of this permit limit and the frequency for the affected species will increase to monthly until such time compliance with the Lethal No Observed Effluent Concentration (NOEC) effluent limitation is demonstrated for a period of three consecutive months, at which time the permittee may return to the testing frequency stated in Part I of this permit. During the period the permittee is out of compliance, test results shall be reported on the DMR for that reporting period.
- d. This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.
- e. Test failure is defined as a demonstration of statistically significant sub-lethal or lethal effects to a test species at or below the effluent critical dilution.

2. 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. 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 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 nonlethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints in the Fathead minnow test.

Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

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/600/4-91/002, or the most recent update thereof.

If the conditions of Test Acceptability are met in Item 2.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 an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 3 below.

- 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/600/4-91/002, or the most recent update thereof.

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 where the receiving stream is classified as intermittent or where the receiving stream has no flow 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 2.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 2.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 3.a. 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 24-hour composite samples from the outfall(s) listed at item 1.a. above. A 24-hour composite sample consists of a minimum of 4 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
- ii. The permittee shall collect second and third 24-hour composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the 24-hour composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- iii. The permittee must collect the 24-hour 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 24-hour composite sample. Samples shall be chilled to 4 degrees Centigrade during collection, shipping and/or storage.

- iv. 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 collect 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 3. of this section.
- v. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the 24-hour 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.
- vi. 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. The permittee shall not allow the sample to be dechlorinated prior to delivery to the laboratory nor at the laboratory.

3. 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/600/4-91/002, 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. of this permit. The permittee shall submit full reports only upon the specific request of the Department.
- b. The permittee shall report the Whole Effluent Lethality values for the 30-Day Average Minimum and the 7-Day Minimum under Parameter No. 22414 on the DMR for that reporting period.

If more than one valid test for a species was performed during the reporting period, the test NOECs will be averaged arithmetically and reported as the DAILY AVERAGE MINIMUM NOEC for that reporting period.

If more than one species is tested during the reporting period, the permittee shall report the lowest 30-Day Average Minimum NOEC and the lowest 7-Day Minimum NOEC for Whole Effluent Lethality.

A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit. Only ONE set of biomonitoring data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST Survival results for each species during the reporting period. 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 EPA review.

- c. The permittee shall submit the results of the valid toxicity test on the DMR for that reporting period. 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 No Observed Effect Concentration (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, Parameter No. TQP6C.

ii. **Ceriodaphnia dubia**

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

- B. Report the NOEC value for survival, Parameter No. TOP3B.
- C. Report the NOEC value for reproduction, Parameter No. TPP3B.
- D. If the No Observed Effect Concentration (NOEC) for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B.
- E. Report the highest (Critical dilution or control) Coefficient of Variation, Parameter No. TQP3B.

4. **Monitoring Frequency Reduction**

- a. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution without a major modification. 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 2.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 Department will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the Permit Compliance System section to update the permit reporting requirements.
- c. This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

10. If TRC test results are less than Detection Level Achieved (DL), a value of zero (0) may be used for the Discharge Monitoring Report (DMR) calculations and reporting requirements.

Total residual chlorine (TRC) in the effluent composite sample shall be measured and reported both at the time of sample termination and at the time of toxicity test initiation.

The permittee shall ensure that the effluent composite used in toxicity testing is representative of normal facility residual chlorine discharge concentration.

11. 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 NPDES 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 136; and
- All associated devices are installed, calibrated and maintained to insure the accuracy of the measurements and are consistent with 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.

In the event that an approved, continuous, on-line analyzer is temporarily out of service for maintenance or repair it is permitted to take a grab sample and use an approved method for monitoring of that parameter until the analyzer is back in service.

12. The chlorine residual analyzer shall be calibrated or verified according to the instrument manufacturer's recommendations to verify that measurements are accurate and reliable to within + - 10% of a known standard. This calibration/verification frequency shall be weekly for the first month and change to monthly thereafter. The frequency of calibration/verification will go back to weekly in the event that any monthly calibration/verification shows the instrument is no longer accurate to within + - 10%. If four consecutive weekly calibration /verifications prove the instrument to be reading within + - 10%, then the calibration/verification frequency shall again return to a monthly frequency.
13. Electronic flow meters such as an Ultra-sonic meter, as opposed to mechanical flow meters, shall be installed and initially calibrated to manufacturer's specifications. Thereafter, the flow meter shall be checked weekly to verify that the meter is accurate to

within + - 10%. As long as the meter continues to read accurately, no recalibration is needed.

14. The requirements for duplicates and spikes that reasonably apply to the analysis of certain parameters when collected as grab samples shall be followed. For those parameters collected/analyzed continuously, and for which duplicates and spikes are not reasonable, duplicates and spikes will not be required.
15. Periodically, treated effluent will be pumped to the Pinnacle Golf Course for irrigation purposes. The volume of discharge through Outfall 002 is to be reported to NPDES Enforcement on the monthly Discharge Monitoring Reports (DMRs). The volume discharged to the receiving stream through Outfall 001 will be reported on the DMR as the reduced flow.
16. Additional Requirements for Outfall 001:

As required in Part II. Section C.5 - Monitoring results must be reported on a Discharge Monitoring Reports (DMRs). For Outfall 001, the facility must submit DMRs for both tiers (i. e. Outfall 001-design flow of 6.7 mgd and Outfall 001-design flow of 14 mgd.) After completion of the wastewater treatment facility with a design flow of 14 mgd, the permittee shall submit a letter requesting that Outfall 001 with the design flow of 6.7 mgd be terminated. The permittee must continue submitting two DMRs for Outfall 001 until the modification request is granted.

Additionally, in accordance with Regulation No. 6, Section 6.202, the permittee shall submit Plans and Specifications for the proposed 14-mgd wastewater treatment facility to the Department for review and approval prior to any construction/modification of the existing wastewater treatment facility.

PART IV DEFINITIONS

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

1. **“Act”** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **“Administrator”** means the Administrator of the U.S. Environmental Protection Agency.
3. **“Applicable effluent standards and limitations”** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
4. **“Applicable water quality standards”** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303 (a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under regulation No. 2, as amended, (regulation establishing water quality standards for surface waters of the State of Arkansas.)
5. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **“Daily Discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
Mass Calculations: For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total mass of pollutant discharged over the sampling day.
Concentration Calculations: For pollutants with limitations expressed in other units of measurement, determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the “daily discharge” determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that sampling day by using the following formula: where C= daily concentration, F=daily flow and n=number of daily samples; daily average discharge

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

7. **Monthly average:** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month. For Fecal Coliform Bacteria (FCB) report the monthly average see 30-day average below.
8. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month. The 7-day average for fecal coliform bacteria is the geometric mean of the values of all effluent samples collected during the calendar week in colonies/100 ml.

9. **“Department”** means the Arkansas Department of Environmental Quality (ADEQ).
10. **“Director”** means the Administrator of the U.S. Environmental Protection Agency and/or the Director of the Arkansas Department of Environmental Quality.
11. **“Grab sample”** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
12. **“Industrial User”** means a nondomestic discharger, as identified in 40 CFR 403, introducing pollutants to a publicly-owned treatment works.
13. **“National Pollutant Discharge Elimination System”** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318 and 405 of the Clean Water Act.
14. **“POTW”** means a Publicly Owned Treatment Works.
15. **“Severe property damage”** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
16. **“APCEC”** means the Arkansas Pollution Control and Ecology Commission.
17. **“Sewage sludge”** means the solids, residues, and precipitate separated from or created in sewage by the unit processes a publicly-owned treatment works. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and storm water runoff that are discharged to or otherwise enter a publicly-owned treatment works.
18. **“7-day average”** discharge limitation, other than for fecal coliform bacteria, is the highest allowable arithmetic means of the values for all effluent samples collected during the calendar week. The 7-day average for fecal coliform bacteria is the geometric mean of the values of all effluent samples collected during the calendar week in colonies/100 ml. The DMR should report the highest 7-day average obtained during the calendar month. For reporting purposes, the 7-day average values should be reported as occurring in the month in which the Saturday of the calendar week falls in.
19. **“30-day average”**, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. The 30-day average for fecal coliform bacteria is the geometric mean of the values for all effluent samples collected during a calendar month.
For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
20. **“24-hour composite sample”** consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at frequent intervals proportional to flow over the 24-hour period.
21. **“12-hour composite sample”** consists of 12 effluent portions, collected no closer together than one hour and composited according to flow. The daily sampling intervals shall include the highest flow periods.

22. **“6-hour composite sample”** consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.

23. **“3-hour composite sample”** consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.

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 or preventive maintenance, or carelessness of improper operations.

26. **“For Fecal Coliform Bacteria”**, 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.

27. **“Dissolved oxygen limit”**, shall be defined as follows:

a. When limited in the permit as a monthly minimum, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month;

b. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.

28. **The term “MGD”** shall mean million gallons per day.

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

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

31. **The term “cfs”** shall mean cubic feet per second.

32. **The term “ppm”** shall mean part per million.

33. **The term “s.u.”** shall mean standard units.

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 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 Discharge Monitoring report shall be submitted by the 25th of the month following the monitoring period end date.

MONTHLY:

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

QUARTERLY:

(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.

SEMI-ANNUAL:

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

ANNUAL or YEARLY:

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

Final Fact Sheet

for renewal of an NPDES Permit Number AR0043397 to discharge to Waters of the State

1. **PERMITTING AUTHORITY.**

The issuing office is:

Arkansas Department of Environmental Quality
8001 National Drive
Post Office Box 8913
Little Rock, Arkansas 72219-8913

2. **APPLICANT.**

The applicant is:

City of Rogers
4300 Rainbow Rd.
Rogers, AR 72758

3. **PREPARED BY.**

The permit was prepared by:

Marysia Jastrzebski, P.E.
NPDES Branch, Water Division

4. **DATE PREPARED.**

The permit was prepared on January 26, 2006.

5. **PREVIOUS PERMIT ACTIVITY.**

Effective Date: May 1, 2000.
Expiration Date: April 30, 2005.

The permittee submitted a permit renewal application on 10/01/2004 . It is proposed that the current NPDES permit be reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

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

The outfalls are located at the following coordinates:

Outfall 001: Latitude: 36° 18' 07" Longitude: 94° 12' 58"

Outfall 002: Latitude: 36° 17' 57" Longitude: 94° 12' 04"

The receiving waters named:

Outfall 001: Osage Creek, thence to the Illinois River in Segment 3J of the Arkansas River Basin. The receiving stream is a Water of the State classified for primary contact recreation, raw water source for public, industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

Outfall 002: Pinnacle Golf Course - "C" Lake. Wastewater pumped to "C" Lake is used to irrigate Pinnacle Golf Course.

a. **303d List and Endangered Species Considerations**

i. **303d List**

OUTFALLS 001:

The receiving stream, Osage Creek is a tributary of the Illinois River, which is listed on 1998 Oklahoma's 303d list due to nutrients levels.

The receiving stream, Osage Creek was added to the Arkansas 2002 303(d) list by EPA.

The final permit includes a Total Phosphorus limit based on Section 6.401(D)(1) of Regulation No. 6 and the December 18, 2003, Statement of Joint Principles and Actions between Arkansas and Oklahoma, which calls for Rogers to reduce the concentration of phosphorus in its effluent to 1 mg/l, based on a 30-day average, by 2004

Outfall 002:

The receiving stream is not listed on the 303d list. Therefore no permit action is needed.

ii. **Endangered Species:**

Comments were received from the U.S. Fish and Wildlife Service (USF&WS). According to the letter dated December 14, 2004, two federally- endangered species, the Cave Crayfish (*Cambarus aculabrum*) and Gray Bat (*Myotis grisescens*), and the federally threatened Ozark Cavefish (*Amblyopsis rosae*) have been documented in the vicinity of the outfalls from this facility. Several known Ozark Cavefish and Cave Crayfish sites are located within the Osage Creek recharge zone, downstream from the facility. Two of these sites contain the

largest known populations of this threatened species. Other sensitive cave species, such as the Ozark Cave Amphipod, also inhabit waters connected with the receiving stream of the facility.

The U. S. Fish and Wildlife Service requested that the Agency be notified immediately if any accidental spills occur in the area. Additionally, the Service may request initiation of consultation if the facility exceed permit limits, or new information becomes available regarding the sensitivity of the cave fauna to effluent constituents from the facility.

Additionally, comments were received from the Department of Arkansas Heritage. According to the letter dated November 14, 2005, *Etheostoma micropeca*, the Least Darter, has been known to occur within one mile downstream of the outfall.

7. **OUTFALL AND TREATMENT PROCESS DESCRIPTION.**

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

a. Design Flow:

Outfall 001: 6.7 MGD(existing wastewater treatment facility);
Outfall 001: 14 MGD (proposed wastewater treatment facility)
Outfall 002: varies - discharge from Outfall 001 to Pinnacle Golf Course "C"
Lake for golf course irrigation

b. Type of treatment: Outfalls 001 and 002: flow equalization, screening, grit & scum removal, five stage Bardenpho activated sludge/biological nutrient removal, final clarification, chlorination/dechlorination, and post aeration. Additionally, for Outfall 002-spray irrigation.

c. Discharge Description: treated municipal wastewater

A quantitative and qualitative description of the discharge described in the NPDES Permit Application Forms received are available for review.

8. INDUSTRIAL WASTEWATER CONTRIBUTIONS.

a. INDUSTRIAL USERS

This facility receives Significant Industrial process wastewater.

<u>Industrial Contributor</u>	<u>Principal Product</u>	<u>Flow</u>
Bekaert Corporation	Steel cord	0.022 MGD
Fibertech Group, Inc.	Wipes and fabrics for hygiene and medical use	0.105 MGD
Model Laundry & Dry Cleaners	Laundered or dry cleaned materials	0.010 MGD
Ozark Mountain Poultry	Poultry products	0.065 MGD
Pel – Freez Rabbit Meat, Inc.	Rabbit Meat Processing	0.035 MGD
Glad Manufacturing, Inc.	Polyethylene plastic bags and wrap	0.045 MGD
Kennametal	Machine tools and measuring devices	0.002 MGD
MAFCO, Inc.	Water tanks, valves, hydrants, and blower housing	0.002 MGD
Preformed Line Products, Inc.	Pole line hardware & telephone cable splice cases	0.005 MGD
Superior Industries, Inc.	Aluminum wheels	0.070 MGD
Tyson Chick-N-Quick	Poultry products	0.277 MGD
Tyson of Rogers	Poultry products	0.555 MGD

Based on the applicant’s effluent compliance history and the type of industrial contributions, standard Pretreatment Program implementation conditions are deemed appropriate at this time.

9. SEWAGE SLUDGE PRACTICES.

Sludge is aerobically stabilized and land applied. Sludge produced at the treatment facility is disposed at the following location:

Field Number	Sections	Township	Range
RPCF	19 & 30	19 North	30 West

10. **PERMIT CONDITIONS.**

The Arkansas Department of Environmental Quality has made a tentative determination to issue a permit for the discharge described in the application. Permit requirements are based on NPDES regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR 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. **Final Effluent Limitations**

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

Outfall 001 (design flow of 6.7 mgd) - treated municipal wastewater

<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 (MGD)	N/A	Report	Report	Daily	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	558.8	10	15	Once/week	24-hr composite
(Nov-Apr)	1117.6	20	30	Once/week	24-hr composite
Total Suspended Solids (TSS)					
(May-Oct)	838.2	15	23	Once/week	24-hr composite
(Nov-Apr)	1117.6	20	30	Once/week	24-hr composite
Ammonia Nitrogen (NH3-N)					
(April)	134.1	2.4	5.7	Once/week	24-hr composite
(May-Oct)	83.8	1.5	2.3	Once/week	24-hr composite
(Nov-March)	223.5	4	6	Once/week	24-hr composite

Dissolved Oxygen					
(May-Oct)	N/A	7.9 Min	N/A	Three/week	Continuous
(Nov-Apr)	N/A	10	N/A	Three/week	Continuous
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	200	400	Three/week	Grab
Total Residual Chlorine (TRC)	N/A	0.1 mg/l (Inst. Max.)		Three/week	Continuous
Phosphorus, Total	55.9	1	2	Twice/month	24-hr composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Three/week	Continuous
<u>Whole Effluent Toxicity Lethality (7-day NOEC)</u>	<u>Daily Average Min.</u>		<u>7-day Min.</u>		
	not < 68 %		not < 68%	Once/quarter	24-hr composite

Outfall 001 (design flow of 14 mgd), treated municipal wastewater

<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	Report	Daily	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	584	5	7.5	Three/week	24-hr composite
(Nov-Apr)	1168	10	15	Three/week	24-hr composite
Total Suspended Solids (TSS)					
(May-Oct)	1,168	10	15	Three/week	24-hr composite
(Nov-Apr)	1,751	15	23	Three/week	24-hr composite
Ammonia Nitrogen (NH3-N)					
(April)	234	2.0	4.5	Three/week	24-hr composite
(May-Oct)	175	1.5	2.3	Three/week	24-hr composite
(Nov-March)	350	3.0	4.5	Three/week	24-hr composite

Dissolved Oxygen					
(May-October)	N/A	7.9 Min	N/A	Three/week	Continuous
(Nov-April)	N/A	10 Min	N/A	Three/week	Continuous
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	200	400	Three/week	Grab
Total Residual Chlorine (TRC)	N/A	0.1 mg/l (Inst. Max.)		Three/week	Continuous
Phosphorus, Total	117	1	2	Three/week	24-hr composite
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Three/week	Continuous
<u>Whole Effluent Toxicity Lethality (7-day NOEC)</u>	<u>Daily Average Min.</u> not < 82 %		<u>7-day Min.</u> not < 82 %		Once/quarter 24-hr composite

Outfall 002- treated municipal wastewater

<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 (MGD)	N/A	Report	Report	Daily	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	N/A	10	15	Once/week	24-hr composite
Total Suspended Solids (TSS)	N/A	15	23	Once/week	24-hr composite
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	200	400	Once/week	Grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	Three/week	Continuous

- 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. No visible sheen (Sheen means an iridescent appearance on the surface of the water).

11. 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 tentative decisions as required under 40 CFR 124.7 (48 FR 1413, April 1, 1983).

a. 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.

b. Technology-Based Effluent Limitations and/or Conditions

i. General Comments

The permit must at least comply with 40 CFR 133 (Secondary Treatment Regulation) when applicable.

c. State Water Quality Numerical Standards Based Limitations

i. Conventional and Non-Conventional Pollutants

Outfall 001(design flow of 6.7 mgd). The water quality-based limits for CBOD₅, TSS, NH₃-N (May-March), and DO have been based on the current NPDES permit, and 40 CFR Part 122.44(l). The calculation of the loadings (lbs per day) uses a design flow of 6.7 MGD and the following equation (See below). These limitations are included in the updated Arkansas Water Quality Management Plan (AWQMP). pH limitations are based on Chapter 5, Section 2.504 of Regulation No. 2 as amended.

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

Fecal Coliform Bacteria:

The final effluent limitations for Fecal Coliform Bacteria are continued from the previous permit. These limits are based on 40 CFR 122.44(l).

Ammonia-Nitrogen

The water quality effluent limitations for Ammonia are based on either DO-based effluent limits or on toxicity-based standards, whichever are more stringent.

The toxicity-based effluent limitations are based on Chapter 5, Section 2.512 of Regulation No. 2. The following formula has been used to calculate toxicity based Ammonia limits:

$$\text{Limit} = C_d = (\text{IWC}(\text{Q}_d + \text{Q}_b) - C_b\text{Q}_b)/\text{Q}_d,$$

Where:

C_d = effluent concentration

IWC = Chronic Ammonia toxicity standard. For Ozark Highland ecoregion:

3.9 mg/l 7-day Average, 1.6 mg/l Monthly Average (April-October)

10.3 mg/l 7-day Average, 4.1 mg/l Monthly Average (November-March)

Q_d = design flow = 6.7 MGD = 10.35 cfs

Q_b = critical flow of the receiving stream = 4.89 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 7.30 cfs (Osage Creek) is based on "Identification and Classification of Perennial Stream of Arkansas", Arkansas Geological Commission Map.

C_b = background concentration = 0.01 mg/l (assumed)

April-October :

7-day Average:

$$C_d = [3.9 \text{ mg/l} \times (10.35 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 10.35 = 5.7 \text{ mg/l}$$

Monthly Average:

$$C_d = [1.6 \text{ mg/l} \times (10.35 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 10.35 = 2.4 \text{ mg/l}$$

November-March:

7-day Average:

$$C_d = [10.3 \text{ mg/l} \times (10.35 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 10.35 = 15.2 \text{ mg/l}$$

Monthly Average:

$$C_d = [4.1 \text{ mg/l} \times (10.35 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 10.35 = 6.0 \text{ mg/l}$$

Months	DO based limit		Toxicity based limit		Permit limit	
	Monthly Average mg/l	7-day Average, mg/l	Monthly Average, mg/l	7-day Average, mg/l	Monthly Average, mg/l	7-day Average, mg/l
April	4	6	2.4	5.7	2.4	5.7
May-October	1.5	2.3	2.4	5.7	1.5	2.3
November-March	4	6	6	15.2	4	6

Phosphorus:

The final permit includes Total Phosphorous limit based on Section 6.401(D)(1) of Regulation No. 6 and the December 18, 2003, Statement of Joint Principles and Actions between Arkansas and Oklahoma.

The effluent load limitation of 55.9 lbs/day for Total Phosphorus is based on the current design flow of 6.7 MGD at 1 mg/l for the monthly average per the Arkansas and Oklahoma Statement of Joint Principles and Actions dated 12/18/2003.

Outfall 001(design flow of 14 mgd): Final effluent limits basis for CBOD5, TSS, NH3-N (May-March and a 7-day avg. for April), and DO is a MultiSMP desk top model performed by staff on 06/23/2005. These limitations are included in the updated Arkansas Water Quality Management Plan (WQMP). The calculation of the loadings (lbs per day) uses a design flow of 14 MGD and the following equation (See below). pH limitations are based on Chapter 5, Section 2.504 of Regulation No. 2 as amended.

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

Fecal Coliform Bacteria:

The final effluent limitations for Fecal Coliform Bacteria are consistent with the effluent limitations applied at Outfall 001. These limits are based on 40 CFR 122.44(1).

Ammonia-Nitrogen

The water quality effluent limitations for Ammonia are based on either DO-based effluent limits or on toxicity-based standards, whichever are more stringent.

The toxicity-based effluent limitations are based on Chapter 5, Section 2.512 of Regulation No. 2. The following formula has been used to calculate toxicity based Ammonia limits:

$$\text{Limit} = C_d = (IWC(Q_d + Q_b) - C_b Q_b) / Q_d,$$

Where:

Cd = effluent concentration

IWC = Chronic Ammonia toxicity standard. For Ozark Highland ecoregion:

3.9 mg/l 7-day Average, 1.6 mg/l Monthly Average (April-October)

10.3 mg/l 7-day Average, 4.1 mg/l Monthly Average (November-March)

Qd = design flow = 14 MGD = 21.56 cfs

Qb = critical flow of the receiving stream = 4.89 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 7.30 cfs (Osage Creek) is based on "Identification and Classification of Perennial Stream of Arkansas", Arkansas Geological Commission Map.

Cb = background concentration = 0.01 mg/l (assumed)

April-October :

7-day Average:

$$Cd = [3.9 \text{ mg/l} \times (21.56 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 21.56 = 4.8 \text{ mg/l}$$

Monthly Average:

$$Cd = [1.6 \text{ mg/l} \times (21.56 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 21.56 = 2.0 \text{ mg/l}$$

November-March:

7-day Average:

$$Cd = [10.3 \text{ mg/l} \times (21.56 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 21.56 = 12.6 \text{ mg/l}$$

Monthly Average:

$$Cd = [4.1 \text{ mg/l} \times (21.56 \text{ cfs} + 4.89 \text{ cfs}) - 0.01 \text{ mg/l} \times 4.89 \text{ cfs}] / 21.56 = 5.0 \text{ mg/l}$$

Months	DO based limit		Toxicity based limit		Permit limit	
	Monthly Average, mg/l	7-day Average, mg/l	Monthly Average, mg/l	7-day Average, mg/l	Monthly Average, mg/l	7-day Average, mg/l
April	3	4.5	2.0	4.8	2.0	4.5
May-October	1.5	2.3	2.0	4.8	1.5	2.3
November-March	3	4.5	5.0	12.6	3	4.5

Phosphorus:

The final permit includes Total Phosphorus limit based on Section 6.401(D)(1) of Regulation No. 6 and the December 18, 2003, Statement of Joint Principles and Actions between Arkansas and Oklahoma.

The effluent load limitation of 117 lbs/day for Total Phosphorus is based on the future design flow of 14 MGD at 1 mg/l. Any additional treatment must be approved and construction approval granted prior to final installation. This limitation is consistent with the letter dated September 11, 2003, from Miles Tolbert, Oklahoma Secretary of the Environment, to the Honorable Steve Womack, Mayor of the City of Rogers.

Outfall 002: The water quality-based limits for CBOD5 and TSS have been based on the current NPDES permit, and Section 11(c) of Regulation No. 6. pH limitations are based on Chapter 5, Sections 2.507 and 2.504 of Regulation No. 2 as amended, respectively. Fecal Coliform Bacteria equivalent to limits applied at Outfall 001 have been included, since the sample taken for compliance with Outfall 001 monitoring requirements is used for compliance with monitoring requirements at Outfall 002.

The previous permit included mass limitations for CBOD5 and TSS based on the estimated maximum flow of 1.5 mgd pumped to Pinnacle Golf Course "C" Lake for irrigation purposes. These limitations have not been continued. A review of the DMRs data and new information submitted by the permittee indicate that flows to Outfall 002 vary depending on water needs of the golf course. This elimination of mass limitations does not constitute backsliding based on 40 CFR 122.44 (l)(2)(i)(B)(1).

d. **Toxics Pollutants-Priority Pollutant Scan (PPS)**

i. **General Comments**

Effluent limitations and/or conditions established in the final permit are in compliance with the Arkansas Water Quality Standards and the applicable Water Quality Management Plan.

ii. **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 NPDES Permitting" and the "Post Third Round NPDES 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.

iii. **Implementation**

The State of Arkansas is currently implementing EPA's Post Third-Round Policy in conformance with the EPA Regional strategy. The 5-year NPDES 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 NPDES permits. State narrative and numerical water quality standards from the Regulation No. 2 are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

iv. **Priority Pollutant Scan**

In accordance with the regional policy ADEQ has reviewed and evaluated the effluent in evaluating 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 (F g/l)
 C_e = pollutant concentration in effluent (F g/l)
 Q_e = effluent flow of facility (cfs)
 C_b = background concentration of pollutant in receiving stream (F 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 NPDES 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 attachment IV of 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 during the last two years are available, do not multiply by 2.13, but instead use the maximum reported values.

Q_e = 6.7 MGD = 10.35 cfs, based on the design flow of the existing wastewater treatment plant (Outfall 001-design flow of 6.7 mgd)

Q_e = 14 MGD = 21.56 cfs, based on the design flow of the proposed wastewater treatment plant (Outfall 001-design flow of 14 mgd)

C_b = 0 μ g/l

Q_b = (See below):

(e) Aquatic Toxicity

Chronic Toxicity: Flow = 4.89 cfs (Osage Creek-Outfall 001) 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 7.30 cfs (Osage Creek) is based on "Identification and Classification of Perennial Stream of Arkansas", Arkansas Geological Commission Map.

Acute Toxicity: Flow = 2.41 cfs (Osage Creek-Outfall 001) for comparison with acute aquatic toxicity. This flow is **33** percent of the 7Q10 for the receiving stream.

(f) Bioaccumulation

Flow = 149.82 cfs (Osage Creek-Outfall 001) for comparison with bioaccumulation criteria. This flow is the long term average (LTA) of the receiving stream which is based on Water Quality Data Base System, utilizing ADEQ accumulated data for Station ARK 41, Osage Creek near Elm Springs, Arkansas.

(g) Drinking Water

Flow = 7.3 cfs (Osage Creek – Outfall 001) 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 attachment VI of CPP.

pH = 7.60 s.u., based on compliance data from "Arkansas Water Quality Inventory Report" 305(b), utilizing ADEQ accumulated data for Station ARK 41.

v. **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.

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

Metals criteria established in Regulation No. 2 for aquatic life protection are based on dissolved metals concentrations and hardness values (See Page 6 of **Attachment 1**). However, Federal Regulations cited at 40 CFR 122.45(c) require that effluent limitations for metals in NPDES permits be expressed as total recoverable (See Pages 1 and 6 of **Attachment 1**). 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 **Attachment 3** and Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR 131.36.

vii. **Results of the comparison of the submitted information with the appropriate 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
Zinc	39.12*	20

* Geometric mean of the following reported concentrations: 39.2 µg/l, 38.0 µg/l, 38.4 µg/l, 34.0 µg/l, and 47.1 µg/l. Geometric Mean = $(39.2 \times 38 \times 38.4 \times 34 \times 47.1)^{1/5}$

However, ADEQ has determined from the information submitted by the permittee that no water quality standards or Gold Book criteria are exceeded. Therefore no permit action is necessary to maintain these standards or criteria (See **Attachment 1 and 2.**)

viii. **Oklahoma Water Quality Standards Evaluation**

The effluent from this facility flows into Osage Creek, then to the Illinois River which is a Water of the State of Oklahoma. Therefore; ADEQ compared the IWC of the pollutants in Item 12.d.vii (See Attachment 1) to the Oklahoma Water Quality Standards (See **Attachment 6.**)

A. Effluent Analysis Summary for Aquatic Life Protection

Pollutant	C _e , µg/l	C _e * 2.13, µg/l	IWC, µg/l	WQ Acute+, µg/l	WQ Chronic+, µg/l
Zinc	39.12	83.32	83.32	120.9	110.4

C_e Effluent concentration based on Priority Pollutant Scan (PPS)

C_e X 2.13 = Reasonable potential factor. (Referred to as C₉₅ in ODEQ's CPP)

Instream Waste Concentration (IWC). IWC (Referred to as C in ODEQ's CPP) is determined by first calculating the dilution capacity of the receiving stream, Q*. The value of Q* will determine which of three equations is to be used to calculate C, the concentration on the mixing zone boundary. (Following equations were taken from Part III of Chapter 2, page 114 in ODEQ's CPP)

$$Q^* = Q_e / Q_u = 10.35 / 1 = 10.35$$

at Q_e = design flow of facility = 6.7 MGD = 10.35 cfs (Outfall 001-design flow of 6.7 mgd), and

$$Q^* = Q_e / Q_u = 21.56 / 1 = 21.56$$

at Q_e = future design flow of facility = 14 MGD = 21.56 cfs (Outfall 001-design flow of 14 mgd))

$$Q_u = 7Q_2 \text{ of receiving stream} = \text{assume } 1.0 \text{ cfs}$$

Since Q* is greater than 0.3333, the following equation from ODEQ's CPP will be used to determine the concentration on the mixing zone:

$$C = C_{95}$$

+ Based on Oklahoma Water Resource Board (OWRB) proposed 1994 and revised on 1995 numerical criteria. Oklahoma water quality standards (OWQS) for the numerical chronic and acute criteria for toxic substances-Fish and Wildlife Propagation (OAC 785:45-5-12(e)(6)(G), amended 1997. All hardness dependent criteria were calculated using a hardness value of 106.55 mg/l CaCO₃ for Segment No. 121700, as taken from Oklahoma's Continuing Planning Process (CPP) March 1997.

As seen in the above table, the calculated IWC does not exceed any Oklahoma Water Quality Standards. Therefore, no permit limits are necessary for aquatic life protection.

B. Effluent Analysis Summary for Human Health Protection

Pollutant	C _e , µg/l	C _e * 2.13, µg/l	IWC, µg/l	Human Health Standard+, µg/l
Zinc	39.12	83.32	60.1 (Outfall 001- design flow of 6.7 mgd)	*
Zinc	39.12	83.32	70.3 (Outfall 001- design flow of 14 mgd)	*

* Oklahoma does not have any numerical criteria for this parameter.

C_e Effluent concentration based on Priority Pollutant Scan (PPS).

C_e X 2.13 = Reasonable potential factor.

IWC is computed using a mass balance model for complete mixing between the effluent and the receiving water. The equation is as follows:

$$IWC * (Q_e + Q_{lta}) = Q_e * (C_e * 2.13) + Q_{lta} * C_u$$

C_u = background concentration, assumed to be zero.

Q_e = design flow = 10.35 cfs (Outfall 001)

Q_e = future design flow = 21.56 cfs (Outfall 001)

Q_{lta} = long term average flow = 4 cfs

+ Based on Oklahoma Water Resource Board (OWRB) proposed 1994 and revised on 1995 numerical criteria (OAC 785:45-5-12(e)(8)(B)).

For the substances for which Oklahoma does not have numerical criteria, ADEQ has determined that these substances do not demonstrate reasonable potential under Arkansas criteria. Therefore, no permit action is necessary to protect human health.

e. Total Residual Chlorine (TRC) Requirements

No measurable which is defined as less than 0.1 mg/l is continued from the previous permit pursuant to 40 CFR 122.44(l).

f. **Final Limitations**

The following effluent limitations or "report" requirements were placed in the permit based on the more stringent of the technology-based, water quality-based or previous NPDES permit limitations:

Outfall 001(design flow of 6.7 mgd):

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Final Permit	
	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								
(May-Oct)	10	15	25	40	10	15	10	15
(Nov-Apr)	20	30	25	40	20	30	20	30
TSS								
(May-Oct)	15	23	30	45	15	23	15	23
(Nov-Apr)	20	30	30	45	20	30	20	30
NH3-N								
(April)	2.4	5.7	N/A	N/A	4	6	2.4	5.7
(May-Oct)	1.5	2.3	N/A	N/A	1.5	2.3	1.5	2.3
(Nov-March)	4	6	N/A	N/A	4	6	4	6
DO (Min)								
(May-Oct)	7.9	N/A	N/A	N/A	7.9	N/A	7.9	N/A
(Nov-Apr)	10	N/A	N/A	N/A	10	N/A	10	N/A
FCB (col/100ml)								
(April-September)	200	400	N/A	N/A	200	400	200	400
(Oct-March)	1000	2000	N/A	N/A	200	400	200	400
TRC (Inst. Max)	N/A		0.1 mg/l		0.1 mg/l		0.1 mg/l	
Total Phosphorus	1	2	N/A	N/A	N/A	N/A	1	2
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6-9 s.u.		6.0-9.0 s.u.	

Outfall 001(design flow of 14 mgd):

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Final Permit	
	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								
(May-Oct)	10	15	25	40	N/A	N/A	10	15
(Nov-Apr)	15	23	25	40	N/A	N/A	15	23
TSS								
(May-Oct)	15	23	30	45	N/A	N/A	15	23
(Nov-Apr)	20	30	30	45	N/A	N/A	20	30
NH3-N								
(April)	2.0	4.5	N/A	N/A	N/A	N/A	2.0	4.5
(May-Oct)	1.5	2.3	N/A	N/A	N/A	N/A	1.5	2.3
(Nov-March)	3.0	4.5	N/A	N/A	N/A	N/A	3.0	4.5
DO (Min)								
(May-Oct)	7.9	N/A	N/A	N/A	N/A	N/A	7.9	N/A
(Nov-April)	10	N/A	N/A	N/A	N/A	N/A	10	N/A
FCB (col/100ml)	200	400	N/A	N/A	N/A	N/A	200	400
(April-September)	200	400	N/A	N/A	N/A	N/A	200	400
(Oct-March)	1000	2000	N/A	N/A	N/A	N/A	200	400
TRC (Inst. Max)	N/A		0.1 mg/l		N/A		0.1 mg/l	
Total Phosphorus	1	2	N/A	N/A	N/A	N/A	1	2
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		N/A		6.0-9.0 s.u.	

Outfall 002:

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous NPDES Permit		Final Permit	
	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	23	30	45	15	23	15	23
FCB (col/100ml)	200	400	N/A	N/A	1000	2000	200	400
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6-9 s.u.		6.0-9.0 s.u.	

g. **Biomonitoring**

The previous permit established both monthly average and 7-day minimum effluent limitations for lethality following Regulations promulgated by 40 CFR 122.44(d)(1)(v). These effluent limitations are continued in the final permit.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS

FREQUENCY

Chronic Biomonitoring

Once/quarter

The calculations for dilution used for chronic biomonitoring are as follows:

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

Outfall 001:

$$Q_d = \text{Design flow} = 6.7 \text{ MGD} = 10.35 \text{ cfs}$$

$$7Q_{10} = 7.3 \text{ cfs}$$

$$Q_b = \text{Background flow} = (0.67) \times 7Q_{10} = 4.89 \text{ cfs}$$

$$CD = (10.35) / (10.35 + 4.89) \times 100 = 68 \%$$

$$Q_d = \text{Design flow} = 14 \text{ MGD} = 21.56 \text{ cfs}$$

$$7Q_{10} = 7.3 \text{ cfs}$$

$$Q_b = \text{Background flow} = (0.67) \times 7Q_{10} = 4.89 \text{ cfs}$$

$$CD = (21.56) / (21.56 + 4.89) \times 100 = 82 \%$$

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 **29%, 38%, 51%, 68%, and 89%(Outfall 001) and 26%, 35%, 46%, 62%, and 82% (Outfall 001(design flow of 14 mgd))** (See **Attachment I** of CPP). The low-flow effluent concentration (critical dilution) is defined as **68%(Outfall 001) and 82 %(Outfall 001(design flow of 14 mgd))** effluent.

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/600/4-89/001 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

Administrative Records

The following information summarized toxicity test submitted by the permittee during the term of the current permit at outfall **001** (See **Attachment 5**.)

h. Sample Type and Sampling Frequency

Regulations promulgated at 40 CFR 122.44(i)(1) require permit to establish monitoring requirements which assure compliance with permit limitations. The requirements for sample types and sampling frequencies for flow, CBOD5, TSS, NH3-N, FCB, and biomonitoring (Outfall 001-design flow of 6.7 mgd) and flow, CBOD5, TSS, and FCB (Outfall 002) have been based on the current NPDES permit. The requirements for sampling frequencies for TRC, D.O., and pH (Outfall 001) have been changed from five days/week to three days/week using the last two years of monitoring data and the best engineering judgment. This decrease in monitoring frequency does not constitute backsliding based on 40 CFR 122.44 (1)(2)(i)(B)(1). The requirements for the sample type for these pollutants have been changed from "grab" to "continuous". The requirements for sampling frequency for pH (Outfall 002) are based on recommended frequencies for self-monitoring of municipal discharges within the flow of 1.0 to 5.0 MGD. The requirements for the sample type and frequency of Phosphorus are based upon the judgment of the permit writer.

The requirements for the sample types and sample frequencies for Outfall 001(design flow of 14 mgd) are based on the Best Engineering Judgment of the permit writer.

i. Changes from the previously issued permit

1. A narrative description of the facility location has been included.
2. The descriptions of the receiving streams have been expanded.
3. The coordinates of the facility and Outfall 001 have been revised.
4. The final effluent limitations for Total Phosphorus for Outfall 001 have been added.

5. The effluent limitations for Ammonia Nitrogen for April for Outfall 001 have been revised.
6. The effluent limitations for pH for Outfalls 001 and 002 have been corrected from 6-9 s.u. to 6.0-9.0 s.u.
7. The effluent limitations for Fecal Coliform Bacteria for Outfall 002 have been revised.
8. Mass limitations for CBOD5 and TSS for Outfall 002 have been deleted.
9. The monitoring frequencies for pH, DO, and TRC (Outfall 001) and pH (Outfall 002) have been revised.
10. The sample type for DO, TRC, and pH for Outfall 001 and pH for Outfall 002 have been revised.
11. Outfall 001 based on the design flow of 14 MGD has been included.
12. Parts II, III, and IV have been revised.

j. **Storm water pollution prevention plan requirements**

In lieu of storm water pollution prevention plan requirements the permittee has submitted a "No exposure certification for exclusion from NPDES Storm water" on April 15, 2003. This certification was approved by the Department on April 15, 2003.

12. **SCHEDULE OF COMPLIANCE.**

Compliance with final effluent limitations is required by the following schedule:

Outfall 001 and Outfall 002

Compliance is required on the effective date of the permit.

13. **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.

Additional Requirements for Outfall 001:

As required in Part II. Section C.5 - Monitoring results must be reported on a Discharge Monitoring Reports (DMRs). For Outfall 001, the facility must submit DMRs for both tiers (i. e. Outfall 001-design flow of 6.7 mgd and Outfall 001-design flow of 14 mgd.) After completion of the wastewater treatment facility with a design flow of 14 mgd, the permittee shall submit a letter requesting that Outfall 001 with the design flow of 6.7 mgd be terminated. The permittee must continue submitting two DMRs for Outfall 001 until the modification request is granted.

Additionally, in accordance with Regulation No. 6, Section 6.202, the permittee shall submit Plans and Specifications for the proposed 14-mgd wastewater treatment facility to the Department for review and approval prior to any construction/modification of the existing wastewater treatment facility.

14. **SOURCES.**

The following sources were used to prepare the final permit:

- a. NPDES application No. AR0043397 received 10/01/2004.
- b. Arkansas Water Quality Management Plan(WQMP).
- c. Regulation No. 2.
- d. Regulation No. 6.
- e. 40 CFRs 122, 125, 133 and 403.
- f. NPDES permit file AR00 43397.
- g. Discharge Monitoring Reports (DMRs).
- h. "Arkansas Water Quality Inventory Report 2002 (305B)", ADEQ.
- i. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.
- j. Continuing Planning Process (CPP).
- k. Technical Support Document For Water Quality-based Toxic Control.
- l. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR 131.36.
- m. Title 785. Oklahoma Water Resources Board. Chapter 45. Oklahoma's Water Quality Standards and Chapter 46. Implementation of Oklahoma's Water Quality Standards.
- n. E-mail dated November 30, 2004 , from Clem to Jastrzebski.
- o. E-mail dated November 19, 2004, from Singleton to Jastrzebski.
- p. E-mail dated November 19, 2004, from Schluterman to Jastrzebski.
- q. E-mail dated November 29, 2004 , from Gilliam to Jastrzebski.
- r. Letter dated December 3, 2004, from Mike Lawrence to Jastrzebski.
- s. Letter dated September 11, 2003, from Miles Tolbert, Secretary of the Environment, to Honorable Steve Womack, Mayor, City of Rogers.
- t. Letter dated April 15, 2003, from Martin Maner, Chief, Water Division, to Michael Lawrence, Plant Manager.
- u. Letter dated December 14, 2004, from Margaret Harney, Acting Field Supervisor, United States Department of Interior, Fish and Wildlife Service, to Jastrzebski.
- v. Interoffice Memorandum dated March 28, 2005, from Mo Shafii, Permits Section Chief to NPDES Engineers.
- w. E-mail dated July 1, 2005, from Martin Maner, to Mo Shafii.
- x. Letter dated May3, 2005, from Michael Lawrence, RPCF Plant Manager, to Mo Shafii.
- y. Letter dated April 29, 2005, from Tom S. McAlister, Manager, to Mo Shafii.
- z. Site visit on December 4, 2004.
- aa. Letter dated October 22, 2004, from Bob Makin, ADH, to Mo Shafii.

- bb. Letter from Jon L. Craig, Director, Water Quality Division, Oklahoma Department of Environmental Quality to Marysia Jastrzebski dated November 14, 2005.
- cc. Letter dated November 14, 2005, from Cindy Osborne, The Department of Arkansas Heritage to Jastrzebski, ADEQ.
- dd. Letter dated December 5, 2005, from Michael Lawrence, Plant Manager, Rogers Pollution Control Facility, to Mo Shafii, ADEQ.
- ee. E-mail dated December 12, 2005, from Keith Brown, to Jastrzebski, ADEQ.
- ff. Letter dated November 2, 2005, from J. Randy Young, P. E., Arkansas Natural Resources Commission, to Ronnie McGhee, Bentonville.
- gg. Letter from Jon L. Craig, Director, Water Quality Division, Oklahoma Department of Environmental Quality (ODEQ) to Jastrzebski, ADEQ dated November 14, 2005.
- hh. Letter from Cindy Osborne, Department of Arkansas Heritage to Jastrzebski, ADEQ, dated November 14, 2005.
- ii. E-mail from Mike Lawrence, City of Rogers to Mo Shafii, ADEQ, dated January 30, 2006.

Attachment No. 2
PPS-Outfall 001(design flow of 14 mgd)

Attachment 3

Linear Partition Coefficients for Priority Metals in Streams and Lakes*

METAL	STREAMS		LAKES	
	K _{po}	a	K _{po}	a
Arsenic	0.48 X 10 ⁶	-0.73	0.48 X 10 ⁶	-0.73
Cadmium	4.00 X 10 ⁶	-1.13	3.52 X 10 ⁶	-0.92
Chromium**	3.36 X 10 ⁶	-0.93	2.17 X 10 ⁶	-0.27
Copper	1.04 X 10 ⁶	-0.74	2.85 X 10 ⁶	-0.9
Lead***	2.80 X 10 ⁶	-0.8	2.04 X 10 ⁶	-0.53
Mercury	2.90 X 10 ⁶	-1.14	1.97 X 10 ⁶	-1.17
Nickel	0.49 X 10 ⁶	-0.57	2.21 X 10 ⁶	-0.76
Silver****	2.40 X 10 ⁶	-1.03	2.40 X 10 ⁶	-1.03
Zinc	1.25 X 10 ⁶	-0.7	3.34 X 10 ⁶	-0.68

$$K_p = K_{po} \times TSS^a$$

K_p = Linear Partition Coefficient

TSS = Total Suspended Solids (mg/l)-(See **Attachment 3**)

K_{po} = found from table

a = found from table

$$C/C_t = 1/(1 + (K_p \times TSS \times 10^{-6})) \quad C/C_t = \text{Fraction of Metal Dissolved}$$

* Delos, C. G., W. L. Richardson, J. V. DePinto, R. B., Ambrose, P. W. Rogers, K. Rygwelski, J. P. St. John, W. J. Shaughnessey, T. A. Faha, W. N. Christie. Technical Guidance for Performing Waste Load Allocations, Book II: Streams and Rivers. Chapter 3: Toxic Substances, for the U. S. Environmental Protection Agency. (EPA-440/4-84-022).

** Linear partition coefficient shall not apply to the Chromium VI numerical criterion. The approved analytical method for Chromium VI measures only the dissolved form. Therefore permit limits for Chromium VI shall be expressed in the dissolved form. See 40 CFR 122.45(c)(3).

*** Reference page 18 of EPA memo dated March 3, 1992, from Margaret J. Stasikowski (WH-586) to Water management Division Directors, Region I-IX.

**** Texas Environmental Advisory Council, 1994

Attachment 4

TOTAL SUSPENDED SOLIDS(15th PERCENTILE) BY RECEIVING STREAM AND ECOREGION

For direct discharges to the Arkansas, Red, Ouachita, White, and St. Francis Rivers use the following mean values:

TSS(15th percentile)		
Receiving Stream	TSS	Unit
Arkansas River:		
Ft. Smith to Dardanelle Dam	12.0	mg/l
Dardanelle Dam to Terry L&D	10.5	mg/l
Terry L&D to L&D #5	8.3	mg/l
L&D #5 to Mouth	9.0	mg/l
Red River	33	mg/l
Ouachita River:		
above Caddo River	2.0	mg/l
below Caddo River	5.5	mg/l
White River:		
above Beaver Lake	2.5	mg/l
Bull Shoals to Black River	3.3	mg/l
Black River to Mouth	18.5	mg/l
St. Francis River	18	mg/l

For all other discharges use the following ecoregion TSS:

TSS (15th percentile)		
Ecoregion	TSS	Unit
Ouachita	2	mg/l
Gulf Coastal	5.5	mg/l
Delta	8	mg/l
Ozark Highlands	2.5	mg/l
Boston Mountains	1.3	mg/l
Arkansas River Valley	3	mg/l

Attachment 5

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **AR0043397**

Facility Name: **City of Rogers**

Previous Critical Dilution: **68%**

Date of Review: **11-30-04**

Proposed Critical Dilution: **68%**

Name of Reviewer: **Clem**

Number of Test Performed during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow) : 21**

***Ceriodaphnia dubia* (water flea): 21**

Failed Test Dates during previous 5 years by Species:

***Pimephales promelas* (Fathead minnow) : 6-00 (sublethal)**

***Ceriodaphnia dubia* (water flea): 9-04 (sublethal)**

Previous TRE Activities: None

Frequency Recommendation by Species:

***Pimephales promelas* (Fathead minnow) : four/year**

***Ceriodaphnia dubia* (water flea): four/year**

Additional Requirements (including WET Limits) Rationale/Comments Concerning Permitting:
WET Limits are appropriate.

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

Attachment 6

Compliance with the Oklahoma Water Quality Standards for Zinc

A. Aquatic life criteria

$$1. \text{ Acute criterion for Zinc} = e^{(0.473[\ln(\text{hardness})] + 0.8604)}$$

$$\text{Chronic criterion for Zinc} = e^{(0.473[\ln(\text{hardness})] + 0.7614)}$$

$$\text{Mean hardness for stream segment 121700} = 106.55 \text{ mg/l}$$

$$\text{So, Acute criterion} = 123.48 \text{ } \mu\text{g/l}$$

$$\text{Chronic criterion} = 111.85 \text{ } \mu\text{g/l}$$

$$2. Q^* = Q_e/Q_u$$

where,

$$Q_e - \text{design flow} = 10.35 \text{ cfs(Outfall 001), } 21.56 \text{ cfs(Outfall 001)}$$

$$Q_u - 7Q_2 \text{ of the receiving stream, or, } 1 \text{ cfs, if } 7Q_2 \text{ unknown} = 1 \text{ cfs}$$

$$\text{So, } Q^* = 10.35/1 = 10.35 \text{ (Outfall 001)}$$

$$Q^* = 21.56/1 = 21.56 \text{ (Outfall 001)}$$

$$3. \text{ For } Q^* > 0.333,$$

C – maximum concentration on the mixing zone boundary = C95, where

C95 – the 95th percentile effluent concentration, estimated as 2.13 X C mean

$$\text{So, } C = C95 = 83.33 \text{ mg/l}$$

No potential for exceeding acute/chronic criteria

B. There is no WQ Human Health Criteria for Zinc so no evaluation is needed.

Pretreatment Attachments
(get package from Cabinet if necessary)



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

**RESPONSE TO COMMENTS
FINAL PERMIT DECISION**

This is our response to comments received on the subject final permit in accordance with regulations promulgated at 40 CFR Part 124.17.

Permit No. : AR0043397
Applicant : City of Rogers
Prepared by : Marysia Jastrzebski
Permit Action : Final permit decision and response to comments received on the draft permit publicly noticed on October 14, 2005
Date Prepared : January 30, 2006

The following comments have been received on the draft permit.

Letter from Jon L. Craig, Director, Water Quality Division, Oklahoma Department of Environmental Quality (ODEQ) to Jastrzebski, ADEQ dated November 14, 2005 (Issues #1-4)

Letter from Cindy Osborne, Department of Arkansas Heritage to Jastrzebski, ADEQ, dated November 14, 2005 (Issue # 5)

E-mail from Mike Lawrence, City of Rogers to Mo Shafii, ADEQ, dated January 30, 2006 (Issue #6)

I. Response to issues raised

ISSUE #1

ODEQ submitted the following comment : “The Fact Sheet does not discuss the potential impacts the proposed permit might have on the water quality of the Illinois River in Oklahoma. The State of Arkansas is aware that this is of particular concern since the Illinois River is designated as a Scenic River in Oklahoma and therefore has more stringent criteria and antidegradation protections. The Fact Sheet should include a discussion of the potential impacts of the proposed permit on downstream water quality, which in this case includes the waters of both Oklahoma and Arkansas, and should demonstrate that the proposed permit limits will result in compliance with Oklahoma’s Water Quality Standards.”

RESPONSE #1

The Department has considered the fact that this discharge will eventually reach the Illinois River and the State of Oklahoma. As discussed in the Fact Sheet, page 2, Paragraph 6.a.i. and pages 10 and 11, Paragraph 11.c.i. (Phosphorus), the effluent limitations for Total Phosphorus comply with the December 18, 2003, Statement of Joint Principles and Actions between Arkansas and Oklahoma.

Furthermore, a detailed comparison of the priority pollutant scan(PPS) and the Oklahoma Water Quality Standards can be found on page 17, paragraph 11. d. viii of the Fact Sheet.

There are no changes to the final permit based on this comment.

ISSUE #2

ODEQ submitted the following comment: “The Fact Sheet states that sludge will be transported offsite for land application. The legal description of the disposal site(s) is given but without the proper maps the DEQ is not sure whether the site(s) are located within the Illinois River watershed. Part III of the permit has standard language with limited restrictions for land application and offsite disposal of nutrient laden sewage sludge within the Illinois River watershed is counter productive to the overall goals of nutrient and phosphorus reduction. In order to insure that sludge is not applied within the Illinois River watershed the sludge language in the final permit should include limitations to either exclude land application completely or to exclude land application in the Illinois River and Spavinaw Creek watersheds.”

RESPONSE #2

The Department appreciates the comments made by Oklahoma. ADEQ considers land application of biosolids a viable and beneficial disposal method provided it is done in accordance with the NPDES permit and federal biosolids regulations. The City of Rogers operates a well managed land application program in accordance with state and federal requirements. The City of Rogers will have to comply with the nutrient regulations contained in Title 22, “Rules Governing the Arkansas Soil Nutrient and Poultry Litter Application and Management Program”, promulgated by the Arkansas Natural Resources Commission for designated nutrient surplus areas. This regulation requires land application of any nutrient source to be done at a protective rate based on phosphorus content of the source and conducted according to a waste management plan approved by the District Conservation Board. In addition, Rogers monitors the water quality in the Osage creek above and below the designated land application sites as an added protection. ADEQ feels that the requirements for disposal of the bio-solids in the proposed NPDES permit are adequate and protective of the environment.

There are no changes to the final permit based on this comment.

ISSUE #3

ODEQ submitted the following comment: “The monitoring frequencies in the permit are not adequate for a 14 million gallons per day treatment facility. Once per week monitoring for CBOD5, TSS, and NH3-N are insufficient. The monitoring frequency in the permit for total phosphorus is only twice per month which is the least stringent monitoring frequency in the permit. It is clear that the monitoring frequencies for all permitted parameters are insufficient to properly insure dependable operation and compliance with the permitted limits for a facility of this size.”

RESPONSE #3

The Department partially agrees. The monitoring frequencies for all parameters (except flow and biomonitoring) for Outfall 001 (design flow of 14 MGD) have been changed from once per week to three times per week. It is the Best Professional Judgment of the permit writer that this frequency will be representative of the monitored activity and, therefore, will be consistent with the 40 CFR Part 122.41(j).

Additionally, the upgraded facility will be eligible for reductions in monitoring/reporting frequencies based upon the USEPA's guidance document for Performance Based Reductions of NPDES Permit Monitoring Frequencies during the next permit reissuance.

ISSUE #4

ODEQ submitted the following comment: “There is no weekly average limit for total phosphorus. The fact sheet states that a weekly limit for Total Phosphorus is “impractical” and that 40 CFR Part 122.45(d) only requires weekly limits for control of toxics constituents. This is incorrect. The text of 40 CFR Part 122.45(d) is as follows:

Continuous discharges. For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as:

- (1) Maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works; and
- (2) Average weekly and average monthly discharge limitations for POTWs.

This requirement clearly applies to “all permit effluent limitations”. There is no limitation to toxic constituents. Weekly limits are included for CBOD5, pH, fecal coliform and TSS. Weekly limitations for phosphorus have been included in other recent ADEQ permits as well. Inclusion in this permit is no different and can not be considered “impracticable”.

The fact sheet also states without providing and support that short-term fluctuations in phosphorus have no increased impact on receiving streams and that the thirty-day average phosphorus limits provide adequate protection. Two samples taken in thirty days do not give an adequate picture of either the treatment efficiency or the potential impact to the receiving stream.”

RESPONSE #4

The Department has considered the comment and will change the monitoring frequency. A weekly average limitation for Total Phosphorus has been included in the final permit in accordance with 40 CFR 122.45 (d)(2).

ISSUE #5

The Department of Arkansas Heritage submitted the following comment: “The following species of conservation concern are known to occur in Osage Creek at or within five miles downstream of the outfall (occurrences mapped within one mile downstream have been marked with and “*”):

Etheostoma micropeca, least darter - state concern*

..... This letter was intended to make the Department and the applicant aware that sensitive resources may occur in the area. It was not intended as an objection to the issuance of the permit.”

RESPONSE #5

The Department acknowledges the receipt of this comment. There are no changes to the final permit based on this comment.

ISSUE #6

The permittee requested correction of the narrative description of the facility location. This revision is necessary due to the fact that there has been a street name change that affects the directions to the facility portion of the permit.

RESPONSE #6

The Department has revised the cover page of the permit.