Permit Number: AR0021768
AFIN: 58-00105

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

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

City Corporation
Russellville Water and Sewer System

is authorized to discharge treated municipal wastewater from a facility located as follows: 404 Jimmy Lile Road, Russellville, AR 72802, south of the city of Russellville, two miles south of Highway 64 in Pope County, Arkansas. The applicant's mailing address is: P.O. Box 3186, Russellville, AR 72811.

Facility Coordinates: Latitude: 35° 14' 56" N; Longitude: 93° 06' 58" W

Receiving stream: Whig Creek, thence to the Arkansas River in Segment 3F of the Arkansas River Basin.

The permitted outfall is located at the following coordinates:

Outfall 001: Latitude: 35° 14' 50" N; Longitude: 93° 06' 45" W

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

ADEQ Corrections and Response to Comments are attached to this permit.

Effective Date: September 1, 2016
Expiration Date: August 31, 2021

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

8/17/16
Issue Date

**PART I**
**PERMIT REQUIREMENTS**

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

During the period beginning on the effective date and lasting until three (3) years from the effective date, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

| **Effluent Characteristics** | **Discharge Limitations** | | | **Monitoring Requirements** | |
|---|---|---|---|---|---|
| | Mass (lb/day, unless otherwise specified) | Concentration (mg/l, unless otherwise specified) | | Frequency | Sample Type |
| | Monthly Avg. | Monthly Avg. | 7-Day Avg. | | |
| Flow | N/A | Report, MGD | Report, MGD (Daily Maximum) | once/day | totalizing meter |
| Overflows | Monthly Total SSOs (occurrences/month) | | | See Comments[1] | |
| Overflow Volume | Monthly Total Volume of SSOs (gallons/month) | | | See Comments[1] | |
| Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) | | | | | |
| (May-Oct) | 608.8 | 10.0 | 15.0 | once/weekday | composite |
| (Nov-Apr) | 913.2 | 15.0 | 22.5 | once/weekday | composite |
| Total Suspended Solids (TSS) | | | | | |
| (May-Oct) | 913.2 | 15.0 | 22.5 | once/weekday | composite |
| (Nov-Apr) | 1217.6 | 20.0 | 30.0 | once/weekday | composite |
| Ammonia Nitrogen ($NH_3$-N) | | | | | |
| (April-Oct) | 133.9 | 2.2 | 5.6 | once/weekday | composite |
| (Nov-March) | 243.5 | 4.0 | 6.0 | once/weekday | composite |
| Dissolved Oxygen (DO) | N/A | 6.0 (Inst. Min.) | | once/weekday | grab |
| Fecal Coliform Bacteria (FCB) | N/A | (colonies/100ml) | | once/weekday | grab |
| | | 1000 | 2000 | | |
| Total Residual Chlorine (TRC)[3,6,7] | N/A | < 0.1 (Inst. Max.) | | once/weekday | grab |
| Nitrate ($NO_3$-N) | 542.0 | 10.0 | 15.0 | once/weekday | composite |
| Arsenic, Total Recoverable[2,5] | Report | Report | Report | once/quarter | composite |
| Copper, Total Recoverable[2] | 0.45 | 9.2 µg/l | 18.5 µg/l | once/month | composite |
| Mercury, Total Recoverable[2] | 0.00082 | 0.0134 µg/l | 0.0269 µg/l | once/month | composite |
| Zinc, Total Recoverable[2] | 5.2 | 85.5 µg/l | 171.6 µg/l | once/month | composite |
| pH | N/A | Minimum 6.0 s.u. | Maximum 9.0 s.u. | once/weekday | grab |

| **Effluent Characteristics** | **Discharge Limitations** | | | **Monitoring Requirements** | |
|---|---|---|---|---|---|
| | Mass (lb/day, unless otherwise specified) | Concentration (mg/l, unless otherwise specified) | | Frequency | Sample Type |
| | Monthly Avg. | Monthly Avg. | 7-Day Avg. | | |
| Chronic WET Testing[4] | N/A | Report | | once/quarter | composite |
| **Pimephales promelas (Chronic)[4]** | | 7-Day Average | | | |
| Pass/Fail Lethality (7-day NOEC) TLP6C | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Pass/Fail Growth (7-day NOEC)TGP6C | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Survival (7-day NOEC) TOP6C | | Report % | | once/quarter | composite |
| Coefficient of Variation (Growth) TQP6C | | Report % | | once/quarter | composite |
| Growth (7-day NOEC) TPP6C | | Report % | | once/quarter | composite |
| **Ceriodaphnia dubia (Chronic)[4]** | | 7-Day Average | | | |
| Pass/Fail Lethality (7-day NOEC) TLP3B | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Pass/Fail production (7-day NOEC)TGP3B | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Survival (7-day NOEC) TOP3B | | Report % | | once/quarter | composite |
| Coefficient of Variation (Reproduction) TQP3B | | Report % | | once/quarter | composite |
| Reproduction (7-day NOEC) TPP3B | | Report % | | once/quarter | composite |

[1] See Condition No. 5 of Part II (SSO Condition). If there are no overflows during the entire month, report "zero" (0).
[2] See Condition No. 9 of Pat II (Metals Condition).
[3] See Condition No. 10 of Part II (TRC Condition).
[4] See Condition No. 11 of Part II (WET Testing Condition).
[5] Monitoring required only for one year from the effective date of the permit. See Condition No. 12 of Part II (Arsenic Condition).
[6] TRC must be measured using any approved test method established in 40 CFR 136 capable of meeting a detection level of 0.033 mg/l or lower. If TRC is not detected at the required detection level (i.e., lab result is "ND"), report "0" on the DMR. Report the detection level achieved if TRC is not detected using a higher detection level. Report the concentration if TRC is detected and measured in the sample.
[7] The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling.

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

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples for flow shall be taken by using the established flow meter and all other samples shall be taken by using the automatic sampler at the effluent chamber, after the chlorine contact chamber.

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

During the period beginning three (3) years from the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

| **Effluent Characteristics** | **Discharge Limitations** | | | **Monitoring Requirements** | |
|---|---|---|---|---|---|
| | Mass (lb/day, unless otherwise specified) | Concentration (mg/l, unless otherwise specified) | | Frequency | Sample Type |
| | Monthly Avg. | Monthly Avg. | 7-Day Avg. | | |
| Flow | N/A | Report, MGD | Report, MGD (Daily Maximum) | once/day | totalizing meter |
| Overflows | Monthly Total SSOs (occurrences/month) | | | See Comments[1] | |
| Overflow Volume | Monthly Total Volume of SSOs (gallons/month) | | | See Comments[1] | |
| Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) | | | | | |
| (May-Oct) | 608.8 | 10.0 | 15.0 | once/weekday | composite |
| (Nov-Apr) | 913.2 | 15.0 | 22.5 | once/weekday | composite |
| Total Suspended Solids (TSS) | | | | | |
| (May-Oct) | 913.2 | 15.0 | 22.5 | once/weekday | composite |
| (Nov-Apr) | 1217.6 | 20.0 | 30.0 | once/weekday | composite |
| Ammonia Nitrogen ($NH_3$-N) | | | | | |
| (April-Oct) | 133.9 | 2.2 | 5.6 | once/weekday | composite |
| (Nov-March) | 243.5 | 4.0 | 6.0 | once/weekday | composite |
| Dissolved Oxygen (DO) | N/A | 6.0 (Inst. Min.) | | once/weekday | grab |
| Fecal Coliform Bacteria (FCB) | N/A | (colonies/100ml) | | once/weekday | grab |
| | | 1000 | 2000 | | |
| Total Residual Chlorine (TRC)[3,6,7] | N/A | 0.011 (Inst. Max.) | | once/weekday | grab |
| Nitrate ($NO_3$-N) | 542.0 | 10.0 | 15.0 | once/weekday | composite |
| Arsenic, Total Recoverable[2,5] | Report | Report | Report | once/quarter | composite |
| Copper, Total Recoverable[2] | 0.45 | 9.2 µg/l | 18.5 µg/l | once/month | composite |
| Mercury, Total Recoverable[2] | 0.00082 | 0.0134 µg/l | 0.0269 µg/l | once/month | composite |
| Zinc, Total Recoverable[2] | 5.2 | 85.5 µg/l | 171.6 µg/l | once/month | composite |
| pH | N/A | Minimum 6.0 s.u. | Maximum 9.0 s.u. | once/weekday | grab |
| Chronic WET Testing[4] | N/A | Report | | once/quarter | composite |

| **Effluent Characteristics** | **Discharge Limitations** | | | **Monitoring Requirements** | |
|---|---|---|---|---|---|
| | Mass (lb/day, unless otherwise specified) | Concentration (mg/l, unless otherwise specified) | | Frequency | Sample Type |
| | Monthly Avg. | Monthly Avg. | 7-Day Avg. | | |
| **Pimephales promelas (Chronic)**[4] | | 7-Day Average | | | |
| Pass/Fail Lethality (7-day NOEC) TLP6C | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Pass/Fail Growth (7-day NOEC)TGP6C | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Survival (7-day NOEC) TOP6C | | Report % | | once/quarter | composite |
| Coefficient of Variation (Growth) TQP6C | | Report % | | once/quarter | composite |
| Growth (7-day NOEC) TPP6C | | Report % | | once/quarter | composite |
| **Ceriodaphnia dubia (Chronic)**[4] | | 7-Day Average | | | |
| Pass/Fail Lethality (7-day NOEC) TLP3B | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Pass/Fail production (7-day NOEC)TGP3B | | Report (Pass=0/Fail=1) | | once/quarter | composite |
| Survival (7-day NOEC) TOP3B | | Report % | | once/quarter | composite |
| Coefficient of Variation (Reproduction) TQP3B | | Report % | | once/quarter | composite |
| Reproduction (7-day NOEC) TPP3B | | Report % | | once/quarter | composite |

[1] See Condition No. 5 of Part II (SSO Condition). If there are no overflows during the entire month, report "zero" (0).
[2] See Condition No. 9 of Pat II (Metals Condition).
[3] See Condition No. 10 of Part II (TRC Condition).
[4] See Condition No. 11 of Part II (WET Testing Condition).
[5] Monitoring required only for one year from the effective date of the permit. See Condition No. 12 of Part II (Arsenic Condition).
[6] TRC must be measured using any approved test method established in 40 CFR 136 capable of meeting a detection level of 0.033 mg/l or lower. If TRC is not detected at the required detection level (i.e., lab result is "ND"), report "0" on the DMR. Report the detection level achieved if TRC is not detected using a higher detection level. Report the concentration if TRC is detected and measured in the sample.
[7] The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling.

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

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples for flow shall be taken by using the established flow meter and all other samples shall be taken by using the automatic sampler at the effluent chamber, after the chlorine contact chamber.

## SECTION B. PERMIT COMPLIANCE SCHEDULE

The permittee shall achieve compliance with the permit requirements in accordance with the following schedule:

1. Within sixty (60) days of the effective date of this permit, the permittee shall submit: (1) a **WRITTEN CERTIFICATION** that a technical evaluation has demonstrated that the existing technically based local limits (TBLLs) 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, worker health and safety problems, and sludge contamination, (2) a **WRITTEN NOTIFICATION** that a technical evaluation revising the current TBLLs will be submitted within 12 months of the effective date of this permit.

2. Compliance with the Final Effluent Limitations for Total Residual Chlorine (TRC) is required three years after the effective date of the permit. The permittee shall submit reports addressing the progress towards attaining the Final Effluent Limitations for TRC according to the following schedule:

| ACTIVITY | DUE DATE |
|---|---|
| Progress Report[1,2] | One (1) year from the effective date |
| Progress Report[1,3] | Two (2) years from the effective date |
| Achieve Final Compliance[1,4] | Three (3) years from the effective date |

[1] If the permittee is already in compliance with the final permit limit, only documentation demonstrating compliance with the final limit will be required for the progress report.

[2] If the permittee is not in compliance with the Final Limitation following one (1) year of sampling, the initial Progress Report must detail how the permittee plans to come into compliance with the TRC limit within the remaining two (1) years of the Interim period. Options must be provided that were considered along with which option* was selected. Any Best Management Practices (BMPs) that have been instituted to reduce the TRC levels in the effluent must also be discussed. If a study will be performed, a milestone schedule for the study must be provided.

* The permittee has the option to undertake any study deemed necessary to meet the final limitation during the interim period. Any additional treatment (including chemical addition) must be approved and construction approval granted prior to final installation.

[3] The second Progress Report must contain an update on the status of the chosen option from the initial Progress Report. If the facility is not meeting any of the milestones provided in the initial Progress Report, the facility must update the milestone schedule to show how the final limits will be met by the deadline.

[4] A final Progress Report must be submitted no later than 30 days following the final compliance date and include a certification that the final effluent limits were met on the effective date and that the limits are still being met.

All progress reports must be submitted to the Department at the following address:

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

# PART II
# OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be licensed as Class IV by the State of Arkansas in accordance with APCEC Regulation No. 3.

2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) and Total Suspended Solids (TSS) shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102, as adopted by reference in APCEC Regulation No. 6.

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

4. Other Specified Monitoring Requirements

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

   - The monitoring and analytical instruments are consistent with accepted scientific practices.
   - The requests shall be submitted in writing to the Permits Branch of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5.
   - All associated devices are installed, calibrated, and maintained to ensure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Assurance/Quality Control (QA/QC) 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. The ADEQ must be notified in writing and the permittee must receive written approval from the ADEQ if the permittee decides to return to the original permit monitoring requirements.

5. Sanitary Sewer Overflow (SSO) Reporting Requirements:

All SSOs are prohibited.

A. A sanitary sewer overflow is any spill, release, or diversion of wastewater from a sanitary sewer collection system including:

(1) Any overflow, whether it discharges to the waters of the State or not.
(2) An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the State.

B. 24-hour Reporting:

Overflows that endanger health or the environment shall be orally reported to the Enforcement Branch of the Office of Water Quality by telephone (501-682-0638) or by e-mail, waterenfsso@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance. At a minimum, the following information shall be reported:

(1) Permit number and AFIN
(2) Location(s) of overflow
(3) Receiving water (if there is one)
(4) Cause of overflow
(5) Estimated volume (gallons) of overflow
(6) Total duration of overflow

C. 5-day Follow-Up Written Web Reporting:

If the "total duration of overflow" is unknown when the 24-hour SSO online report is submitted, then a follow-up report (5-day report) giving a detailed account of the overflow and the steps taken to resolve it must be submitted within 5 days of discovering the overflow.

A 5-day follow-up written report can be filled-in or downloaded from the ADEQ Office of Water Quality Enforcement Branch web page at:

https://www.adeq.state.ar.us/water/enforcement/sso/submit.aspx

D. 24-hour and 5-day Reporting:

The 24-hour reporting also can be filled in or downloaded from the ADEQ Office of Water Quality Enforcement Branch web page at the above web address. If all information required under Item B of this condition is provided with the 24-hour report, then the 5-day follow-up report is not required.

E. Reporting for All SSOs on DMR

**At the end of the month, total the daily occurrences and volumes from all locations on your system and report this number on the DMR.** For counting occurrences, each location on the sanitary sewer system where there is an overflow, spill, release, or diversion of wastewater on a given day is counted as one occurrence. For example, if on a given day overflows occur from a manhole at one location and from a damaged pipe at another location then you should record two occurrences for that day.

6. Best Management Practices (BMPs), as defined in Part IV.6, must be implemented for the facility along with the collection system to prevent or reduce the pollution of waters of the State from stormwater runoff, spills or leaks, sludge or waste disposal, or drainage from raw sewage. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

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**, modified on **March 10, 1992** and once again modified on **July 29, 2012** to be compliant with the Streamlining revisions to the Federal Pretreatment Regulations in 40 CFR 403. 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. The permittee must inspect and sample the effluent from each Significant Industrial User in accordance with 40 CFR 403.8(f)(2)(v). 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(v), this control shall be achieved through individual control mechanisms, in accordance with 40 CFR 403.8(f)(1)(iii). 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, including Best Management Practices, 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; and

f. Requirements to control slug discharges, if determined by the POTW to be necessary.

(5) The permittee shall evaluate, whether each Significant Industrial User needs a plan or other action to control slug discharges, in accordance with 40 CFR 403.8(f)(2)(vi);

(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 ADEQ.

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). POTWs may develop Best Management Practices (BMPs) to implement paragraphs 40 CFR 403.5 (c)(1) and (c)(2). Such BMPs shall be considered local limits and Pretreatment Standards. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

The permittee shall submit, within sixty (60) days of the effective date of this permit, (1) a **WRITTEN CERTIFICATION** that a technical evaluation has demonstrated that the existing technically based local limits (TBLLs) 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, worker health and safety problems, and sludge contamination, (2) a **WRITTEN NOTIFICATION** that a technical evaluation revising the current TBLLs 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/year and the toxic pollutants in Table III at least 4 times/year (quarterly). 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 4 times/year (quarterly) on both the influent and the effluent.

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 (the Pretreatment "Reporting Year") 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)(viii) or criteria established in the approved POTW pretreatment program. This list is to be published annually, during the month of **February**, in the newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW.

In addition, by 4:30 pm (if electronically submitted) OR postmarked on or before the last business day in the month of **February**, the permittee shall submit an updated pretreatment program status report to the ADEQ containing the following information:

(1) An updated list of all significant industrial users. The list must also identify:

a. Industrial Users subject to the following categorical Pretreatment Standards [Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (40 CFR Part 414), Petroleum Refining (40 CFR Part 419), and Pesticide Chemicals (40 CFR Part 455)] and for which the Control Authority has chosen to use the concentration-based standards rather than converting them to flow-based mass standards as allowed at 40 CFR 403.6(c)(6).

b. Categorical Industrial Users subject to concentration-based standards for which the Control Authority has chosen to convert the concentration-based standards to equivalent mass limits, as allowed at 40 CFR 403.6(c)(5).

c. Best Management Practices or Pollution Prevention alternatives required by a categorical Pretreatment Standard or as a local limit requirement that are implemented and documentation to demonstrate compliance, as required at 40 CFR 403 (b), (e), and (h).

(2) For each industrial user listed the following information shall be included:

a. Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) 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:

i. total number of inspections performed;

ii. total number of sampling visits made;

d. Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:

i. Compliant (C) - no violations during the previous 12 month period;

ii. Non-compliant (NC) - one or more violations during the previous 12 months but does not meet the criteria for significantly noncompliant industrial users;

iii. Significant Noncompliance (SNC) - in accordance with requirements described in paragraph D above; and

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;

i. 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;

ii. 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;

iii. The results of all influent and effluent analyses performed pursuant to paragraph C above;

iv. An influent/effluent summary chart containing the monthly average water quality based effluent concentration demonstrating compliance with permit limits or the water quality levels not to exceed as developed in the permittee's approved technically based local limits document.

v. The information requested may be submitted in tabular form as per the example tables provided for your convenience (See Attachment A, B and C); and

vi. A copy of the newspaper publication of the significantly noncompliant industrial users giving the name of the newspaper and the date published;

E. The permittee shall provide adequate notice of the following:

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

(2) Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

Adequate notice shall include information on (1) the quality and quantity of effluent to be introduced into the treatment works, and (2) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

8. Bio-solids Practices

The sludge produced at the treatment plant is aerobically digested, dewatered in a sludge filter press, and may be land applied in bulk under No-Discharge Permit No. 5126-W. Sludge that is additionally treated through lime stabilization to Class A - "Exceptional Quality" (EQ) bio-solid standards may be sold or given away in bags or other containers in accordance with 40 CFR 503.

9. Metals

The permittee may use any EPA approved method, based on 40 CFR Part 136, provided the minimum quantification level (MQL) for the chosen method is equal to or less than what has been specified in chart below:

| Pollutant | MQL (µg/l) |
|---|---|
| Arsenic, Total Recoverable | 0.5 |
| Copper, Total Recoverable | 0.5 |
| Zinc, Total Recoverable | 20 |
| Mercury, Total Recoverable | 0.005 |

The permittee may develop a matrix-specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. A matrix is defined as an environment or material in which something develops; a surrounding medium or structure (e.g., the effluent discharged from a wastewater facility). For any pollutant for which the permittee determines a matrix-specific MDL, the permittee shall send to the ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a matrix-specific MDL was correctly calculated. A matrix-specific MQL shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

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

10. Total Residual Chlorine (TRC)

The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling. To demonstrate compliance with the TRC limit, the permittee may use any EPA approved method, based on 40 CFR Part 136, provided the minimum quantification level (MQL) for the chosen method is equal to or less than what has been specified in the chart below:

| Pollutant | MQL (mg/l) |
|---|---|
| TRC | 0.033 |

The permittee may develop a matrix-specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. A matrix is defined as an environment or material in which something develops; a surrounding medium or structure (e.g., the effluent discharged from a wastewater facility). For any pollutant for which the permittee determines a matrix-specific MDL, the permittee shall send to the ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a matrix-specific MDL was correctly calculated. A matrix-specific MQL shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

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

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

A. SCOPE AND METHODOLOGY

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

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

*Ceriodaphnia dubia* chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

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

(2) The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

(3) This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

B. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

If a frequency reduction, as specified in Item F, has been granted and any subsequent valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit. In addition:

(1) Part I Testing Frequency Other Than Monthly

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

b. IF LETHAL EFFECTS HAVE BEEN DEMONSTRATED: If any of the additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Lethal Toxicity Reduction Evaluation ($TRE_L$) requirements as specified in Item E of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.

c. IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED: If any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation ($TRE_{SL}$) requirements as specified in Item E of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required for failure to perform the required retests.

d. The provisions of Item B.1.a are suspended upon submittal of the TRE Action Plan.

(2) Part I Testing Frequency of Monthly

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

C. REQUIRED TOXICITY TESTING CONDITIONS

(1) Test Acceptance

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

a. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.

b. The mean number of *Ceriodaphnia dubia* neonates produced per surviving female in the control (0% effluent) must be 15 or more.

c. 60% of the surviving control females must produce three broods.

d. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.

e. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the *Ceriodaphnia dubia* reproduction test; the growth and survival endpoints of the Fathead minnow test.

f. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the *Ceriodaphnia dubia* reproduction test; the growth and survival endpoints in the Fathead minnow test.

g. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the *Ceriodaphnia dubia* reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

h. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.

i. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for *Ceriodaphnia dubia* reproduction;

j. A PMSD range of 12 - 30 for Fathead minnow growth.

(2) Statistical Interpretation

a. For the *Ceriodaphnia dubia* survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA-821-R-02-013 or the most recent update thereof.

b. For the *Ceriodaphnia dubia* reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-821-R-02-013, or the most recent update thereof.

c. If the conditions of Test Acceptability are met in Item C.1 above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item D below.

(3) Dilution Water

a. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water where the receiving stream is classified as intermittent or where the receiving stream has no flow due to zero flow conditions.

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

i. a synthetic dilution water control which fulfills the test acceptance requirements of Item C.1 was run concurrently with the receiving water control;

ii. the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);

iii. the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item D below; and

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

(4) Samples and Composites

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

b. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

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

d. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.

e. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item D of this section

f. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in Item A.1 above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

g. If chlorination is part of the treatment process, the permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.

D. REPORTING

(1) The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA-821-R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of Part III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

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

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

a. *Pimephales promelas* (Fathead minnow)

i. 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

ii. Report the NOEC value for survival, Parameter No. TOP6C

iii. Report the NOEC value for growth, Parameter No. TPP6C

iv. If the NOEC for growth is less than the critical dilution, enter a “1”; otherwise, enter a “0” for Parameter No. TGP6C

v. Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C

b. *Ceriodaphnia dubia*

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

iv. Report the NOEC value for survival, Parameter No. TOP3B

v. Report the NOEC value for reproduction, Parameter No. TPP3B

vi. If the NOEC for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B

vii. Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

E. TOXICITY REDUCTION EVALUATIONS (TREs)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE ($TRE_{SL}$) is triggered based on three sub-lethal test failures while a lethal effects TRE ($TRE_L$) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a $TRE_{SL}$ where there are no effects at effluent dilutions of 75% or lower.

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

a. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts

Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity'_ (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

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

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

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

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

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

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

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

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

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

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

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

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

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

F. MONITORING FREQUENCY REDUCTION

(1) The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item A.1) of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Ceriodaphnia dubia*).

(2) CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in Item C.1 above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency’s Permit Compliance System section to update the permit reporting requirements.

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

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

12. Total Recoverable Arsenic

The requirement to monitor and report the Monthly Average and Daily Maximum values of Mass and Concentration of Total Recoverable Arsenic in the effluent, in accordance with the requirements in Part IA of the permit, is applicable for one year from the effective date of the permit. After the results of four (4) samples have been reported, in accordance with the above requirements, the permittee may cease the monitoring and reporting of Total Recoverable Arsenic.

# PART III
# STANDARD CONDITIONS

## SECTION A – GENERAL CONDITIONS

1. **Duty to Comply**

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

2. **Penalties for Violations of Permit Conditions**

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

3. **Permit Actions**

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

A. Violation of any terms or conditions of this permit.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by Part III.A.11 herein.

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

4. **Toxic Pollutants**

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

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

5. **Civil and Criminal Liability**

Except as provided in permit conditions for "Bypass of Treatment Facilities" (Part III.B.4), and "Upset" (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

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

7. **State Laws**

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

8. **Property Rights**

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

9. **Severability**

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

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

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

11. **Permit Fees**

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

## SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

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

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

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

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

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

3. **Duty to Mitigate**

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

4. **Bypass of Treatment Facilities**

A. Bypass not exceeding limitation

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

B. Notice

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

C. Prohibition of bypass

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

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

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

5. **Upset Conditions**

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

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

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

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

6. **Removed Substances**

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

B. Any changes to the permittee's disposal practices described in Part II of the permit will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. **Power Failure**

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

## SECTION C – MONITORING AND RECORDS

1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to 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.

Calculated Flow Measurement

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

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to 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 provided by the Department or other form/method approved in writing by the Department (e.g., electronic submittal of DMR once approved). Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month or submitted electronically by 6:00 p.m. of the 25th, following the completed reporting period beginning on the effective date of the permit. When mailing the DMRs, duplicate copies of the forms signed and certified as required by Part III.D.11 and all other reports required by Part III.D, shall be submitted to the Director at the following address:

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

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

6. **Additional Monitoring by the Permittee**

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

7. **Retention of Records**

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

8. **Record Contents**

Records and monitoring information shall include:

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

9. **Inspection and Entry**

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

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

## SECTION D – REPORTING REQUIREMENTS

1. **Planned Changes**

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

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

2. **Anticipated Noncompliance**

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

3. **Transfers**

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

4. **Monitoring Reports**

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

5. **Compliance Schedule**

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

6. **Twenty-four Hour Report**

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

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

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

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

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

7. **Other Noncompliance**

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

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

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

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

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

9. **Duty to Provide Information**

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

10. **Duty to Reapply**

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

11. **Signatory Requirements**

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

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

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

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

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

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

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

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

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

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

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

12. **Availability of Reports**

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

13. **Penalties for Falsification of Reports**

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

14. **Other Information**

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

# PART IV
# DEFINITIONS

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

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

13. **"Dissolved oxygen limit"** shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month.
    B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
14. **"E. coli"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E. coli, report the 7-Day Average as the geometric mean of all "daily discharges" within a calendar week and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, both in units of colonies per 100 ml.
15. **"Fecal Coliform Bacteria (FCB)"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the 7-Day Average as the geometric mean of all "daily discharges" within a calendar week and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, both in units of colonies per 100 ml.
16. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
17. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
18. **"Instantaneous flow measurement"** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
19. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
20. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
21. **"Monthly Average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For E. coli or Fecal Coliform Bacteria (FCB), report the Monthly Average as the geometric mean of all "daily discharges" within a calendar month (see Part IV.14 and IV.15 above, respectively).
22. **"Monitoring and Reporting"**
    When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25$^{th}$ of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25$^{th}$ of the month following the monitoring period end date.
    A. **MONTHLY:**
       is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.

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

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

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

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

23. **"National Pollutant Discharge Elimination System"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
24. **"POTW"** means a Publicly Owned Treatment Works.
25. **"Reduction of $CBOD_5$/$BOD_5$ and TSS in mg/l Formula"**
((Influent – Effluent) / Influent) × 100
26. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
27. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
28. **"7-day Average"** also known as "average weekly," means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.
29. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a

reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.

30. **Units of Measure:**
    **"MGD"** shall mean million gallons per day.
    **"mg/l"** shall mean milligrams per liter or parts per million (ppm).
    **"µg/l"** shall mean micrograms per liter or parts per billion (ppb).
    **"cfs"** shall mean cubic feet per second.
    **"ppm"** shall mean parts per million.
    **"s.u."** shall mean standard units.
31. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless of improper operations.
32. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
33. **"Weekday"** means Monday – Friday.

**Final Fact Sheet**

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for renewal of the discharge Permit Number AR0021768 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 58-00105 to discharge to Waters of the State.

1. **PERMITTING AUTHORITY.**

The issuing office is:

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

2. **APPLICANT.**

The applicant's mailing address is:

City Corporation - Russellville Water and Sewer System
P.O. Box 3186
Russellville, AR 72811

The facility address is:

City Corporation - Russellville Water and Sewer System
404 Jimmy Lile Road
Russellville, AR 72802

3. **PREPARED BY.**

The permit was prepared by:

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4. **PERMIT ACTIVITY.**

| | |
|---|---|
| Previous Permit Effective Date: | October 1, 2010 |
| Previous Permit Minor Modification Date: | July 29, 2012 |
| Previous Permit Expiration Date: | September 30, 2015 |

The permittee submitted a permit renewal application on March 4, 2015, with additional information received on March 31, 2015 and April 2, 2015. The current discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management practice
$BOD_5$ - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
$NH_3$-N - ammonia nitrogen
$NO_3$-N - nitrate nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Reg. 2 - APCEC Regulation No. 2
Reg. 6 - APCEC Regulation No. 6
Reg. 8 - APCEC Regulation No. 8
Reg. 9 - APCEC Regulation No. 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
Total Arsenic - total recoverable arsenic

Total Copper - total recoverable copper
Total Mercury - total recoverable mercury
Total Zinc - total recoverable zinc
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS - United States Geological Survey
WET - whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

Compliance and Enforcement History for this facility can be reviewed by using the following web link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0021768_Enforcement%20Compliance%20Review_20150624.pdf

5. **SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT.**

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. The Monthly Total number of Sanitary Sewer Overflows (SSOs) and the Monthly Total Volume of SSOs must be reported on the Discharge Monitoring Reports. This change will simplify the reporting procedures for the permittee. See Condition No. 5.E of Part II for further information.
2. The description of the sampling location in Part IA has been revised to include the specifications provided in the renewal application.
3. Conditions Nos. 8 and 9 in Part II of the previous permit concerning land application of bio-solids have been removed because the facility obtained coverage for this activity under No-Discharge Permit No. 5126-W.
4. The effluent limitation for Total Residual Chlorine (TRC) has been changed. See Section 13 of this Fact Sheet for further explanation.
5. Condition No. 12 in Part II of the permit has been added to require monitoring and reporting of Total Recoverable Arsenic in the effluent for one year. See Section 12.F of this Fact Sheet for more information.
6. The requirement to monitor and report for Total Phosphorus has been removed because an adequate amount of data was collected during the previous permit term for establishing a database of point source loadings of nutrients to waters of the State.

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

The outfall is located at the following coordinates based on Google Earth using WGS84:

Latitude: 35° 14' 50" N; Longitude: 93° 06' 45" W

The receiving waters named:

Whig Creek, thence to the Arkansas River in Segment 3F of the Arkansas River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 11110203 and reach #931 is a Water of the State classified for secondary contact recreation; raw water source for domestic (public and private), industrial, and agricultural water supplies; propagation of desirable species of fish and other aquatic life; and other compatible uses.

7. **303(d) LIST, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.**

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

The Arkansas River (reach #031) is on Arkansas's 2008 303(d) List of Impaired Waterbodies for not meeting water quality standards for Total Dissolved Solids (TDS). The listing of TDS is in Category 5f, which is for "waters that are not currently meeting a water quality standard. However, 'the basis for not meeting an applicable water quality standard is not caused by a pollutant, but is attributed to other types of pollution' (EPA, 2005)." APCEC Reg. 2.511(A) specifies a mineral quality criteria of 500 mg/l of TDS for this segment of the Arkansas River. The facility submitted information in the renewal application indicating an average daily discharge of 303 mg/l of TDS and a maximum daily discharge of 350 mg/l of TDS. Therefore, this discharge is being permitted because the facility has provided reasonable assurance that the discharge will not cause or contribute to violations of water quality standards.

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

The receiving stream, Whig Creek, is included in two separate TMDL reports; "Whig Creek TMDL for Nitrate," dated December 8, 2000, and "Whig Creek Basin TMDL for Copper," dated November 1, 2003. Effluent limitations based on the loadings established in the two TMDLs were included in previous permits and will be continued in the permit. The 2000 TMDL for Nitrate specifies a Waste Load Allocation (WLA) of 542.0 lb/day of $NO_3$-N for this facility. The WLA is incorporated into the permit as a Monthly Average Mass Limit of the same value. The 2003 TMDL for Copper specifies a WLA of 0.188 lb/day of dissolved copper for this facility. According to 40 CFR 122.45(c), metal limits in NPDES permits must be expressed in terms of total recoverable metal. Therefore, the WLA for dissolved copper was converted to a value of 0.45 lb/day of Total Copper, using the Translator Mechanism established in the 2000 CPP Appendix D Attachment V.III, for incorporation into the permit. The subject TMDLs can be viewed at the following web links:

Whig Creek TMDL for Nitrate (2000):

http://www2.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/whig_creek_2000_12_08.pdf

Whig Creek Basin TMDL for Copper (2003):

http://www2.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Whig_Creek_2003_11_01.pdf

B. **Endangered Species:**

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

C. **Anti-Degradation:**

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APCEC Regulation No. 2.

8. **OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION.**

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

A. Design Flow: 7.3 MGD

B. Type of Treatment: three (3) aerated flow equilization basins, bar screens, grit removal, three (3) primary clarifiers, three (3) extended aeration activated sludge basins, three (3) final clarifiers, two (2) chlorine contact basins, dechlorination, and aerobic digestion.

C. Discharge Description: treated municipal wastewater

D. Facility Status: This facility is classified as a Major municipal since the design flow of the facility listed above is greater than 1.0 MGD.

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

9. **ACTIVITY.**

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

10. **INDUSTRIAL WASTEWATER CONTRIBUTIONS.**

**INDUSTRIAL USERS**

This facility receives industrial process wastewater. The pretreatment program was approved on January 13, 1984 and modified on March 10, 1992. During the previous permit term, the facility once again modified the pretreatment program in order to comply with the "Streamlining" revisions to the Federal Pretreatment Regulations in 40 CFR 403. This most recent modification to the pretreatment program was approved on July 29, 2012.

11. **SEWAGE SLUDGE PRACTICES.**

The sludge produced at the treatment plant is aerobically digested, dewatered in a sludge filter press, and may be land applied in bulk under No-Discharge Permit No. 5126-W. Sludge that is additionally treated through lime stabilization to Class A - "Exceptional Quality" (EQ) bio-solid standards may be sold or given away in bags or other containers in accordance with 40 CFR 503.

12. **DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS.**

The Arkansas Department of Environmental Quality has determined to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR Part 403 and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

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

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

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

| Parameter | Water Quality-Based | | Technology-Based/BPJ | | Previous Permit | | Permit Limit | |
|---|---|---|---|---|---|---|---|---|
| | Monthly Avg. mg/l | 7-day Avg. mg/l | Monthly Avg. mg/l | 7-day Avg. mg/l | Monthly Avg. mg/l | 7-day Avg. mg/l | Monthly Avg. mg/l | 7-day Avg. mg/l |
| $CBOD_5$ | | | | | | | | |
| (May-Oct) | 10.0 | 15.0 | 25 | 40 | 10.0 | 15.0 | 10.0 | 15.0 |
| (Nov-Apr) | 15.0 | 22.5 | 25 | 40 | 15.0 | 22.5 | 15.0 | 22.5 |
| TSS | | | | | | | | |
| (May-Oct) | N/A | N/A | 30 | 45 | 15.0 | 22.5 | 15.0 | 22.5 |
| (Nov-Apr) | N/A | N/A | 30 | 45 | 20.0 | 30.0 | 20.0 | 30.0 |
| $NH_3$-N | | | | | | | | |
| (April-Oct) | 2.2 | 5.6 | N/A | N/A | 2.2 | 5.6 | 2.2 | 5.6 |
| (Nov-March) | 4.0 | 6.0 | N/A | N/A | 4.0 | 6.0 | 4.0 | 6.0 |
| DO | 6.0 (Inst. Min.) | | N/A | | 6.0 (Inst. Min.) | | 6.0 (Inst. Min.) | |
| FCB (col/100 ml) | 1000 | 2000 | N/A | N/A | 1000 | 2000 | 1000 | 2000 |
| TRC (Inst. Max) | 0.011 | | N/A | | < 0.1 | | 0.011 | |
| $NO_3$-N | 10.0 | 15.0 | N/A | N/A | 10.0 | 15.0 | 10.0 | 15.0 |
| Arsenic, Total (µg/l) | N/A | N/A | Report | Report | N/A | N/A | Report | Report |
| Copper, Total (µg/l) | 9.2 | 18.5 | N/A | N/A | 9.2 | 18.5 | 9.2 | 18.5 |
| Mercury, Total (µg/l) | 0.0134 | 0.0269 | N/A | N/A | 0.0134 | 0.0269 | 0.0134 | 0.0269 |
| Zinc, Total (µg/l) | 85.5 | 171.6 | N/A | N/A | 85.5 | 171.6 | 85.5 | 171.6 |
| pH | 6.0-9.0 s.u. | | 6.0-9.0 s.u. | | 6.0-9.0 s.u. | | 6.0-9.0 s.u. | |

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

| Parameter | Water Quality or Technology | Justification |
|---|---|---|
| $CBOD_5$ | Water Quality | MultiSMP Model dated October 2, 2015, CWA 402(o), and Previous Permit |
| TSS | Technology | CPP, 40 CFR 122.44(l), and Previous Permit |
| $NH_3$-N | Water Quality | Reg. 2.512 / MultiSMP Model dated October 2, 2015, CWA 402(o), and Previous Permit |
| DO | Water Quality | Reg. 2.505 / MultiSMP Model dated October 2, 2015, CWA 402(o), and Previous Permit |
| FCB | Water Quality | Reg. 2.507, CWA 402(o), and Previous Permit |

| Parameter | Water Quality or Technology | Justification |
|---|---|---|
| TRC [1] | Water Quality | Reg. 2.409, 40 CFR 122.44(l), and Previous Permit |
| $NO_3$-N | Water Quality | "Whig Creek TMDL for Nitrate" dated December 8, 2000, CWA 402(o), and Previous Permit |
| Arsenic, Total | Water Quality | 2000 CPP: Appendix D – Toxic Control Implementation Procedure, Part IV.C |
| Copper, Total | Water Quality | "Whig Creek Basin TMDL for Copper" dated November 1, 2003, Reg. 2.508, CWA 402(o), and Previous Permit |
| Mercury, Total | Water Quality | Reg. 2.508, CWA 402(o), and Previous Permit |
| Zinc, Total | Water Quality | Reg. 2.508, CWA 402(o), and Previous Permit |
| pH | Water Quality | Reg. 2.504, CWA 402(o), and Previous Permit |

[1] See Section 13 of this Fact Sheet for more information on TRC requirements.

It should be noted that no other effluent limits are being changed with this renewal cycle.

B. **Anti-backsliding**

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

The permit meets or exceeds the requirements of the previous permit.

C. **Limits Calculations**

1. Mass limits:

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

The calculation of the loadings (lb per day) for $CBOD_5$, TSS, $NH_3$-N, Mercury, and Zinc uses a design flow of 7.3 MGD and the following equation:

lb/day = Concentration (mg/l) × Flow (MGD) × 8.34

The mass limits for Nitrate and Total Copper are based on the respective Waste Load Allocations (WLAs) for this point source specified in the TMDL reports discussed in Section 7.B of this Fact Sheet. The limits in the permit must be consistent with the loadings specified in the TMDL reports according to 40 CFR 122.44(d)(1)(vii)(B).

2. 7-Day Average Limits:

   The 7-Day Average limits for $NH_3$-N (April through October) as well as $CBOD_5$ and TSS are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

   7-Day Average limits = Monthly Average limits × 1.5 – 2

   The 7-Day Average $NH_3$-N limits for the months of November through March are based on the requirements of Reg. 2.512.

   The 7-Day Average limit for FCB is based on Reg. 2.507.

   The 7-Day Average limit for TRC is based on Reg. 2.409.

   The 7-Day Average limits for Copper, Zinc, and Mercury are based on the CPP.

D. **Ammonia-Nitrogen ($NH_3$-N)**

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

The calculation of effluent limitations for Ammonia for this facility can be reviewed by using the following web link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0021768_Ammonia%20Calculations_20150729.pdf

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

The 208 Plan, developed by the ADEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary. There are no changes to the current 208 Plan.

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

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

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

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

The following items were used in calculations:

| Parameter | Value | Source |
|---|---|---|
| Discharge Flow = Q | 7.3 MGD = 11.28 cfs | Application |
| 7Q10 Critical Flow | 0.0 cfs | U.S.G.S. |
| LTA Background Flow | 0.0 cfs | Assumed to be the same as 7Q10 |
| TSS | 3.0 mg/l | 2000 CPP: Appendix D – Attachment V, TSS for Arkansas River Valley Ecoregion |
| Hardness as $CaCO_3$ | 25.0 mg/l | 2000 CPP: Appendix D – Attachment VI, Hardness for Arkansas River Valley Ecoregion |
| pH | 7.0 s.u. | Neutral pH used in evaluation since no known upstream pH data was found. |
| $C_b$, Upstream Concentration | Arsenic, Total 1.08 µg/l | Monitoring Station ID: ARK0067 |
| | Lead, Total 0.8 µg/l | Monitoring Station ID: ARK0067 |
| | Nickel, Total 5.0 µg/l | Monitoring Station ID: ARK0067 |
| Mixing Zone for chronic toxicity (percentage of 7Q10) | 67% (7Q10 < 100 cfs) | Reg. 2.508 and 2000 CPP: Appendix D – Mixing Zone Policy |
| Zone of Initial Dilution (ZID) for acute toxicity (percentage of 7Q10) | 33% (7Q10 < 100 cfs) | Reg. 2.508 and 2000 CPP: Appendix D – Mixing Zone Policy |

The following pollutants were reported above detection levels:

| Pollutant | Concentration Reported, µg/l | MQL, µg/l |
|---|---|---|
| Arsenic, Total | 0.82[1] | 0.5 |
| Copper, Total | 5.66[2] | 0.5 |
| Lead, Total | 0.36[1] | 0.5 |
| Mercury, Total | 0.0045[2] | 0.005 |
| Nickel, Total | 7.8[1] | 0.5 |

| Pollutant | Concentration Reported, µg/l | MQL, µg/l |
|---|---|---|
| Zinc, Total | 37.1[2] | 20 |

[1] Geometric mean of four (4) values.
[2] These pollutants were reported above detection levels; however, an evaluation was not performed as the permit already contains limitations for these pollutants.

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

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0021768_PPS_20150921.pdf

1. **Aquatic Toxicity Evaluation**

a. Acute Criteria Evaluation

| Pollutant | Concentration Reported ($C_e$) µg/l | $C_e \times 2.13$[1] | Instream Waste Concentration (IWC) | Criteria[2] | Reasonable Potential (Yes/No) |
|---|---|---|---|---|---|
| | | | Acute, µg/l | Acute, µg/l | |
| Lead, Total | 0.36 | 0.77 | 0.77 | 62.3 | No |
| Nickel, Total | 7.8 | 16.61 | 16.61 | 782.33 | No |

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.

b. Chronic Criteria Evaluation

| Pollutant | Concentration Reported ($C_e$) µg/l | $C_e \times 2.13$[1] | Instream Waste Concentration (IWC) | Criteria[2] | Reasonable Potential (Yes/No) |
|---|---|---|---|---|---|
| | | | Chronic, µg/l | Chronic, µg/l | |
| Lead, Total | 0.36 | 0.77 | 0.77 | 2.43 | No |
| Nickel, Total | 7.8 | 16.61 | 16.61 | 86.88 | No |

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.

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

| Pollutant | Concentration Reported ($C_e$) µg/l | $C_e \times 2.13$[1] | Instream Waste Concentration (IWC) | Criteria[2] | Reasonable Potential (Yes/No) |
|---|---|---|---|---|---|
| Arsenic, Total | 0.82 | 1.75 | 1.75 | 1.4[3] | Yes |
| Lead, Total | 0.36 | 0.77 | 0.77 | 50[4] | No |
| Nickel, Total | 7.8 | 16.61 | 16.61 | 100[4] | No |

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criteria are from Reg. 2.508 unless otherwise specified.
[3] Criterion is adapted from "National Recommended Water Quality Criteria: 2015 – Human Health Criteria Calculation Matrix", EPA. The respective WQC from the noted reference are Consumption of Organism Only values. The values from the reference are for a lifetime risk factor of $10^{-6}$. These values have been multiplied by 10 to correspond to human health criteria lifetime risk factor of $10^{-5}$ as stated in Reg. 2.508.
[4] Criteria are from EPA Quality Criteria for Water [The Gold Book] (1986).

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

The CPP requires that for all pollutants for which there are no applicable state water standards, IWCs are to be compared with the EPA Human Health Criteria (fish consumption only). If dilution calculations show that the in-stream concentration exceeds these criteria, the permit will require the permittee to monitor and report for the pollutant of concern once per quarter for one year only. A reopener clause has been included in the permit (see Part II.4) to provide permit limits if state water quality standards are developed for the applicable pollutants, and the data shows that there is a reasonable potential for the discharge to violate those water quality standards.

13. **TOTAL RESIDUAL CHLORINE (TRC) REQUIREMENTS.**

During the public comment period of the draft permit, the permittee submitted a comment on the revised TRC limit and provided the comprehensive set of TRC monitoring data collected over the previous permit term. The permittee requested that this data be used in the evaluation of the revised limit, rather than the submitted DMR data, which only included the monthly maximum TRC values. A review of the subject monitoring data shows an average TRC concentration of 0.033 mg/l in the effluent. The EPA considers TRC concentrations at the edge of the mixing zone higher than 0.011 mg/l (Chronic Criteria) to be toxic to aquatic organisms. Since the receiving stream has a 7Q10 of 0 cfs, no mixing occurs and the

concentration seen at the edge of the mixing zone at the facility during this time was higher than the aforementioned toxicity criteria (0.033 mg/l > 0.011 mg/l). Therefore, the effluent limitation for TRC is being reduced from <0.1 mg/l to 0.011 mg/l in order to protect water quality for all beneficial uses. The TRC limit must be met at end-of-pipe to comply with APCEC Reg. 2.409, which forbids the discharge of toxic pollutants in amounts that are toxic.

Typically, a schedule of compliance is not included if the facility dechlorinates prior to discharge. However, the review of the DMR data submitted during the previous permit term showed numerous effluent violations, which are currently being addressed through CAO LIS No. 09-146-001. Additionally, decreasing the TRC concentration in the effluent from 0.033 mg/l to 0.011 mg/l would call for an approximate 67% reduction and this amount of change may not be immediately feasible. Therefore, a schedule of compliance is included in Part IB of the permit to allow for any operational adjustments that may be required to meet the final effluent limitation for TRC.

The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling. To demonstrate compliance with the TRC limit, the permittee must determine the effluent concentration by using any EPA approved test method established in 40 CFR Part 136 capable of meeting a detection level of 0.033 mg/l or lower. Non-detection (ND) of TRC by an approved test method at the required MQL will be considered in compliance with the permit limit of 0.011 mg/l.

14. **WHOLE EFFLUENT TOXICITY.**

Section 101(a)(3) of the Clean Water Act states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

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

| TOXICITY TESTS | FREQUENCY |
|---|---|
| Chronic WET | once/quarter |

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs ($ft^3$/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit.

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

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

Qd = Design flow = 7.3 MGD = 11.3 cfs
7Q10 = 0.0 cfs
Qb = Background flow = (0.67)* × 7Q10 = 0.0 cfs
CD = (11.3 / (11.3 + 0.0)) × 100 = 100%
* Mixing zone value is based on the 2000 CPP: Appendix D – Mixing Zone Policy, p. D-11.

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 100% effluent. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen conductivity, and alkalinity shall be reported according to EPA-821-R-02-013, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

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

<u>Administrative Records</u>

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

| | | | | | |
|---|---|---|---|---|---|
| Permit Number: | AR0021768 | AFIN: | 58-00105 | Outfall Number: | 001 |
| Date of Review: | 9/17/2015 | Reviewer: | M. Barnett | | |
| Facility Name: | City Corporation - Russellville Water and Sewer | | | | |
| Previous Dilution series: | 32, 42, 56, 75, 100 | Proposed Dilution Series: | 32, 42, 56, 75, 100 | | |
| Previous Critical Dilution: | 100 | Proposed Critical Dilution: | 100 | | |
| **Previous TRE activities:** | None | | | | |

| | |
|---|---|
| **Frequency recommendation by species** | |
| *Pimephales promelas* (Fathead minnow): | once per quarter |
| *Ceriodaphnia dubia* (water flea): | once per quarter |

**TEST DATA SUMMARY**

| | Vertebrate (*Pimephales promelas*) | | Invertebrate (*Ceriodaphnia dubia*) | |
|---|---|---|---|---|
| TEST DATE | Lethal NOEC | Sub-Lethal NOEC | Lethal NOEC | Sub-Lethal NOEC |
| 12/31/2010 | 100 | 100 | 100 | 100 |
| 6/30/2011 | 100 | 100 | 100 | 100 |
| 9/30/2011 | 100 | 100 | 100 | 100 |
| 12/31/2011 | 100 | 100 | 100 | 100 |
| 3/31/2012 | 100 | 100 | 100 | 100 |
| 6/30/2012 | 100 | 100 | 100 | 100 |
| 9/30/2012 | 100 | 100 | 100 | 100 |
| 12/31/2012 | 100 | 100 | 100 | 100 |
| 3/30/2013 | 100 | 100 | 100 | 100 |
| 6/30/2013 | 100 | 100 | 100 | 100 |
| 9/30/2013 | 100 | 100 | 100 | 100 |
| 12/31/2013 | 100 | 100 | 100 | 100 |
| 3/30/2014 | 100 | 100 | 100 | 100 |
| 6/30/2014 | 100 | 100 | 100 | 100 |
| 9/30/2014 | 100 | 100 | 100 | 100 |
| 12/31/2014 | 100 | 100 | 100 | 100 |
| 3/31/2015 | 100 | 100 | 100 | 100 |
| 6/30/2015 | 100 | 100 | 100 | 100 |
| 9/30/2015 | 100 | 100 | 100 | 100 |

**REASONABLE POTENTIAL CALCULATIONS**

| | **Vertebrate Lethal** | **Vertebrate Sub-lethal** | **Invertebrate Lethal** | **Invertebrate Sub-Lethal** |
|---|---|---|---|---|
| **Min NOEC Observed** | 100 | 100 | 100 | 100 |
| **TU at Min Observed** | 1.00 | 1.00 | 1.00 | 1.00 |
| **Count** | 19 | 19 | 19 | 19 |
| **Failure Count** | 0 | 0 | 0 | 0 |
| **Mean** | 1.000 | 1.000 | 1.000 | 1.000 |
| **Std. Dev.** | 0.000 | 0.000 | 0.000 | 0.000 |
| **CV** | 0 | 0 | 0 | 0 |
| **RPMF** | 0 | 0 | 0 | 0 |
| **Reasonable Potential** | 0.000 | 0.000 | 0.000 | 0.000 |
| **100/Critical dilution** | 1.000 | 1.000 | 1.000 | 1.000 |
| **Does Reasonable Potential Exist** | No | No | No | No |

**PERMIT ACTION**

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

15. **STORMWATER REQUIREMENTS.**

The federal regulations at 40 CFR 122.26(b)(14)(ix) require major municipal dischargers to have NPDES permit coverage for stormwater discharges from the facility. These requirements include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control the quality of stormwater discharges from the facility. In lieu of the development of a SWPPP, the facility may obtain a "No Exposure" Exclusion in accordance with 40 CFR 122.26(g) if several conditions can be certified. This facility was issued stormwater permit coverage under NPDES Tracking number ARR000104.

16. **SAMPLE TYPE AND FREQUENCY.**

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

Requirements for sample type and sampling frequency for all parameters except for Arsenic have been based on the current discharge permit. The requirement for sample type for Arsenic is based on those of similar parameters and the requirement for sample frequency is based on Appendix D of the CPP.

| Parameter | Previous Permit | | Final Permit | |
|---|---|---|---|---|
| | Frequency of Sample | Sample Type | Frequency of Sample | Sample Type |
| Flow | once/day | totalizing meter | once/day | totalizing meter |
| $CBOD_5$ | once/weekday | composite | once/weekday | composite |
| TSS | once/weekday | composite | once/weekday | composite |
| $NH_3$-N | once/weekday | composite | once/weekday | composite |
| DO | once/weekday | grab | once/weekday | grab |
| FCB | once/weekday | grab | once/weekday | grab |
| TRC | once/weekday | grab | once/weekday | grab |
| $NO_3$-N | once/weekday | composite | once/weekday | composite |
| Arsenic, Total | N/A | N/A | once/quarter | composite |
| Copper, Total | once/month | composite | once/month | composite |
| Mercury, Total | once/month | composite | once/month | composite |
| Zinc, Total | once/month | composite | once/month | composite |
| pH | once/weekday | grab | once/weekday | grab |

17. **PERMIT COMPLIANCE SCHEDULE.**

A Schedule of Compliance has been included in this permit for Total Residual Chlorine (TRC). Compliance with all permit requirements is required in accordance with the schedule provided in Part IB of the permit. The Department has chosen to exercise its discretion provided for in APCEC Regulation No. 2 to allow a 3-year Schedule of Compliance for the revised TRC limit. Therefore, the TRC limit will be effective three years after the effective date of the permit. Additionally, the permittee has the option to undertake any study deemed necessary to meet the final limitations for TRC during the interim period. Any additional treatment must be approved and construction approval granted prior to final installation.

A Schedule of Compliance has also been included for this facility's pretreatment program. The permittee shall submit a written certification that a technical evaluation has demonstrated that the existing technically based local limits (TBLLs) 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, worker health and safety problems, and sludge contamination. A written notification that a technical evaluation revising the current TBLLs will be submitted. Compliance with all permit requirements is required in accordance with the schedule provided in Part IB of the permit.

18. **MONITORING AND REPORTING.**

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

19. **SOURCES.**

The following sources were used to draft the permit:

A. Application No. AR0021768 received March 4, 2015, with additional information received on March 31, 2015 and April 2, 2015.
B. Arkansas Water Quality Management Plan (WQMP).
C. APCEC Regulation No. 2.
D. APCEC Regulation No. 3.
E. APCEC Regulation No. 6 which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Reg. 6.104.
F. 40 CFR Parts 122, 125, 133, and 403.
G. Discharge permit file AR0021768.
H. Discharge Monitoring Reports (DMRs).
I. "2008 Integrated Water Quality Monitoring and Assessment Report", ADEQ.
J. "2008 List of Impaired Waterbodies (303(d) List)", ADEQ, February 2008.
K. "Whig Creek TMDL for Nitrate" dated December 8, 2000.
L. "Whig Creek Basin TMDL for Copper" dated November 1, 2003.
M. USGS StreamStats web-based program.
N. Continuing Planning Process (CPP).
O. Technical Support Document for Water Quality-based Toxic Control, EPA, March 1991.

P. CAO LIS-09-146-001.
Q. Compliance Review Memo dated June 24, 2015 from Alan Anderson.
R. MultiSMP Model dated October 2, 2015.

20. **POINT OF CONTACT.**

For additional information, contact:

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**RESPONSE TO COMMENTS**
**FINAL PERMITTING DECISION**

Permit No.: AR0021768

Applicant: City Corporation - Russellville Water and Sewer System

Prepared by: Adam Yates

The following are responses to comments received regarding the draft permit number above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17 as incorporated in APCEC Regulation 6.104(A)(5), APCEC Regulation No. 8 Administrative Procedures, and Ark. Code Ann. §8-4-203(e)(2).

**Introduction**

The above permit was submitted for public comment on March 6, 2016. The public comment period ended on April 5, 2016.

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

The following people or organizations sent comments to the ADEQ during the public notice. A total of one (1) comment was raised by one (1) commenter.

| Commenter | Number of Comments Raised |
|---|---|
| City Corporation - Russellville Water and Sewer System | 1 |

**COMMENT #1**

City Corporation respectfully requests a review of the proposed limit of 0.011 mg/l for Total Residual Chlorine (TRC) and asks that a new determination be made for the reasons cited below.

City Corporation recently constructed new dechlorination at the wastewater treatment facilities per the requirements of Consent Administrative Order (CAO) LIS-09-146. These facilities were constructed and placed into service in November of 2012, at a cost of over $650,000. The facilities were designed based on meeting the current TRC limit of 0.1 mg/l and are not capable of meeting a 0.011 mg/l limit. Had we been aware that the proposed limit would be reduced to 0.011 mg/l, we obviously would have gone in a whole different direction. If the limit is left as proposed, we will have no choice but to abandon the new facilities and design and construct new dechlorination facilities that are capable of reaching such a limit, or move to a new disinfection system that does not involve chlorine gas. This would mean that another project would have to be eliminated or reduced to add a project of this size. This decision would be unfortunate at best

and would likely be met with concerns from the public, city council, and our board of directors that could call into question our decision making process. This could lead to a lack of confidence and possibly jeopardize future phases of funding that will be necessary to address all requirements cited in the CAO, primarily in the collection system. We have a solid plan and full support of the entire community and would hate to see that change.

During your review, we ask that data used for TRC determination be limited to the data collected since we placed temporary dechlorination equipment in service in November of 2012. It does not seem fair to include TRC values prior to us having any dechlorination facilities as that data is obsolete with regards to the current treatment process. Included with this letter is the spreadsheet showing all daily TRC readings on file. The proposed limit is produced from using only the monthly maximum TRC values, however, utilizing all the sample data from the time we started the dechlorination process produces an average TRC of 0.03 mg/l. We feel this would provide a more representative sample set of data and should be used in the calculation. City Corporation would also point out that during the past permit cycle, we conducted WET testing each quarter and none of the test indicated any toxicity. This is further evidenced by our placement on the reduced monitoring schedule.

**RESPONSE #1**

The Department, in its review of the TRC monitoring data provided by City Corporation, limited the data used in the evaluation to the data that was collected since dechlorination systems were placed in service in November 2012. The data was analyzed for the post-dechlorination term of the permit as well as the individual years of this term. For some of the calculations, such as geometric mean, assumptions were made with the given data. For instance, values reported as 0.00 mg/l were assumed to be non-detection (ND) of TRC. These ND values were assigned a numerical value of 0.005 mg/l (approximately half of the chronic toxicity criteria of 0.011 mg/l) for the purpose of factoring in the weight of ND to the overall average and geometric mean. Effectively, this provided a better representation of the actual average concentration of TRC in the effluent. The results of the analysis are shown in the table below.

**Analysis of TRC Monitoring Data**
(values below in units of mg/l)

| Statistic | Post-Dechlorination Term (Nov 2012 - Sep 2015) | Third Year (Nov 2012 - Sep 2013) | Fourth Year (Oct 2013 - Sep 2014) | Fifth Year (Oct 2014 - Sep 2015) |
|---|---|---|---|---|
| Average | 0.033 | 0.040 | 0.029 | 0.032 |
| Geometric Mean | 0.024 | 0.034 | 0.022 | 0.019 |
| Maximum | 0.860 | 0.470 | 0.230 | 0.860 |
| Median | 0.030 | 0.030 | 0.020 | 0.020 |
| Minimum | ND | 0.010 | ND | ND |
| Standard Deviation | 0.051 | 0.036 | 0.024 | 0.075 |

As can be seen, the Department reached the same conclusion as City Corporation in that on the average, TRC concentration in the effluent is 0.033 mg/l or 0.03 mg/l after rounding. The geometric mean was analyzed as it indicates the central tendency or typical value of the data.

Since the quantity of ND values was factored in to the geometric mean calculation, it can be reasoned that the typical TRC concentration in the effluent is around 0.024 mg/l. The low value for the standard deviation of the data set indicates minimal fluctuation in day-to-day TRC concentrations. The Department notes that occasional spikes in TRC concentrations occur in the discharge. Considering that the dechlorination system for this facility utilizes sulfur dioxide, it may be appropriate to increase dosage and make adjustments to any established control systems. This would help to reduce the number of spikes in concentration and to comply with the instantaneous maximum limit for TRC, which is based on the State of Arkansas Continuing Planning Process (CPP), Appendix D: Discharge Permit, Toxic Control Implementation Procedure – Section V - Chlorination/Dechlorination (ADEQ Office of Water Quality, 2000).

Please note that Condition No. 11 of Part II of the permit allows for a minimum quantification level (MQL) of 0.033 mg/l or lower. This means that non-detection of TRC by an approved test method at the MQL of 0.033 mg/l will be considered in compliance with the permit limit of 0.011 mg/l, as stated in Section 13 of the Fact Sheet. Additionally, the existing TRC limit of <0.1 mg/l cannot be continued in the renewal permit because that would allow for discharges of TRC concentrations in amounts that are toxic to aquatic life, according to the National Recommended Water Quality Criteria (EPA, 2009). However, the Department recognizes that decreasing the TRC concentration in the effluent from an average of 0.033 mg/l to 0.011 mg/l would call for an approximate 67% reduction. This amount of change may not be immediately feasible even with the existing dechlorination system. Therefore, the Department has chosen to exercise its discretion, provided in APCEC Reg. 2.104, to increase the schedule of compliance for the revised TRC limit of 0.011 mg/l from two years to three years. For this case, Reg. 2.104 does not allow for the schedule of compliance to exceed three years from the effective date of the permit. This schedule should provide adequate time for the permittee to develop practices to reduce TRC concentrations in the effluent or evaluate any alternative disinfection processes, if necessary.

| Summary of Changes to the Permit | | | | |
|---|---|---|---|---|
| Part | Draft Permit | Final Permit | Reason | Comment # |
| IA | N/A | Revised language in paragraphs above 'Effluent Limitations and Monitoring' tables for both interim and final limits. | Allow the permittee one additional year to achieve compliance with revised TRC limit. | 1 |
| IB | N/A | Increased total time allotted to Schedule of Compliance for revised TRC limit. | Allow the permittee additional time to plan for compliance with revised TRC limit. | |
| Fact Sheet | N/A | Revised language in Section 13 on TRC Requirements. | Update information on TRC limit evaluation and include discussion of permittee comments. | |

**ADEQ CORRECTIONS**
**FINAL PERMITTING DECISION**

Permit No.: AR0021768

Applicant: City Corporation - Russellville Water and Sewer System

Prepared by: Adam Yates

The following are ADEQ comments regarding the subject draft permit number. Responses are developed in accordance with regulations promulgated at 40 C.F.R. §122.63 as incorporated in APCEC Regulation 6.104(A)(3) and APCEC Regulation No. 8, Administrative Procedures.

**Introduction**

The above permit was submitted for public comment on March 6, 2016. The public comment period ended on April 5, 2016.

This document contains a summary of the ADEQ comments and a summary of the changes to the NPDES Permit can be found on the last page of this document.

**ADEQ Correction #1**

In accordance with new Department policy, Condition No. 1 of Part II of the draft permit is being removed in order to avoid any conflicts with coverage of discharges under other permits. This change has been incorporated into the final version of the permit.

**ADEQ Correction #2**

In accordance with new Department policy, Condition No. 2 of Part II of the permit is being revised to remove the requirement to monitor the influent $CBOD_5$ and TSS at least once per year. This change has been incorporated into the final version of the permit.

**ADEQ Correction #3**

Condition No. 8 of Part II of the permit is being revised to account for the addition of a lime stabilization sludge treatment unit to the existing sludge treatment process. This change is based on State Construction Permit No. AR0021768C3 and has been incorporated into the final version of the permit.

| Summary of Changes to the Permit | | | | |
|---|---|---|---|---|
| Part | Draft Permit | Final Permit | Reason | Correction # |
| II | N/A | Removal of Condition No. 1 concerning authorized discharges. | Avoidance of conflicting with coverage of discharges under other permits. | 1 |
| II | N/A | Revise language of Condition No. 2 concerning influent monitoring. | Department policy no longer requires influent monitoring. | 2 |
| II | N/A | Revise language of Condition No. 8 concerning sludge treatment process. | New information received with application for State Construction Permit No. AR0021768C3 | 3 |