

**FINAL FACT SHEET FOR RENEWAL GENERAL PERMIT
FOR WASTEWATER DISCHARGE FROM WATER TREATMENT PLANTS**

1. Background

The existing permit became effective on December 1, 2011 and expires on November 30, 2016.

The State of Arkansas has been authorized by the U. S. Environmental Protection Agency to administer the National Pollutant Discharge Elimination System (NPDES) Program in Arkansas, including the issuance of general permits to categories of dischargers under the provisions of 40 CFR 122.28, as adopted by reference in Arkansas Pollution Control and Ecology Commission Regulation (Reg.) 6.104. Under this authority, ADEQ may issue a single general permit to a category of point sources located within the same geographic area whose discharges warrant similar pollution control measures. Specifically, in accordance with 40 CFR 122.28, the ADEQ is authorized to issue a general NPDES permit if there are a number of point sources operating in a geographic area that:

- 1.1. involve the same or substantially similar types of operations;
- 1.2. discharge the same types of wastes;
- 1.3. require the same effluent limitations or operating conditions;
- 1.4. require the same or similar monitoring requirements; and
- 1.5. in the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.

The violation of any condition of a general permit constitutes a violation of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 *et seq.*) and may subject the discharger to the penalties and revocation of coverage under the general permit. Upon issuance of the final general permit for this type of discharge, operators that are considered qualified for coverage under this general permit must submit a written notice of intent to the Director for coverage under the general permit.

2. Wastewater Characterization

Water treatment plants (WTPs) may use either ground water or surface water as their source water and processes can vary depending on the treatment the source water requires. Ground water is most frequently treated to remove dissolved iron and manganese and typically includes oxidation (e.g.: ozonation, addition of chlorine) to precipitate the iron and manganese followed by filtration to remove the iron and manganese oxides. Typical wastewater can be characterized as follows:

Total Iron: 100 to 200 mg/l
Total Manganese: 70 to 100 mg/l
Total Residual Chlorine (TRC): 0.6 to 1 mg/l

Surface water is most frequently treated by sedimentation basins followed by filtration to remove suspended solids. Precipitation, coagulation, and flocculation are frequently used to increase the effectiveness of filtration and sedimentation. Aluminum sulfate (alum) is the most common coagulant used by WTPs. Chlorine may be added before filtration as an oxidizing agent for precipitation, and to remove unwanted taste and color, and is frequently added after filtration for disinfection prior to distribution as drinking water. This chlorinated finish water is typically used to backwash the filters. Filter backwash from standard coagulation/flocculation processes associated with treating surface water can be characterized as follows:

Suspended Solids: 50 to 400 mg/l with the following make-up:

Aluminum Hydroxide (additive) - 25 to 50%

Clay/Silt (source water) - 35 to 50%

Organic Matter (source water) - 15 to 25%

Total Residual Chlorine, TRC (additive): 0.1 to 1 mg/l

These pollutants concentrations show the need for limits on wastewater discharge.

3. Major Changes from the Previous Permit

- 3.1 Updated the effective date and expiration date on the cover page as well as the signatory official.
- 3.2 Replaced “Water Division” with “Office of Water Quality” throughout the permit.
- 3.3 Pump cooling water was added in the example list of discharges associated with water treatment plants in Part 1.2.1 due to several inspections listing pump cooling water as an un-permitted discharge. It is understood by the Department that pump cooling water is a typical process wastewater for water treatment facilities.
- 3.4 Replaced several instances of “individual permit,” “individual NPDES permit,” etc. with “Individual NPDES Discharge Permit (Individual Permit)” and “Individual Permit” for consistency.
- 3.5 An exclusion was added in Part 1.3 for discharges, not previously permitted or covered by this general permit, into a losing stream segment in accordance with APC&EC Regulation 6.301.
- 3.6 A requirement to submit proof of good standing from the state of origin was moved from Part 1.4.2 to Part 1.4.1 and was elaborated for clarity. This is to avoid the added measure of requesting proof of good standing from states of origin other than Arkansas.
- 3.7 The deadline for submitting renewal information, Part 1.4.3.1, was changed from within 90 days of the effective date of this general permit to “no later than the effective date of this general permit.” This is to allow the permittee optimal time to apply for coverage under the renewal permit.
- 3.8 Added a Note in Part 1.4.3.3 notifying the permittee of the timeline for obtaining a state construction permit for clarity.
- 3.9 Added ePortal as another submission method in Part 1.4.4 because it is ready for permittee use.
- 3.10 Language regarding the public comment period in Part 1.4.5 was modified to clarify that any comments on an NOI can be submitted at Water-Draft-Permit-Comment@adeq.state.ar.us.
- 3.11 Changed “Outfall – Tier” to “Outfall Type” in Parts 2 and 3 for consistency.
- 3.12 Added “(mg/L unless otherwise specified)” in the tables in Part 2 to clarify units of measurement.
- 3.13 The limit for TRC has been decreased to 0.011 mg/L from <0.1 mg/L. This change is reflected in Parts 2.1, 2.2, and 2.3 of the permit. See Section 7 of this Fact Sheet for further information regarding the change.
- 3.14 A footnote was added under each table in Part 2 stating the minimum detectable level (MDL) of TRC is 0.033 mg/L, and that to remain in compliance with the TRC limit, the test must come back non-detect (ND). This is also reflected in Part 3.2 of the permit.
- 3.15 The word “water” was added after “chlorinated” in the second paragraph of Part 3.2 to clarify the exceptions to monitoring TRC.
- 3.16 Removed Part 7.7, Duty to Reapply, and replaced it with [Reserved] because reapplication is already covered in Part 1.4.3.1.
- 3.17 Added Part 7.11, Other Information, in accordance with 40 CFR 122.42(l)(8). This resulted in Penalties for Falsification of Reports being relabeled 7.12.
- 3.18 The definitions of “Losing Stream Segment” and “Waters of the State” were added to Part 8 of the permit.

4. Permit Coverage

The permit provides coverage for discharges associated with water treatment plant wastewater discharge. Operations covered under this permit are authorized to discharge wastewater to waters of the State of Arkansas subject to the conditions contained in the permit except as stated in Part 1.3 of the permit. Those facilities with activities designated by Standard Industrial Classification (SIC) code of 4941 are subject to coverage under the general permit for wastewater discharges from potable water treatment plants. The criteria for coverage under the general permit are listed in Part 1 of this general permit. Part 1.3 of the permit identifies specific situations where facilities are excluded from coverage under the general permit and may require coverage under an individual permit.

The applicability of this permit shall be limited to discharges associated with the water treatment plants which include wastewater from the following types of potable water treatment facilities: iron and manganese removal, micro-filtration, chemical softening, and coagulation/sedimentation with filter backwash storage/treatment. Process flows contributing to the discharge include, but are not limited to: filter backwash, filtration reject, decanted sludge dewatering, influent screen backwash and/or miscellaneous low volume waste sources associated with potable water facility operation. Miscellaneous low volume waste sources may include, but are not limited to: processed potable water, dehumidifier water, sump drainage water, hydraulic valve operator water and/or pump seal water.

Facilities with significant non-compliance (facilities discharging into impaired waters as listed on the 303(d) list, facilities discharging into an ERW, ESW, or NSW, and facilities discharging to a losing stream segment) are excluded from coverage under the general permit because these issues fall outside the scope of the purpose of a general permit, which is to simplify the process of obtaining NPDES permit coverage for similar facilities that do not warrant individual or specialized consideration.

4.1. Notification Requirements

40 CFR 122.28(b)(2)(ii) requires a completed and signed application (the Notice of Intent) to be submitted to the Director in order to obtain coverage under the General Permit.

4.2. Individual Permits

40 CFR 122.28(b)(3) allows the Director to determine, on a case-by-case basis, that certain facilities covered by general permits that do not generally require an Individual Permit may be required to obtain an Individual Permit because of their contributions to water pollution.

4.3. Operator License Requirements

The treatment systems that discharge the waste process water from drinking water treatment plants meet the classification of a Basic Industrial Wastewater Treatment Plant in APC&EC Reg. 3.503 (A). Therefore, an operator of such a system is required by the regulation to have a Basic Industrial operator's license.

A Class I Municipal Wastewater Operators license also covers the operation of sedimentation ponds, which is the treatment system for the overwhelming majority of drinking water treatment plants. Therefore, municipal drinking water facilities may use operators licensed as either Class I Municipal or Basic Industrial.

Existing Permittees may obtain an Apprenticeship Operator license prior to submittal of the renewal Notice of Intent, which will allow 6 months to obtain the appropriate license, or obtain the services of a wastewater operator that holds the appropriate license in accordance with APC&EC Reg. 3

requirements.

5. Best Conventional Pollutant Control Technology (BCT) and Best Available Technology Economically Achievable (BAT)

Two types of technology-based effluent limitations must be included in the permits proposed here. With regard to conventional pollutants, i.e., pH, CWA section 301 (b)(1)(E) requires effluent limitations based on "best conventional pollution control technology" (BCT). With regard to nonconventional and toxic pollutants, CWA section 301(b)(2)(A), (C), and (D) require effluent limitations based on "best available pollution control technology economically achievable" (BAT), a standard which generally represents the best performing existing technology in an industrial category or subcategory. BAT and BCT effluent limitations may never be less stringent than corresponding effluent limitations based on best practicable control technology (BPT), a standard applicable to similar discharges prior to March 31, 1989 under CWA 301(b)(1)(A).

Frequently, EPA adopts nationally applicable guidelines identifying the BPT, BCT, and BAT standards to which specific industrial categories and subcategories are subject. Until such guidelines are published, however, CWA section 402(a)(1) requires that EPA determine appropriate BCT and BAT effluent limitations in its NPDES permitting actions on the basis of its best professional judgment.

6. Water Quality Requirements

In accordance with 40 CFR 122.44(d), the Department is required to include any requirements necessary to achieve State Water Quality Standards, as established under Section 303 of the Clean Water Act.

7. Permit Limits and Basis

Following regulations promulgated at 40 CFR Part 122.44 (l)(2)(ii), the renewal 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. Regulations promulgated at 40 CFR Part 122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on Best Professional Judgment (BPJ) in the absence of guidelines, or on a combination of the two.

Effluent limitations in this general permit were established using Best Professional Judgment pursuant to 40 CFR 125.3, and are consistent with the EPA Region VII memorandum concerning water treatment plant effluent guidelines and recommendations and the previous general permit issued for this group of facilities. The following effluent limitations are applicable to discharge from activities associated with the production of potable water from water treatment plants:

OUTFALL TYPE 101: FACILITIES WITH A DAILY AVERAGE WASTE DISCHARGE FLOW ≤ 0.5 MGD

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max		
Flow	Report, MGD	Report, MGD	five/week	instantaneous/ totalizing/ calculated
Total Suspended Solids (TSS)	20.0	30.0	once/quarter	grab
Iron (Dissolved)	1.0	2.0	once/quarter	grab
Manganese (Dissolved)	1.0	2.0	once/quarter	grab
Aluminum (Dissolved)	1.0	2.0	once/quarter	grab
Total Residual Chlorine (TRC)	0.011 (Inst. Max.)		once/quarter	grab
pH	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/quarter	grab

OUTFALL TYPE 102: FACILITIES WITH A DAILY AVERAGE WASTE DISCHARGE FLOW > 0.5 but ≤ 1.0 MGD

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max		
Flow	Report, MGD	Report, MGD	five/week	instantaneous/ totalizing/ calculated
Total Suspended Solids (TSS)	20.0	30.0	once/month	grab
Iron (Dissolved)	1.0	2.0	once/month	grab
Manganese (Dissolved)	1.0	2.0	once/month	grab
Aluminum (Dissolved)	1.0	2.0	once/month	grab
Total Residual Chlorine (TRC)	0.011 (Inst. Max.)		once/month	grab
pH	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/month	grab

OUTFALL TYPE 103: FACILITIES WITH A DAILY AVERAGE WASTE DISCHARGE FLOW > 1.0 MGD

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max		
Flow	Report, MGD	Report, MGD	five/week	instantaneous/ totalizing/ calculated
Total Suspended Solids (TSS)	20.0	30.0	once/week	grab
Iron (Dissolved)	1.0	2.0	once/week	grab
Manganese (Dissolved)	1.0	2.0	once/week	grab
Aluminum (Dissolved)	1.0	2.0	once/week	grab
Total Residual Chlorine (TRC)	0.011 (Inst. Max.)		once/week	grab
pH	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab

The following are the specific bases for each of the particular pollutant limitations:

Total Suspended Solids (TSS):

Backwash from filters contains sediment removed from the drinking water source, and the sedimentation pond(s) used by most drinking water plants to treat the waste process water are to allow these solids to settle. TSS limits have been included in the permit because discharges have the potential to carry these suspended solids. Due to the lack of water quality limitations, the limits have been determined based on best engineering judgment using the typical values associated with this type of facility to ensure the narrative criteria for solids, floating material, and deposits are not exceeded.

The permittee may apply for a reduction in the monitoring and reporting frequency of TSS if the results of all analyses have been within permit limits for the previous 8 quarters.

Iron and Manganese

Iron and Manganese are common constituents of groundwater that are treated and removed by drinking water treatment facilities. There are no water quality-based limitations for these constituents. These technology-based (BPJ) limitations are based on the table on page 1 of the EPA Region VII memorandum concerning water treatment plant effluent guidelines and recommendations. These limitations are judged to represent the level of treatment attainable through the application of the best conventional pollutant control technology (BCT). These limits are only applicable to facilities that use groundwater as source water.

The permittee may apply for a reduction in the monitoring and reporting frequency of Iron and Manganese if the results of all analyses have been within permit limits for the previous 8 quarters.

Aluminum

Aluminum-based coagulants are the most common settling agents used in drinking water treatment plants. There are no water quality-based limitations for this pollutant. These technology-based (BPJ) limitations are based on the EPA Region VII memorandum concerning water treatment plant effluent guidelines and recommendations. These limitations are judged to represent the level of treatment attainable through the

application of the best conventional pollutant control technology (BCT). These limits are only applicable to facilities that use aluminum-based coagulants.

The permittee may apply for a reduction in the monitoring and reporting frequency of Aluminum if the results of all analyses have been within permit limits for the previous 8 quarters.

Total Residual Chlorine (TRC):

APC&EC Reg. 2.409 states “Discharges shall not be allowed into any waterbody which, after consideration of the zone of initial dilution, the mixing zone and critical flow conditions, will cause toxicity to human, animal, plant or aquatic life or interfere with normal propagation, growth, and survival of aquatic biota.” Since residual chlorine may cause toxicity conditions in the receiving stream, and facilities covered under this general permit may discharge into waterbodies without sufficient background flow to dilute the residual chlorine concentration to levels that will prevent toxicity, a TRC limit has been included in the permit. This limit only applies to facilities which use chlorinated water to backwash their filters.

The human health toxicity level for chlorine is much higher than that of aquatic life, so when determining a limit for chlorine, aquatic life toxicity levels are used. Chronic toxicity levels are lower than acute toxicity levels, so when determining a limit for chlorine, the chronic toxicity level is used. In general, waterbodies in Arkansas contain freshwater. Thus, based on EPA’s “Quality Criteria for Water, 1986,” the aquatic life chronic toxicity level for chlorine in freshwater is 0.011 mg/L. Therefore, the limit for TRC has been set at 0.011 mg/L.

There exists no EPA approved testing method for TRC with a detection level of 0.011 mg/L or lower. Thus, prior to final discharge, the effluent shall contain NO MEASURABLE TRC at any time. NO MEASURABLE TRC will be defined as less than 0.033 mg/l (the non- detectable concentration of TRC as determined by any approved method established in 40 CFR Part 136). The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured with fifteen (15) minutes of sampling.

The monitoring and reporting requirements for TRC do not apply to facilities that do not use chlorinated water for backwashing filters, nor to facilities with backwash water retention ponds with a retention time greater than 24 hours. Facilities that do not use chlorinated water for filter backwash do not require a limit because no chlorine has been added to the wastewater. Facilities with backwash water retention ponds with a retention time greater than 24 hours do not require a limit because added chlorine is expected to dissipate in less than 24 hours.

The permittee may apply for a reduction in the monitoring and reporting frequency of TRC if the results of all analyses have been within permit limits for the previous 8 quarters.

pH:

Water quality-based limits for pH are based on the APC&EC Reg. 2.504, 40 CFR Part 122.44(1), and the previous permit. These limitations are judged to represent the level of treatment attainable through the application of the best conventional pollutant control technology (BCT). Measurement of pH helps to ensure that the alkalinity of the discharge has not been altered by products or other items on-site so that receiving stream and its intended uses are protected.

8. Monitoring and Reporting Requirements

Requirements for sample type and sampling frequency have been based on the requirements from the previous permit. All facilities operating under conditions of this general permit are required to monitor as follows:

Outfall Type 101 (facilities with a DAWDF ≤ 0.5 MGD) – once/quarter for all pollutants and five/week for flow.

Outfall Type 102 (facilities with a DAWDF > 0.5 but ≤ 1.0 MGD) – once/month for all pollutants and five/week for flow.

Outfall Type 103 (facilities with a DAWDF > 1.0 MGD) – once/week for all pollutants and five/week for flow.

Sampling and testing must be conducted in accordance with 40 CFR Part 136. Permittees are required to report the results of sampling and analysis on a Discharge Monitoring Report. Reports are required to be submitted by the 25th day of the month following the reporting period. The first report will be due at the end of the reporting period following the date this general permit becomes applicable to the permittee. Oral 24-hour reporting is required for any by-pass or upset or any noncompliance which may endanger health or the environment. Unless specifically waived by the Director, written reports must also be provided within 5 days of the above occurrences.

A DMR must be submitted if a discharge occurs during a permit reporting period.

9. Other Conditions

9.1. Geographic Area and Covered Facilities

The general permit, when issued, will authorize discharges from water treatment plants throughout the State of Arkansas to all receiving waters, except those waters as described in Part 1.3. The permit will be applicable only to facilities which have direct discharges to Waters of The United States as defined in 40 CFR 122.2 and are therefore subject to the requirements of Sections 301 and 402 of the Clean Water Act. Additionally, the facility is required to be in receipt of a state construction permit issued by this Department prior to coverage under this permit.

9.2. Timing of Requests

Requests for Coverage shall be submitted as follows:

9.2.1. For new dischargers, at least 30 business days prior to first discharge.

9.2.2. For existing dischargers operating under the General Permit (ARG640000), prior to the expiration date of the general permit.

9.3. Expiration Date

This general permit will expire 5 years from the effective date of the permit. An expired permit will continue in effect until such time that the permit is renewed or a new permit is issued.

9.4. Standard Conditions

The conditions applicable to all NPDES permits under the provisions of 40 CFR 122.41 have been included in this General Permit, as appropriate.

9.5. Continuation of Expired Permit

In accordance with 40 CFR 122.28(b)(2)(ii), an expired general permit continues in force and effect until a new general permit is issued. If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by the continued permit until the earliest of:

- 9.5.1. Reissuance or replacement of this permit, at which time the operator must comply with the conditions of the new permit to maintain authorization to discharge, and the operator is required to notify the Department of his/her intent to be covered under this permit prior to the expiration date;
- 9.5.2. Submittal of a Notice of Termination;
- 9.5.3. Issuance of an Individual NPDES Discharge Permit for the project's discharges; or
- 9.5.4. A formal permit decision by the ADEQ to not re-issue this general permit, at which time you must seek coverage under an Individual NPDES Discharge Permit or other general permits, if available.

These conditions are in accordance with Arkansas Code Annotated § 8-4-203 (et seq.) and Act 731 of the 2011 Regular Session of the Arkansas Legislature.

9.6. Requesting General Permit Coverage.

In order to avoid conflict with the "anti-backsliding" provisions of the Clean Water Act (CWA), an existing discharger with an individual NPDES permit may apply for this general permit if the individual permit does not contain numeric water quality-based limitations for the discharge (Note that a simple pH range limit would not necessarily have to be considered a water-quality based limit unless the limit was established to address known discharge problems at a particular facility). Compliance with the numeric limitations under the individual permit shall be considered a strong indicator of eligibility for general permit coverage.

10. Economic Impact

The EPA approved testing method for TRC has increased in sensitivity (from 0.1 to 0.033) which may result in some facilities needing modification of their treatment system or backwashing procedure.

11. Sources

- 10.1. ARG640000, previous permit.
- 10.2. Arkansas Water Quality Management Plan (WQMP).
- 10.3. APCEC Regulation No. 2.
- 10.4. APCEC Regulation No. 6.
- 10.5. APCEC Regulation No. 8.
- 10.6. APCEC Regulation No. 9.
- 10.7. Arkansas Code Annotated § 8-4-203 (et seq.)

- 10.8. Act 731 of the 2011 Regular Session of the Arkansas Legislature.
- 10.9. 40 CFR Parts 122, 124 and 125.
- 10.10. EPA Region VII memorandum concerning water treatment plant effluent guidelines and recommendations.
- 10.11. DMRs from the previous permit period from all facilities covered under General Permit ARG640000.
- 10.12. EPA, May 1, 1986 "Quality Criteria for Water, 1986."

12. Contact Information

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