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**TITLE 252. DEPARTMENT OF ENVIRONMENTAL QUALITY
CHAPTER 628. INDIRECT POTABLE REUSE FOR SURFACE WATER
AUGMENTATION**

Subchapter

1. General Provisions	252:628-1
3. Benchmarks and Implementation for IPR Source Water Discharges	252:628-3
5. Treatment Standards for IPR Source Water	252:628-5
7. Operation and Maintenance for IPR Source Water Treatment Plants	252:628-7
9. Permitting Requirements for IPR Source Water	252:628-9
11. IPR Receiving Waterbody Monitoring	252:628-11

Appendix A. IPR Source Water Benchmarks

SUBCHAPTER 1. GENERAL PROVISIONS

Section

- 252:628-1-1. Purpose and authority
- 252:628-1-2. Definitions
- 252:628-1-3. Applicability and general requirements
- 252:628-1-4. Fees

252:628-1-1. Purpose and authority

- (a) **Purpose.** Planned water reuse is in the public interest and requires that municipal wastewater be treated sufficiently in order to meet the intended level of reuse.
- (b) **Authority.** This Chapter is authorized by 27A O.S. Section 1-3-101(B)(1),(4),(6),(12) and (18); 27A O.S. Sections 2-6-101 through 2-6-105, 27A O.S. Sections 2-6-401 through 2-6-403, and 27A O.S. Section 2-6-501. The requirements of this Chapter are in addition to those requirements for discharge under the federal Clean Water Act and subsequent federal and state regulations.

252:628-1-2. Definitions

In addition to the definitions contained in the Environmental Quality Code (27A O.S. Section 2-1-101 et seq.), the following words and terms, when used in this Chapter, shall have the following meaning, unless the context clearly indicates otherwise:

"**BOD₅**" means 5-day biochemical oxygen demand.

"**CBOD₅**" means 5-day carbonaceous biochemical oxygen demand.

"**Conservative parameter**" means a parameter which persists in the environment, having characteristics which are resistant to ordinary biological or biochemical degradation.

"**Constituents of Emerging Concern (CECs)**" means a group of synthetic or naturally occurring chemicals that are not currently regulated under the Clean Water Act (CWA) or Safe Drinking Water Act (SDWA) and are not commonly monitored in the environment. These constituents are to be evaluated in IPR Source Water treatment. Examples of CECs are chemicals in the following categories: prescription and nonprescription drugs, home care products, veterinary and human antibiotics, industrial and household products, sex and steroidal hormones, other endocrine disrupters, and engineered nanomaterials. Selected constituents may be surrogates for a broader list of constituents for use in evaluating overall levels in treated IPR Source Water or for reservoir evaluation.

"**CPI**" means Consumer Price Index. [See Section 628-1-4\(e\) for additional information.](#)

"**DEQ**" means the Oklahoma Department of Environmental Quality.

"**DMR**" means discharge monitoring report.

"**Disinfection**" means the selective destruction of pathogens in water.

"**Drought of Record**" means, for reservoirs, the month with the highest concentration of a given conservative parameter as predicted by hydrologic and mass balance considerations. For stream IPR projects, the drought of record means the lowest monthly average streamflow over a minimum 40 year period of record or other period of record as approved by DEQ.

"**HAB**" means harmful algal bloom.

"**Hydrologic Mass Balance (HMB) Model**" means a minimum monthly time-step model which uses hydrologic data over a period of record from 1950 to the present, or other period of record as required or approved by DEQ, and may be used to estimate the concentration of a conservative parameter in a reservoir or stream over time. Other models, with DEQ approval, may be substituted for an HMB Model.

"**Industrial facilities**" means those facilities that produce, treat or dispose of wastewater not

otherwise defined as domestic wastewater, including the runoff and leachate from areas that receive pollutants associated with industrial or commercial storage, handling or processing.

"**IPR**" means Indirect Potable Reuse.

"**IPR Source Water**" means water originating from a municipal wastewater treatment facility that meets the benchmarks, treatment, and operational standards of this Chapter and has been permitted under an OPDES wastewater permit for release to a surface water source for a PWS system for the purpose of augmenting the flow to an existing PWS system intake.

"**IPR Source Water Treatment**" means any method, technique, or process which changes the physical, chemical, biological character, or composition of municipal secondary treated wastewater for the purpose of meeting the benchmarks, treatment, and operational standards contained herein for IPR Source Water.

"**IPR Source Water Treatment Plant (IPR SWTP)**" means any plant or other works used for the purpose of treating, stabilizing, or holding IPR Source Water.

"**LMR**" means lake and stream monitoring report.

"**MOR**" means monthly operating report.

"**SQL**" means minimum quantifiable level.

"**Non-conservative parameter**" means a parameter which undergoes significant short-term degradation or change in the environment other than by dilution.

"**NTU**" means Nephelometric Turbidity Unit.

"**O&M**" means Operation and Maintenance.

"**Operator**" means the individual who is properly certified by DEQ and who is responsible for the maintenance and operation of an IPR Source Water Treatment Plant.

"**OWQS**" means the Oklahoma Water Quality Standards, contained at OAC 785:45.

"**pH**" means the negative common logarithm of the hydrogen-ion activity in moles per liter, as determined using approved methods.

"**Secondary treatment**" means wastewater treatment to a level that will achieve the effluent limitations specified in OAC 252:606-5-2.

"**Surface water**" means waters of the state located upon the surface of the earth.

"**Surrogate**" means an individual chemical or measurement that provides an indication of treatment process performance and/or represents the presence of a broader range of similar chemicals.

"**SWS-R**" means waterbodies classified as sensitive public and private water supplies that may be augmented with reclaimed water for the purpose of indirect potable reuse.

"**TDS**" means total dissolved solids.

"**TOC**" means total organic carbon.

"**TRC**" means total residual chlorine.

"**TRO**" means total residual oxidant.

"**TSS**" means total suspended solids.

252:628-1-3. Applicability and general requirements

(a) **Applicability.** The requirements of this Chapter apply to an applicant proposing the use of IPR Source Water to augment an existing source for a Public Water Supply (PWS) system. Permitted wastewater discharges existing as of the date of the initial promulgation of this rule are not considered IPR discharges subject to the rules in this Chapter.

(b) **Indirect Potable Reuse (IPR) for Surface Water (Lake) Augmentation.** This type of planned water reuse involves the discharge of treated wastewater to a surface waterbody by an entity for the purpose of augmenting a lake serving as a source for a PWS system. These rules apply to discharges to both SWS-R waterbodies and other reservoirs designated with the Public and Private Water Supply beneficial use in the Oklahoma Water Quality Standards (OWQS), or

upstream of such reservoirs. Discharges to reservoirs designated as SWS-R by the Oklahoma Water Resources Board (OWRB) shall be regulated in accordance with OWRB anti-degradation policy.

(c) **Indirect Potable Reuse (IPR) for Surface Water (Streams and Rivers) Augmentation.**

Based on DEQ's evaluation of flow rates, travel times, distance to water intakes, and other factors, certain discharges of treated municipal wastewater to streams and rivers that serve as a source for a PWS system may also be determined to be IPR and subject to these rules.

(d) **Requirements.** In general, municipal wastewater effluent that has been treated to secondary standards will need advanced treatment in order to meet, at a minimum, the IPR effluent benchmarks in Subchapter 3 of this Chapter as well as the technology and operational standards described in Subchapters 5 and 7 of this Chapter. In addition, the applicant and their design engineer shall meet the certification and contingency planning requirements of this Subchapter.

(e) **Human Health Protection.** The goal of these rules is to manage the risk to public health, safety, and welfare from the discharge of IPR Source Water for surface water augmentation.

(f) **Potential Impacts.** The decision by an applicant to augment an existing source for a PWS system with IPR Source Water is a voluntary activity by the applicant. The applicant should undertake all measures, whether required in this rule or not, to ensure the protection of human health and the environment.

(g) **Certification.** Engineering reports and plans and specifications shall be signed and sealed by a professional engineer registered in the State of Oklahoma certifying that the submittal was prepared in accordance with good engineering practice. In addition to this certification, the responsible official for the applicant shall submit a cover letter stating that the project will meet the applicable requirements of this Chapter.

(h) **Contingency Plan.** The applicant shall submit to DEQ for approval a contingency plan describing the steps the applicant will take in the event of an adverse public health situation developing in the receiving waterbody as a result of the applicant's discharge, including but not limited to, harmful algal blooms and harmful concentrations of other pollutants. The plan shall evaluate steps for lake water quality restoration as well as provisions for supplying potable water to the citizens impacted by loss of the PWS system source. The applicant shall demonstrate the capability to respond to the temporary loss of a PWS system source due to IPR impacts.

252:628-1-4. Fees

(a) **Fee payment.** Permits will not be issued until all fees are paid, and the permittee is current with DEQ requirements.

(b) **Construction permit application fees.** All IPR SWTP construction permit applications shall be charged an application fee. Fees for IPR SWTP construction are based on the design flow of the wastewater treatment plant, including the IPR SWTP. The fees are as follows:

- (1) New facilities and major modifications that alter the original design or the design capacity: \$18,160.00; and
- (2) Minor modifications that will not alter the design capacity of the facility such as flow measurement, discharge structures, and equalization basins: \$2,724.00.

(c) **OPDES permit application fees.** The IPR OPDES permit application fee shall be charged in addition to the OPDES permit application fee calculated in accordance with OAC 252:606-3-4. The fee is as follows: \$2,000.00.

(d) **Annual operational fees.** The IPR annual operational fees shall be charged in addition to the annual fees described in OAC 252:606-3-4.

- (1) **IPR annual operational fees.** Each IPR SWTP shall be charged an annual fee (see 27A O.S. Section 2-3-402). The annual operational fee for each IPR SWTP shall be \$21,600.00.

- (2) **Due date.** Each IPR SWTP shall submit payment of the fees within thirty (30) days of receipt of invoices mailed by DEQ.
- (3) **Fee calculation.** The IPR SWTP annual operational fee shall be calculated using the actual costs of services as follows:
- (A) Annual costs for inspections will equal \$2,400.00 for each IPR SWTP; and
 - (B) Annual state costs for regulatory services, tracking, monitoring, data review, evaluating trends, reporting, enforcement, and technical assistance will equal \$19,200.00 for each IPR SWTP.
- (4) **Fee notification.** Each IPR SWTP will be notified by mail of the fee due from that system by August 1st of each year. DEQ shall mail such notice to the most recent name and address provided to DEQ by the IPR SWTP; however, failure to receive such notice by the IPR SWTP shall not operate to waive any fees due to DEQ.
- (e) **Consumer Price Index fee increase.** To assist in meeting rising costs to DEQ the fees set out in this Section shall be automatically adjusted on July 1st every year to correspond to the percentage, if any, by which the CPI for the most recent calendar year exceeds the CPI for the previous calendar year. DEQ may round the adjusted fees up to the nearest dollar. DEQ may waive collection of an automatic increase in a given year if it determines other revenues, including appropriated state general revenue funds, have increased sufficiently to make the funds generated by the automatic adjustment unnecessary in that year. A waiver does not affect future automatic adjustments.
- (1) Any automatic fee adjustment under this subsection may be averted or eliminated, or the adjustment percentage may be modified, by rule promulgated pursuant to the Oklahoma Administrative Procedures Act. The rulemaking process may be initiated in any manner provided by law, including a petition for rule making pursuant to 75 O.S. Section 305 and OAC 252:4-5-3 by any person affected by the automatic fee adjustment.
 - (2) If the United States Department of Labor ceases to publish the CPI or revises the methodology or base years, no further automatic fee adjustments shall occur until a new automatic fee adjustment rule is promulgated pursuant to the Oklahoma Administrative Procedures Act.
 - (3) For purposes of this subsection, "Consumer Price Index" or "CPI" means the Consumer Price Index – All Urban Consumers (U.S. All Items, Current Series, 1982-1984=100, CUUR0000SA0) published by the United States Department of Labor. The CPI for a calendar year is the figure denoted by the Department of Labor as the "Annual" index figure for that calendar year.
- (f) **Other fee increases.** The fees listed in this Subchapter shall only be raised in the manner stated in subsection (e) above, unless a workload and budget analysis is completed which demonstrates that an additional increase in fees is warranted.

SUBCHAPTER 3. BENCHMARKS AND IMPLEMENTATION FOR IPR SOURCE WATER DISCHARGES

Section

- 252:628-3-1. General provisions
- 252:628-3-2. Other rules apply
- 252:628-3-3. IPR benchmarks for pathogens
- 252:628-3-4. General IPR benchmarks
- 252:628-3-5. IPR primary benchmarks
- 252:628-3-6. IPR benchmarks for additional conservative parameters
- 252:628-3-7. IPR benchmarks for nutrients, chlorophyll-a and algal biomass

252:628-3-8. IPR benchmarks for Constituents of Emerging Concern

252:628-3-9. Monitoring frequency reductions

252:628-3-10. Reduction or cessation of discharge

252:628-3-1. General provisions

(a) **IPR benchmarks.** IPR Source Water discharges shall, at a minimum, meet the IPR benchmarks contained in this Subchapter and in Appendix A of this Chapter. More stringent effluent limitations may be established on a case-by-case basis if determined necessary to protect human health. The IPR SWTP treatment processes shall be capable of producing an effluent that meets the limits specified in Appendix A of this Chapter in addition to effluent limitations developed in accordance with OAC 252:606 and OAC 252:690.

(b) **Quantitative data.** Data collected for the monitoring of IPR Source Water discharges shall use analytical methods listed at 40 CFR Part 136 or other EPA-approved methods. Where there is no approved analytical method, the permittee shall fully describe the method used for DEQ review and obtain written approval prior to utilizing these data. All data submitted shall be defensible analytical data. Reporting and recordkeeping shall be in accordance with Subchapter 7 of this Chapter.

(c) **Measurable levels.** Measurable levels for the monitoring of IPR Source Water discharges shall comply with the MQL requirements of OAC 252:690-3-2 and Appendix B of OAC 252:690. Where a monitored parameter has an established MQL, DEQ will include a provision in the permit requiring measurable levels to be less than or equal to the MQL. Where there is no established MQL, the permittee shall fully describe the method and MQL used for DEQ review and obtain written approval prior to utilizing these data. Data will be characterized as outlined in OAC 252:690-3-2.

252:628-3-2. Other rules apply

(a) The IPR benchmarks established by this Subchapter apply in addition to other rules for wastewater discharges, including OAC 785:45, OAC 785:46, OAC 252:301, OAC 252:606 and OAC 252:690. For parameters which are subject to both the IPR benchmarks established by this Subchapter and effluent limitations developed in accordance with OAC 252:606 and OAC 252:690, the more stringent effluent limitations and monitoring requirements shall apply.

(b) IPR Source Water discharges shall maintain existing and designated beneficial uses; shall not cause or contribute to a violation of narrative and numeric criteria; and shall be consistent with anti-degradation policy established in the OWQS.

(c) IPR Source Water discharges to SWS-R waterbodies shall not consume more than the portion of the assimilative capacity determined and allocated to the discharger in accordance with OAC 785:45, OAC 785:46, OAC 252:606 and OAC 252:690.

(d) IPR Source Water discharges to lakes shall be at least as protective as Oklahoma's Discharges to State Lakes policy as described in Oklahoma's Continuing Planning Process (CPP) document.

252:628-3-3. IPR benchmarks for pathogens

(a) **Disinfection.** IPR Source Water shall be disinfected in accordance with OAC 252:656-21. The method of disinfection from secondary treated effluent to IPR end of pipe discharge shall achieve:

- (1) 5-log removal or inactivation of adenovirus type 15;
- (2) 5-log removal or inactivation of Salmonella typhimurium;
- (3) 3-log removal or inactivation of Cryptosporidium oocysts; and
- (4) 3-log removal or inactivation of Giardia lamblia cysts.

(b) **Removal credits.** Compliance with paragraph (a) shall be determined in accordance with the construction standards for disinfection of Category 2 reclaimed water in OAC 252:656-21. Removal credits for *Cryptosporidium* oocysts may be based on test data provided by the Permittee to DEQ for review.

(c) **Total coliform.** There shall be no detectable (less than 2 per 100 milliliters) bacteria of the total coliform group in the discharge. Total coliform shall be monitored daily by grab sample.

(d) **Total residual chlorine.** There shall be no measurable amount (less than 0.1 milligrams per liter) of TRC or, if another halogen is used for disinfection, TRO in the discharge. TRC or TRO shall be monitored daily.

252:628-3-4. General IPR benchmarks

(a) CBOD₅ shall not exceed 5.0 milligrams per liter daily maximum and shall be monitored in accordance with minimum control test requirements for BOD₅ established in Appendix A of OAC 252:606. DEQ may increase the monitoring frequency for CBOD₅ for a period not to exceed two years during the initial permit cycle for the purpose of establishing the pattern and extent of variation for a given pollutant.

(b) Flow shall be monitored continuously and recorded.

(c) pH shall be within the range of 6.5 standard units to 9.0 standard units and shall be monitored in accordance with minimum control test requirements established in Appendix A of OAC 252:606. Where pH is monitored continuously, excursions from this pH range which are permitted in accordance with 40 CFR Part 401.17 shall not be subject to the requirements of OAC 252:628-3-10.

(d) TOC shall be monitored daily, or as approved by DEQ.

(e) TSS shall not exceed 5 milligrams per liter daily maximum and shall be monitored in accordance with minimum control test requirements established in Appendix A of OAC 252:606. Requirements for more frequent monitoring may be established on a case-by-case basis.

(f) Turbidity shall be monitored continuously. Continuous turbidity recording equipment shall be provided on the effluent piping and connected to an alarm system to warn operators of an excessive turbidity breakthrough. Turbidity shall meet the following:

(1) Turbidity shall not exceed a daily average of 2 NTU. The daily average turbidity is calculated as the average of turbidity measures taken at intervals not to exceed 1.2 hours over a period of 24 hours;

(2) Turbidity shall not exceed 10 NTU at any time; and

(3) No more than 5% of the daily values shall exceed five (5) NTU per month. The maximum 24 hour turbidity shall be based on the highest measure from continuous monitoring taken at intervals not to exceed 1.2 hours over a 24 hour period.

252:628-3-5. IPR primary benchmarks

(a) **Primary benchmarks.** IPR Source Water shall be treated to meet the primary benchmarks established in Appendix A of this Chapter in accordance with the following:

(1) **Non-conservative parameters.** Refer to Appendix A of this Chapter for the list of primary non-conservative parameters.

(A) Primary benchmarks shall apply at end of pipe.

(B) Effluent limitations and monitoring requirements shall be established in the permit for those parameters with primary benchmarks which are demonstrated or believed to be present in the IPR Source Water discharge based on information in the OPDES discharge permit application or other available data.

- (C) The primary benchmarks for parameters identified in this paragraph shall be applied as daily maximum permit limits in the OPDES discharge permit. Monthly average permit limits shall be established as two-thirds times the daily maximum permit limits.
- (2) **Conservative parameters.** Refer to Appendix A of this Chapter for the list of primary conservative parameters.
- (A) Primary benchmarks shall apply at end of pipe.
- (B) ~~Where an HMB model demonstrates that a pollutant will exceed a primary benchmark in the receiving water during drought of record conditions, as defined in this Chapter, the effluent concentration shall be reduced accordingly such that the drought of record concentration does not exceed the primary benchmark.~~ An HMB model or equivalent analysis covering the entire period of record may be performed in order to establish a tiered system for effluent loading that ensures the concentration for conservative parameters in the lake do not exceed the greater of the primary benchmark or the existing ambient concentrations absent the discharge.
- (C) Effluent limitations and monitoring requirements shall be established in the permit for those parameters with primary benchmarks which are demonstrated or believed to be present in the IPR Source Water discharge based on information in the OPDES discharge permit application or other available data.
- (D) ~~The primary benchmarks or drought of record concentrations, whichever are lower, for parameters identified in this paragraph shall be applied as daily maximum permit limits in the OPDES discharge permit. Monthly average permit limits shall be established as two-thirds times the daily maximum permit limits.~~ All beneficial uses in the receiving waterbody shall be maintained and protected during drought of record conditions.
- (b) **No mixing zones.** No mixing zones or dilution factors shall be allowed for establishing effluent limitations based on IPR primary benchmarks.
- (c) **Effluent monitoring requirements.** The following effluent monitoring requirements apply:
- (1) Parameters with primary benchmarks which are included in the permit shall be monitored at the following minimum frequencies:
- (i) Disinfection Byproducts, Metals and Inorganics, Organics: Twice a month;
- (ii) Nutrients: Weekly during the period of May through October and twice a month during the period of November through April;
- (iii) Pesticides: Monthly; and
- (iv) Radionuclides: Every five (5) years upon permit renewal, in accordance with permit application requirements.
- (2) DEQ may increase the monitoring frequencies listed in (c) of this Section for a period not to exceed two years during the initial permit cycle for the purpose of establishing the pattern and extent of variation for a given pollutant.

252:628-3-6. IPR benchmarks for additional conservative parameters

- (a) **Additional conservative parameters.** Refer to Appendix A of this Chapter for the list of additional conservative parameters.
- (b) **Effluent limitations for TDS.** Effluent limitations for TDS shall be set so the maximum ambient concentration will not exceed the greater of 700 milligrams per liter or two (2) standard deviations above the mean background TDS value of the receiving waterbody prior to IPR Source Water discharge. The calculated permit limit shall be applied as a monthly average permit limit in the OPDES discharge permit. The daily maximum permit limit shall be established as 1.5 times the monthly average permit limits. Background levels may be

established from any combination of scientifically defensible data, including historical data, segment averages, and baseline monitoring.

(c) **Permit reopener for TDS.** Should receiving water monitoring for TDS indicate that the receiving waterbody has exceeded the greater of 700 milligrams per liter or two (2) standard deviations above the mean background TDS value prior to IPR discharge, the permit may be reopened and modified to reduce effluent limitations or increase frequency of effluent monitoring.

(d) **Effluent limitations for additional conservative parameters other than TDS.** Effluent limitations for additional conservative parameters other than TDS shall be calculated to meet action levels established in accordance with Subchapter 11 of this Chapter. The calculated permit limits shall be applied as monthly average permit limits in the OPDES discharge permit. Daily maximum permit limits shall be established as 1.5 times the monthly average permit limits.

(e) **Mixing zones.** Complete mixing of effluent and receiving water shall be used to determine appropriate effluent limitations for additional conservative parameters, unless superseded by mixing zones or dilution factors established in OAC 785:46. An HMB model or other DEQ-approved model shall be used for implementation purposes.

(f) **Effluent monitoring requirements.** The following effluent monitoring requirements apply:

- (1) IPR Source Water discharges shall be monitored for additional conservative parameters monthly.
- (2) DEQ may increase the monitoring frequencies listed in (f)(1) of this Section for a period not to exceed two years during the initial permit cycle for the purpose of establishing the pattern and extent of variation for a given parameter.

252:628-3-7. IPR benchmarks for nutrients, chlorophyll-a, and algal biomass

(a) **Water quality standards.** IPR Source Water discharges shall not cause or contribute to an exceedance of narrative or numerical OWQS for nutrients, dissolved oxygen or chlorophyll-a. The evaluation of potential OWQS impacts shall be made using DEQ-approved effluent and receiving waterbody modeling.

(b) **Eutrophication.** IPR Source Water discharges shall not cause or contribute to excessive growth of algal biomass, periphyton, phytoplankton, cyanobacteria, or aquatic macrophyte communities, which impairs any existing or designated beneficial use.

(c) **Mixing zones.** No mixing zones or dilution factors shall be allowed for establishing effluent limitations for nitrate (as N) and nitrite (as N). Mixing zones or dilution factors shall be designated on a case-by-case basis for establishing effluent limitations for other nutrients, unless superseded by mixing zones or dilution factors established in OAC 785:46.

(d) **Total nitrogen.** Total nitrogen shall not exceed 8 milligrams per liter as a monthly average or 12 milligrams per liter daily maximum. More stringent effluent limitations representing enhanced nutrient removal technologies for nitrogen may be established where DEQ-approved modeling demonstrates that the IPR Source Water discharge may cause or contribute to an increase in ambient receiving waterbody concentrations of nitrogen to levels that would violate paragraph (a) or (b) of this Section, or of nitrate (as N) to levels that would exceed 10 milligrams per liter.

(e) **Total phosphorus.** Total phosphorus shall not exceed 0.2 milligrams per liter monthly average or 0.3 milligrams per liter daily maximum. More stringent effluent limitations representing enhanced nutrient removal technologies for phosphorus may be established where DEQ-approved modeling demonstrates that the IPR Source Water discharge may cause or contribute to an increase in ambient receiving waterbody concentrations of phosphorus to levels that would violate paragraph (a) or (b) of this Section.

(f) **Chlorophyll-a.** The following requirements apply:

- (1) **SWS-R Waterbodies.** IPR Source Water discharges shall not cause or contribute to an increase in ambient receiving waterbody concentrations to levels that would exceed the aggregate long-term average concentration of chlorophyll-a at a depth of 0.5 meters below the waterbody surface of 0.010 milligrams per liter. Effluent limitations for nutrients to ensure compliance with this criterion shall be developed based on DEQ-approved modeling of the discharge and receiving waterbody.
- (2) **Non-SWS-R Waterbodies.** IPR Source Water discharges shall not cause or contribute to an exceedance of narrative or numerical water quality standards for nutrients or chlorophyll-a. Effluent limitations for nutrients to ensure compliance with these criteria shall be developed based on DEQ-approved modeling of the discharge and receiving water.
- (g) **Effluent monitoring requirements.** The following effluent monitoring requirements apply:
 - (1) Nutrient parameters which are included in the permit shall be monitored at a frequency of weekly during the period of May through October and twice a month during the period of November through April; and
 - (2) DEQ may increase the monitoring frequencies listed in (g)(1) of this Section for a period not to exceed two years during the initial permit cycle for the purpose of establishing the pattern and extent of variation for a given parameter.
- (h) **Harmful algal blooms.** In the event HABs occur at an area of the receiving waterbody influenced by the IPR Source Water discharge, the permittee shall immediately cease discharge via the IPR Source Water outfall, and notify DEQ within 24 hours.
 - (1) A written report evaluating the size and extent of the HABs, the potential causes for the HABs, and the steps taken to eliminate the HABs shall be submitted to DEQ within ten (10) days.
 - (2) Discharge via the IPR Source Water outfall may resume after corrective action is completed, if necessary, the HABs are eliminated and written approval is received from DEQ.

252:628-3-8. IPR benchmarks for Constituents of Emerging Concern

- (a) **Effluent monitoring requirements.** IPR Source Water discharges shall be monitored quarterly for a DEQ-approved list of CEC surrogates. In addition, IPR Source Water discharges shall be monitored for a DEQ-approved list of CECs every five (5) years upon permit renewal, in accordance with permit application requirements. IPR Sample plans are described in Subchapter 11 of this Chapter.
- (b) **Corrective actions.** Should effluent monitoring conducted in accordance with paragraph (a) of this Section demonstrate that the IPR SWTP is not achieving overall CEC reductions, show an anomalous spike, or should IPR receiving waterbody monitoring indicate a violation of an action level established in accordance with Subchapter 11 of this Chapter, the permittee shall notify DEQ within 24 hours and initiate corrective action if directed by DEQ. A written report describing the reason(s) for the failure to achieve overall CEC reductions or for the violation(s) of the action levels and the proposed corrective action(s) shall be submitted to DEQ within five (5) days. Corrective actions to control CECs shall include but not be limited to:
 - (1) Evaluating the treatment system effectiveness, operations and maintenance, and making alterations as necessary;
 - (2) Increasing the effluent monitoring frequency to better characterize the pattern and extent of variation for a given CEC;
 - (3) Evaluating the collection system for new or increased sources and taking appropriate steps to reduce these sources; and

- (4) Implementing additional source controls such as Best Management Practices (BMPs), community disposal centers for pharmaceutical and personal care products (PPCPs), and/or public outreach and awareness programs.

252:628-3-9. Monitoring frequency reduction.

After two years of monitoring, DEQ may reduce the monitoring frequencies on a case-by-case basis for parameters in this Subchapter if the applicant demonstrates that effluent limitations are being met and that public health will be protected. In no case shall the frequency of monitoring for parameters be reduced below the following frequencies:

- (1) Disinfection Byproducts, Metals and Inorganics, Organics: Monthly;
- (2) Nutrients: Twice a month during the period of May through October and monthly during the period of November through April;
- (3) Pesticides: Quarterly;
- (4) CECs: Annually;
- (5) TDS, chloride, and sulfate: Quarterly; and
- (6) Radionuclides: No monitoring frequency reduction.

252:628-3-10. Reduction or cessation of IPR Source Water discharge

(a) **Protection of public health and the environment.** DEQ may require the reduction or cessation of IPR Source Water discharge if deemed necessary to protect public health or the environment.

(b) **Violation.** Should effluent monitoring indicate a violation of an effluent limitation established in accordance with this Subchapter, the permittee shall immediately initiate corrective action and notify DEQ within 24 hours. A written report describing the reason(s) for the violation(s) and the steps taken to correct the violation(s) shall be submitted to DEQ within five (5) days. DEQ may require the permittee to reduce its discharge via the IPR Source Water outfall until corrective action is completed and written approval to resume full discharge is received from DEQ.

(c) **Serious violation.** Should a serious violation be identified, the permittee shall immediately cease discharge via the IPR Source Water outfall, initiate corrective action, and notify DEQ within 24 hours. Discharge via the IPR Source Water outfall shall not recommence until corrective action is completed and written approval is received from DEQ. Any of the following constitute a serious violation:

- (1) A 20% exceedance of a specific effluent limitation developed in accordance with this Subchapter during two or more months during a rolling six-month period;
- (2) A violation of any monthly effluent limitation by any amount for any four or more months during a rolling six-month period;
- (3) Substantial deviation from the terms of a permit;
- (4) Discharge of a parameter at a concentration that poses an acute risk to public health; or
- (5) Failure to submit any monitoring report pursuant to this Chapter.

(d) **Other compliance issues.** DEQ may require the reduction or cessation of discharge for the following compliance issues:

- (1) Multiple or continuous violations;
- (2) Substantial deviations from an order or agreement;
- (3) Substantial deviations from statutory or regulatory requirements;
- (4) Substantial deviations from approved operation and maintenance procedures as described in Subchapter 7 of this Chapter; or
- (5) Substantial deviations from approved sampling plans or action plans as described in Subchapter 11 of this Chapter.

SUBCHAPTER 5. TREATMENT STANDARDS FOR IPR SOURCE WATER

Section

- 252:628-5-1. IPR Source Water Treatment Plant
- 252:628-5-2. Source control
- 252:628-5-3. Reliability, redundancy, robustness, and resilience
- 252:628-5-4. General Standards, Preliminary Treatment Standards, and Sludge Facility Standards
- 252:628-5-5. Nutrient removal requirements
- 252:628-5-6. Filtration requirements
- 252:628-5-7. Disinfection requirements
- 252:628-5-8. Constituents of Emerging Concern requirements

252:628-5-1. IPR Source Water Treatment Plant

IPR SWTPs shall be designed to meet the IPR benchmarks outlined in Subchapter 3 of this Chapter. Basic treatment components and concepts for all IPR SWTPs are defined below in this Subchapter.

252:628-5-2. Source control

All IPR projects will be required to design and implement an enhanced source control program in order to ensure that regulated industrial chemicals, as well as CECs, that enter or could enter the wastewater collection system, especially from industrial and commercial sources, are identified, controlled, monitored, and minimized prior to entering the IPR SWTP.

252:628-5-3. Reliability, redundancy, robustness, and resilience

IPR SWTPs shall incorporate design elements that demonstrate the ability to consistently provide for protection of public health and the environment (reliability); provide sufficient treatment units and monitoring systems necessary to meet treatment and performance goals (redundancy); provide multiple barriers and demonstrate the ability to address a broad variety of parameters (robustness); and demonstrate the ability to withstand and recover from treatment upsets (resilience).

252:628-5-4. General Standards, Preliminary Treatment Standards, and Sludge Facility Standards

IPR SWTPs shall be designed to comply with the General Standards outlined in OAC 252:656-9, the Preliminary Treatment Standards outlined in OAC 252:656-13, and the Sludge Facility Standards outlined in OAC 252:656-19, along with any other construction standards outlined in OAC 252:656 that are directly related to the proposed IPR project.

252:628-5-5. Nutrient removal requirements

IPR SWTPs shall be designed to provide a high level of nutrient removal, as outlined in Subchapter 3 of this Chapter. At a minimum, IPR SWTPs shall be designed to comply with the Biological Nutrient Removal requirements outlined in OAC 252:656-16-3. Other nutrient removal options will be evaluated on a case-by-case basis.

252:628-5-6. Filtration requirements

The disinfection requirements for IPR SWTPs necessitate a high level of filtration upstream of disinfection processes. At a minimum, IPR SWTPs shall be designed to comply with the

Effluent Filtration requirements outlined in OAC 252:656-23-1 to comply with the turbidity benchmarks outlined in Subchapter 3 of this Chapter. Membrane filtration systems will be evaluated on a case-by-case basis, as outlined in OAC 252:656-23-4.

252:628-5-7. Disinfection requirements

IPR SWTPs shall include, at a minimum, a combination of a chlorine disinfection system designed to comply with OAC 252:656-21-2 and an ultraviolet radiation disinfection system designed to comply with OAC 252:656-21-3, or an approvable equivalent, in order to comply with the requirements outlined in Subchapter 3 of this Chapter. Other disinfection systems will also be considered, provided that the overall design consists of multiple barriers and achieves the disinfection requirements outlined in Subchapter 3 of this Chapter.

252:628-5-8. Constituents of Emerging Concern requirements

IPR SWTPs shall be designed in order to comply with the requirements outlined in Subchapters 1 and 3 of this Chapter related to CECs. Additional treatment, above and beyond the processes outlined in this Subchapter, shall be provided as necessary.

SUBCHAPTER 7. OPERATION AND MAINTENANCE FOR IPR SOURCE WATER TREATMENT PLANTS

Section

- 252:628-7-1. General provisions
- 252:628-7-2. Compliance required
- 252:628-7-3. DEQ's right to inspect
- 252:628-7-4. Security
- 252:628-7-5. Operation and maintenance for IPR Source Water Treatment Plants
- 252:628-7-6. Laboratory accreditation
- 252:628-7-7. Validation of data
- 252:628-7-8. Operator requirements
- 252:628-7-9. Sampling, recordkeeping and reporting requirements

252:628-7-1. General Provisions

- (a) This Subchapter sets the operation standards and maintenance criteria for IPR SWTPs. Other rules may govern indirect potable reuse operations, such as the Oklahoma Pollutant Discharge Elimination (OPDES) Standards (OAC 252:606), Water Pollution Control Facility Construction Standards (OAC 252:656), Laboratory Accreditation (OAC 252:301), Water Quality Standards Implementation (OAC 252:690), Public Water Supply Construction Standards (OAC 252:626) and Waterworks and Wastewater Works Operator Certification (OAC 252:710).
- (b) This Subchapter applies to any person or entity, including any federal facility that operates an IPR SWTP in Oklahoma.

252:628-7-2. Compliance required

IPR SWTPs shall be operated pursuant to the terms of permits issued by DEQ and this Chapter. When in conflict, the terms of the permit shall supersede the requirements of this Chapter. IPR SWTPs shall reduce or cease discharging whenever the IPR Source Water does not meet the requirements in Subchapter 3 of this Chapter.

252:628-7-3. DEQ's right to inspect

Nothing in this Chapter shall affect DEQ's statutory right to enter and inspect IPR SWTPs.

252:628-7-4. Security

IPR SWTPs shall provide:

- (1) Fencing with locking gates; and
- (2) Other necessary precautions to prevent vandalism, pilfering, trespass, and sabotage.

252:628-7-5. Operation and maintenance for IPR Source Water Treatment Plants

(a) **Operation.** IPR SWTPs shall properly operate in accordance with an O&M Manual and Operator Protocol Procedures as required in this Section. IPR SWTPs shall maintain each unit to provide treatment in accordance with DEQ-approved plans and specifications, in accordance with the purpose for which the units were designed, and according to the terms of their permits. Permits may contain more stringent provisions than contained in this Chapter to meet the intended level of reuse. Employees shall be trained in the proper operation and maintenance of the IPR SWTP.

(1) Within ninety (90) days of the completion of construction, the applicant shall submit to DEQ an O&M Manual.

(2) Within one hundred eighty (180) days of the completion of construction, the applicant shall submit to DEQ Operator Protocol Procedures for the IPR SWTP.

(b) **Staffing.** IPR SWTPs shall be properly staffed at all times while in operation.

(c) **O&M manual.** At a minimum, the O&M Manual shall include:

- (1) System treatment requirements;
- (2) Current OPDES permit requirements for both non-IPR and IPR outfalls, which shall be in accordance with OAC 252:606 and this Chapter;
- (3) Procedures for changing to and from non-IPR and IPR outfalls, including a detailed list of criteria for making changes;
- (4) Control of unit processes;
- (5) Laboratory testing;
- (6) Common operating problems;
- (7) Start-up testing and procedures;
- (8) Normal operating procedures;
- (9) Alternative and Emergency operations;
- (10) Emergency shutdown operations and emergency response;
- (11) Records control and retention;
- (12) Safety;
- (13) IPR SWTP maintenance requirements;
- (14) Spare parts and chemical inventory; and
- (15) Any other information required by DEQ.

(d) **Operator Protocol Procedures.** The IPR SWTP shall develop detailed Operating Protocol Procedures to ensure that physical steps and standard operating procedures are in place so that IPR SWTP effluent requirements will be met before releasing treated effluent into an approved surface waterbody. At a minimum, the Operator Protocol Procedures shall address the following:

- (1) The criteria used to make continuous determinations of the acceptability of the IPR Source Water being produced. This shall include the setpoints for parameters measured by continuous monitoring equipment.
- (2) The physical steps and procedures to be followed by the operator when substandard water is being produced.

- (3) The physical steps and procedures to be followed in case of emergencies, failure of processing unit(s), loss of electricity, pass through, interference, failure to meet limitations, HABS, and other disruptions.
 - (4) The physical steps and procedures to be followed by the operator when the treatment facility returns to normal operation and acceptable quality IPR Source Water is again being produced.
 - (5) Strategy for ensuring continuous operator presence while the IPR SWTP is operating and producing IPR Source Water.
- (e) **Permit renewal application.** The revised and updated O&M Manual and Operator Protocol Procedures shall be submitted with each permit renewal application to DEQ for review and shall be a prerequisite for application approval.
- (f) **Inspection and revisions.** IPR SWTPs shall periodically review and revise the O&M Manual and Operator Protocol Procedures, as appropriate, to ensure satisfactory performance. The O&M Manual and Operator Protocol Procedures and revisions shall be made available to DEQ during routine inspections.
- (g) **Compliance.** IPR SWTPs shall comply with all applicable monitoring and analytical requirements in this Chapter.

252:628-7-6. Laboratory accreditation

Analyses performed for compliance purposes shall either be performed by a laboratory accredited by DEQ or by a laboratory operator certified by DEQ at the proper level. Process control tests may be performed by a laboratory operator certified by DEQ. See OAC 252:628-7-8 for proper laboratory operator classification.

252:628-7-7. Validation of data

- (a) Samples used to determine compliance with these regulations shall be properly collected and submitted by trained and authorized personnel, analyzed in an accredited laboratory, and be representative of the IPR Source Water produced by the IPR SWTP.
- (b) Subchapter 3 of this Chapter requires continuous monitoring of flow and turbidity as a means of controlling operation of IPR SWTP. pH shall be monitored in accordance with OAC 252:628-3-4(c). Continuous monitoring equipment shall meet the following conditions:
 - (1) The proposed monitoring equipment shall generate a continuous reading;
 - (2) The proposed monitoring equipment shall be equipped with an automated data logging or recording device; and
 - (3) The proposed monitoring equipment shall be calibrated at least quarterly and according to the requirements of the manufacturer's instructions.

252:628-7-8. Operator Requirements

- (a) **Operator certification.** The superintendent of an IPR SWTP shall hold certification as both a Class A waterworks operator and a Class A wastewater works operator. The superintendent, assistant superintendent, as defined in OAC 252:710, or any operator in direct charge while an IPR SWTP is in operation and discharging IPR Source Water, shall hold such dual Class A operator certifications.
- (b) **Laboratory operator certification.** The duties performed by a laboratory operator of an IPR SWTP shall be performed by or under the general supervision of a laboratory operator that holds certification as both a Class A waterworks laboratory operator and a Class A wastewater works laboratory operator in accordance with OAC 252:710.

252:628-7-9. Sampling, Recordkeeping and Reporting Requirements

- (a) **Sampling.** Sampling shall be in accordance with DEQ-approved sampling plans required in this Chapter, OAC 252:606, and OAC 252:690.
- (b) **Recordkeeping.** The following recordkeeping requirements apply:
- (1) **Operational records.** All IPR SWTPs shall meet the following requirements:
 - (A) Keep a daily record of the operations performed in the treatment process;
 - (B) Record observations, costs, and occurrences related to the operation of the plant;
 - (C) Record the process control tests and laboratory checks;
 - (D) For each required measurement or sample, record:
 - (i) The date, exact place and time of sample and indicate whether a grab sample or composite;
 - (ii) The dates the analyses were performed;
 - (iii) The laboratory and name of the operator who performed each analysis;
 - (iv) The results of all analyses;
 - (v) The instantaneous flow at the time of grab sample collection or a record of each flow taken while collecting a composite sample; and
 - (vi) The method of composite sample calculations and other calculations;
 - (E) If applicable, the results of direct integrity testing and indirect integrity monitoring for membrane filtration as required in OAC 252:626-9-9(f); and
 - (F) Record any other applicable data.
 - (2) **Maintain records.** The facility owner shall keep records of all control and compliance testing, copies of MORs, DMRs, LMRs, laboratory bench sheets, and other applicable records for at least three (3) years. These records shall be available for inspection by DEQ personnel.
- (c) **Reporting Requirements.** The following reporting requirements apply:
- (1) **Immediate notification to DEQ.** Each IPR SWTP shall report to DEQ within 24 hours if there are any losses of treatment reliability, statistically significant process trends, or changes in the IPR SWTP influent water quality that may cause a negative effect to the IPR SWTP discharge water quality. Should effluent monitoring indicate a violation or serious violation as described in Subchapter 3 of this Chapter, the violation(s) shall be reported to the DEQ within 24 hours and reduction or cessation of discharge may be required. A written report describing the reason(s) for the violation(s) and the steps taken to correct the violation(s) shall be submitted to the DEQ within five (5) days.
 - (2) **Reports to be submitted to DEQ.** The following reports shall be submitted:
 - (A) **Discharge monitoring reports.** All DMRs shall be completed and submitted in accordance with the requirements in OAC 252:606, OAC 252:690, and the OPDES discharge permit.
 - (B) **Monthly operational reports.** Keep a daily record of minimum control tests on forms prepared or approved by DEQ. Make entries for the date samples are collected and indicate where and by whom the observations were made. Include the results of all analyses on the monthly report and use them to calculate weekly or monthly averages. The IPR SWTP shall complete and submit the original of required MOR to DEQ no later than the fifteenth (15) day of the following month
 - (C) **Lake and stream monitoring reports.** The LMR form required in Subchapter 11 of this Chapter shall be submitted with the OPDES waterbody monitoring sampling plan for DEQ approval. The report shall include results from samples taken to characterize the accumulation and concentration of conservative substances, trend monitoring, and results from statistical significance tests. The reporting frequency shall be determined by DEQ.

(d) **Additional reporting, records and/or sampling.** Additional sampling, reporting, and/or records requirements may be included by DEQ in any permit, authorization, order, consent decree, closure plan, remediation plan, or other official document issued by DEQ pursuant to applicable law and the provisions of this Chapter.

SUBCHAPTER 9. PERMITTING REQUIREMENTS FOR IPR SOURCE WATER

Section

- 252:628-9-1. General
- 252:628-9-2. Permitting process
- 252:628-9-3. Applications
- 252:628-9-4. Feasibility study
- 252:628-9-5. Pilot study
- 252:628-9-6. Engineering report
- 252:628-9-7. Plans and specifications
- 252:628-9-8. Revisions
- 252:628-9-9. Variances from construction standards
- 252:628-9-10. Operation and maintenance

252:628-9-1. General

- (a) **Purpose.** No one shall construct, modify, or operate an IPR SWTP or associated systems without first obtaining a Permit to Construct pursuant to OAC 252:656.
- (b) **Intent.** This Subchapter implements the permitting process of Part 4, Wastewater and Wastewater Treatment Systems, 27A O.S. Section 2-6-401 et seq., and the Oklahoma Uniform Environmental Permitting Act, 27A O.S. Section 2-14-101 et seq. for IPR SWTPs.
- (c) **Voluntary activity.** The discharge of IPR Source Water for surface water augmentation is a voluntary activity by the applicant, and the goal of these rules is to manage the risk to public health, safety, and welfare. The operating and monitoring requirements of this Chapter may require the reduction or cessation of the IPR discharge in accordance with Subchapters 3 and 7 of this Chapter. The applicant shall establish and/or maintain an approved non-IPR outfall separate from the IPR outfall. The approved non-IPR outfall and non-IPR wastewater treatment system shall be capable of design peak flows and wasteload for the existing and ultimate conditions, including the IPR discharge flow and wasteload.

252:628-9-2. Permitting process

The permit application is a six-step process:

- (1) Submit a feasibility study;
- (2) Submit a pilot study protocol, if required;
- (3) Submit a Wasteload Allocation (Modification) Request letter:
 - (A) The applicant shall be required to provide a hydrodynamic water quality model and a hydrologic mass balance model; and
 - (B) Any new or modified wasteload allocations require an update to the Oklahoma Water Quality Management Plan (208 Plan) which also requires approval from EPA Region 6.
- (4) Submit an engineering report (as described in OAC 252:656-3-4), including the results from pilot studies. Also, the engineering report shall be accompanied by the proposed Parameter Monitoring Lists as described in OAC 252:628-11-7;
- (5) Submit an OPDES permit application (as described in OAC 252:606) along with the Contingency Plan described in OAC 252:628-1-3(h); and

- (6) Submit the final design report (as described in OAC 252:656-3-5) along with the required application forms.

252:628-9-3. Applications

Applicants seeking permits to construct and operate an IPR SWTP shall submit documentation to DEQ as described in OAC 252:606-3, OAC 252:656-3-2, and OAC 252:690.

252:628-9-4. Feasibility study

(a) Applicants shall submit to DEQ three (3) copies and receive approval of the feasibility study for the proposed new IPR SWTP prior to the submittal of the IPR SWTP engineering report. Applicants shall also submit a letter in which the applicant endorses the content of each feasibility study submitted to DEQ.

(b) The feasibility study shall include, at a minimum:

- (1) An evaluation of the applicant's needs, preferably sourced from the applicant's local Strategic Water Supply Plan, or other similar document;
- (2) A description of water reuse and reclamation opportunities;
- (3) A description of potential alternatives (including reuse and non-reuse) with comparisons as appropriate of cost effectiveness, operational complexity, environmental impact, reliability, and flexibility;
- (4) A discussion of the potential of the project for water supply diversification, such as lowered demand on groundwater supplies in time of drought;
- (5) For waterbodies and watersheds designated as SWS-R, a discussion of the project's potential impact on water quality and the environment, including but not limited to a discussion regarding antidegradation requirements, criteria to protect beneficial uses, and assimilative capacity as described in OAC 785:45 and OAC 785:46; and
- (6) A discussion of any legal, regulatory, jurisdictional, and partnership concerns regarding the project.

252:628-9-5. Pilot study

Applicants shall submit two (2) copies of a pilot study protocol for review and approval by DEQ. If applicants believe a pilot study is not necessary, justification shall be submitted to DEQ for approval.

252:628-9-6. Engineering report

Applicants shall submit to DEQ three (3) copies and receive approval of the engineering report for proposed new construction or modifications to IPR SWTPs prior to the submittal of plans and specifications. All engineering reports submitted to DEQ shall be signed and sealed by an engineer licensed by the State of Oklahoma. The engineering report, including the results of any pilot studies, shall address the project pursuant to the approved feasibility study. Applicants shall also submit a letter in which the applicant endorses the contents of each engineering report submitted to DEQ. Engineering reports shall include the requirements as described in OAC 252:656-3-4, as well as addressing the design requirements of this Chapter.

252:628-9-7. Plans and specifications

Applicants shall submit to DEQ three (3) copies of the plans and specifications. The plans and specifications shall address the entire project pursuant to the approved engineering report as required in OAC 252:628-9-6. Plans and specifications shall include the requirements as described in OAC 252:656-3-5, as well as addressing the design requirements of this Chapter.

252:628-9-8. Revisions

Revisions of the approved IPR SWTP plans and specifications shall meet the requirements of OAC 252:656-3-6.

252:628-9-9. Variances from construction standards

The policy of DEQ is to encourage better treatment methods and equipment, including the use of new technology. DEQ may approve processes or equipment not specifically covered by the standards in this Chapter provided the permittee requests a variance. A variance from the standards in this Chapter may be allowed, upon request of the applicant, if the DEQ finds the variance shall not increase the likelihood of a system failure. No variance shall be allowed unless it is noted on the construction permit. The IPR SWTP variance request shall meet the requirements of OAC 252:656-3-7.

252:628-9-10. Operation and maintenance

Permittee shall submit O&M Manuals and Operation Protocol Procedures in accordance with OAC 252:628-7-5.

SUBCHAPTER 11. IPR RECEIVING WATERBODY MONITORING

Section

- 252:628-11-1. General provisions
- 252:628-11-2. Sampling plans
- 252:628-11-3. Data requirements
- 252:628-11-4. SWS-R requirements
- 252:628-11-5. Action levels
- 252:628-11-6. Trend monitoring
- 252:628-11-7. Developing parameter monitoring lists

252:628-11-1. General provisions

(a) **Purpose.** The rules of this Subchapter provide protocols which shall be used to monitor ambient water quality in sources for Public Water Supply (PWS) systems being augmented with IPR Source Water. The goals of the waterbody monitoring are as follows:

- (1) To protect public health and the environment by monitoring for changes in the receiving waterbody;
- (2) To protect the beneficial uses of the receiving waterbody by performing trend monitoring on parameters that are evaluated in use attainment assessments; and
- (3) To evaluate modeling outcomes for all waterbodies and to monitor the assimilative capacity for SWS-R waterbodies.

(b) **Testing Procedures.** Testing procedures for the monitoring of IPR receiving waterbodies shall be in accordance with OAC 785:46-1-4.

(c) **Quantitative data.** Data collected for the monitoring of IPR receiving waterbodies shall use analytical methods listed at 40 CFR Part 136 or other EPA-approved methods. Where there is no approved analytical method listed, the applicant shall fully describe the method used for DEQ review and obtain written approval prior to utilizing these data. All data submitted shall be defensible analytical data. Reporting and recordkeeping shall be in accordance with Subchapter 7 of this Chapter.

(d) **Measurable levels and data characterization.** Measurable levels for the monitoring of IPR receiving waterbodies shall be less than or equal to the MQLs established in Appendix B of OAC 252:690. Where there is no established MQL, the applicant shall fully describe the method

and MQL used for DEQ review and obtain approval prior to utilizing these data. Where a monitored parameter has an established MQL, DEQ shall include a provision in the permit requiring measurable levels be less than or equal to the MQL. Data shall be characterized as outlined in OAC 252:690-3-2.

(e) **Agency discretion to consider additional data.** An agency with jurisdiction may consider other relevant data meeting the requirements of this Subchapter in addition to that required by the rules in this Subchapter for any particular parameter.

(f) **Parameter Groups.** There are ten parameter groups, as described in this Subsection. The permittee shall monitor the waterbody for specific parameters subject to DEQ approval.

(1) **In-Situ.** In-situ parameters include dissolved oxygen (DO), temperature, pH, electro-conductivity (EC), and oxidation/reduction potential (ORP);

(2) **Nutrients.** Nutrient parameters include total nitrogen (TN), nitrite (as N), nitrate (as N), total Kjeldahl nitrogen (TKN), ammonia, total phosphorus (TP), and dissolved reactive phosphorus, also known as ortho-phosphorus (OP);

(3) **Algal biomass and related products.** Algal biomass and product parameters include chlorophyll-a, pheophyton, phytoplankton, phycocyanin, and cyanotoxins. Taxonomy and phytoplankton density are also included;

(4) **Minerals.** Minerals include TDS, chloride, and sulfate. Alkalinity is included in this parameter group for monitoring purposes;

(5) **Metals.** Metals include inorganic toxics listed in Appendix G of OAC 785:45, inorganic chemicals included in the National Primary Drinking Water Regulations, and metals included in the National Secondary Drinking Water Regulations. Hardness is included in this parameter group for monitoring purposes;

(6) **Microorganisms.** Microorganism parameters include E. coli, total coliform, viruses, giardia, cryptosporidium, and legionella;

(7) **Toxics.** Toxics include the organic toxics listed in Appendix G of OAC 785:45 and organic chemicals included in the National Primary Drinking Water Regulations;

(8) **Constituents of Emerging Concern.** CECs are defined in Subchapter 1 of this Chapter. For monitoring purposes, CECs are sorted into functional groups represented by at least one surrogate;

(9) **Other drinking water parameters.** National primary drinking water regulations list maximum contaminant levels (MCLs) or action levels for disinfection byproducts, inorganic chemicals, organic chemicals, microorganisms, and radionuclides. Maximum residual disinfection levels (MRDLs) are listed for disinfectants. For monitoring purposes, the drinking water parameters are those parameters listed in the National Primary Drinking Water Regulations that are not addressed in one of the other nine parameter groups; and

(10) **Total Organic Carbon.** TOC is the amount of carbon found in an organic compound.

252:628-11-2. Sampling plans

(a) **General.** The applicant shall submit sampling plans for baseline monitoring, OPDES permit monitoring, and OPDES permit renewal monitoring for DEQ approval. Sampling plans shall consider the environmental and spatial variability of the waterbody, including limnological, hydrologic, seasonal, and temporal variation. The sampling plans shall also consider both the internal and external loading and nutrient cycling.

(b) **Baseline characterization.** The provisions of this Subsection shall be used to establish a baseline characterization of the IPR receiving waterbody before the IPR Source Water discharge begins.

- (1) **Baseline characterization sampling plan.** The permittee shall submit a baseline characterization sampling plan to DEQ for review and approval. The plan shall meet the minimum requirements outlined in this Subchapter.
 - (2) **Duration.** The baseline characterization of the waterbody shall include data collected for a minimum of one (1) year. Length of monitoring plan may be adjusted by DEQ based on location and parameter.
 - (3) **Frequency.** Sampling frequency for each parameter is subject to DEQ approval and shall be identified in the sampling plan. Sampling frequency may be adjusted by DEQ based on location and parameter. Each sampling event shall occur at least once per month so that a scientifically defensible data set will be generated after one (1) year. At least ten (10) data points per monitoring site are required for a baseline data set to be considered complete.
 - (4) **Spatial.** Sampling locations for each parameter are subject to DEQ approval.
 - (5) **Baseline waterbody monitoring list.** The list of parameters monitored to establish a baseline shall be robust enough to establish a scientifically defensible baseline for all factors of concern in the receiving waterbody. The required parameters for baseline characterization are subject to DEQ approval. Additional information can be found in Subchapter 7 of this Chapter.
 - (6) **SWS-R Waterbodies.** Baseline sampling of SWS-R waterbodies shall meet the requirements of OAC 785:46-13.
- (c) **OPDES waterbody monitoring requirements.** The provisions of this subsection shall be used to establish OPDES permit waterbody monitoring requirements.
- (1) **Monitoring requirements.** The permittee shall submit a waterbody monitoring plan to DEQ for review and approval. The approved monitoring plan shall be part of the OPDES permit. The plan shall meet the minimum requirements outlined in this Subchapter. Monitoring shall be adequate to characterize the accumulation and concentration of conservative substances.
 - (2) **Frequency.** Sampling frequency for each parameter is subject to DEQ approval.
 - (3) **Spatial.** Sampling location for each parameter is subject to DEQ approval.
 - (4) **OPDES waterbody monitoring list.** The OPDES permit establishes waterbody monitoring requirements. The parameters subject to the routine OPDES waterbody monitoring may be a reduced list, utilizing surrogates and parameters likely to be present in discharge. Monitored parameters are subject to DEQ approval. Additional information can be found in Subchapter 7 of this Chapter.
 - (5) **SWS-R Waterbodies.** OPDES sampling of SWS-R waterbodies shall meet the requirements of OAC 785:46-13.
- (d) **OPDES permit renewal sampling requirements.** The provisions of this subsection shall be used to establish monitoring requirements for renewal of the OPDES permit.
- (1) **Monitoring requirements.** The permittee shall submit a sampling plan to DEQ for approval. The sampling plan shall address the sampling requirements for permit renewal and these requirements shall be included in the permit. Sampling results shall be included with the OPDES renewal application. The sampling requirements may be updated during the OPDES permit renewal process with DEQ approval.
 - (2) **Frequency.** OPDES permit renewal sampling occurs once every five years during OPDES permit renewal.
 - (3) **Spatial.** Sampling locations are subject to DEQ approval.
 - (4) **OPDES permit renewal monitoring list.** The waterbody shall be monitored for a more comprehensive list of parameters during the OPDES permit renewal cycle, occurring once every five years. The sampled parameters are subject to DEQ approval. Additional information can be found in Subchapter 7 of this Chapter.

(e) **Lake and stream monitoring reports.** OPDES waterbody monitoring sampling plan shall include a proposed LMR form for DEQ approval. The LMR form shall provide all relevant information. LMR forms shall be completed and submitted in accordance with Subchapter 7 of this Chapter.

252:628-11-3. Data requirements

(a) **General.** Scientific data from the waterbody shall be used as prescribed in this Section. Data shall be collected and analyzed in a manner consistent with testing procedures provided in OAC 785:46 or practices that are institutionally recognized and appropriate for the parameter of concern and documented in accordance with OAC 785:46-15-3(g). All relevant existing data available for a waterbody shall be used in the analysis, subject to the spatial, temporal, and other requirements of this Section.

(b) **Spatial coverage.** Subject to DEQ approval, IPR monitoring sites shall include:

- (1) All drinking water intake structures located on the receiving waterbody. Some parameters may be sampled from a raw water tap at the water treatment plant. Other parameters shall be sampled in the receiving waterbody at a point near the intake. Intake structure sampling site requirements for individual parameters are subject to DEQ approval.
- (2) Any additional drinking water intake structures within five (5) miles downstream of the discharge point.
- (3) IPR Source Water discharge areas.
- (4) Beneficial Use Monitoring Program (BUMP) monitoring stations, if applicable. Waivers for individual BUMP monitoring stations may be granted at DEQ's discretion.
- (5) Other sites as assigned. If the receiving water does not have BUMP monitoring stations, or the BUMP monitoring stations are not adequate for IPR receiving water monitoring requirements, DEQ shall assign additional monitoring sites. Alternatively, the permittee may propose monitoring sites, subject to DEQ approval.

(c) **Temporal coverage.** Monitoring frequency for all parameters shall address seasonal variability and critical periods, subject to DEQ approval. At a minimum, nutrients and algal biomass shall have a monitoring frequency of once every two weeks during the critical season of May through October and once per month during the remainder of the year. DEQ may increase the monitoring frequency of nutrients and algal biomass in the event of a harmful algal bloom in the receiving waterbody.

(d) **Additional data requirements.** The following data requirements apply.

- (1) **In-Situ.** Daily diurnal 1-meter profiles shall be required for water temperature and dissolved oxygen during periods of thermal stratification and daily diurnal surface measurements shall be required during periods of complete mix. Because periods of thermal stratification may vary seasonally and can be reservoir specific, both baseline sampling and IPR receiving waterbody monitoring may be used to determine the approximate beginning date of stratification setup, or if lakes are polymictic, the multiple stratification/mixing periods that may setup during a particular season. Validation profiles shall be measured periodically during periods of complete mix.
- (2) **Nutrients.** Nutrient monitoring shall be adequate to characterize both external and internal loading and nutrient cycling.
- (3) **Algal biomass and related products.** Algal biomass monitoring and taxonomy shall be adequate to characterize algal growth and community shifts during critical periods.

(e) **Quality assurance.** Quality of data shall be assured as outlined in OAC 785:46-15-3(g).

252:628-11-4. SWS-R requirements

- (a) **Assimilative capacity.** The permittee shall determine assimilative capacity and propose allowable consumption, if any, as outlined in OAC 785:45-5-25(c)(8)(C) and OAC 785:46-13. Monitoring for assimilative capacity in SWS-R waterbodies shall meet the requirements outlined in OAC 785:46-13. The IPR receiving waterbody monitoring program shall include monitoring the assimilative capacity.
- (b) **Chlorophyll-a.** The long-term average concentration of chlorophyll-a shall not exceed 0.010 milligrams per liter (mg/L), as outlined in OAC 785:45-5-10(7). The IPR receiving waterbody monitoring program shall include monitoring chlorophyll-a levels, with greater frequency during critical periods.
- (c) **Technical evaluation report.** The permittee shall technically evaluate the IPR receiving waterbody at least once every five years to determine the attainment or nonattainment of beneficial uses, as outlined in OAC 785:45-5-25(c)(8)(D). The IPR receiving waterbody monitoring program shall include the collection of data necessary to complete the technical evaluation report.

252:628-11-5. Action levels

- (a) **General.** At a minimum, action levels shall protect beneficial uses and the criteria developed to protect them and consider rules regarding use of assimilative capacity in SWS-R waterbodies as outlined in OAC 785:45 and OAC 785:46-13.
- (b) **Statistical significance.** Some action levels, such as the action levels for CECs, are based on a statistically significant increase. Determination of statistical significance is subject to DEQ approval. The determination of statistical significance may be determined by methods listed in this subsection, or by other DEQ-approved methods.
 - (1) **The Student's t Test.** The student's t test can be used to determine if two sets of data are significantly different from each other. A 95% confidence level shall be used when using the student's t test to determine statistical significance.
 - (2) **Multiple range tests.** Multiple range tests can be used to test for significant difference for a group of ranked means. Tests may include least significant difference or multiple t test, Student-Newman-Keuls test, Tukey's test based on allowances, and Duncan's multiple range test. A significance level of 5% shall be used.
 - (3) **Distribution free methods.** For parameters that will likely not be normally distributed, distribution free methods shall be used to determine statistical significance. Options include the Mann-Whitney test, Mood's Median test, and the Kruskal-Wallis test.
- (c) **Reporting.** Permittee shall report results from statistical significance tests on the LMR forms as required by the permit.
- (d) **Actions and action levels by parameter group.** The following requirements apply.
 - (1) **In-Situ.** Actions and action levels shall be determined by DEQ.
 - (2) **Nutrients.** The actions and action levels for nutrients are as follows:
 - (A) **Accumulation of phosphorus.** Actions and action levels shall be determined by DEQ; and
 - (B) **Accumulation of nitrogen.** Actions and action levels shall be determined by DEQ.
 - (3) **Algal biomass.** Actions and action levels shall be determined by DEQ.
 - (4) **Minerals.** The following requirements apply for minerals.
 - (A) **Total Dissolved Solids.** Requirements shall be placed in the permit to prevent the maximum ambient concentration exceeding the greater of 700 milligrams per liter or two (2) standard deviations above the mean background TDS value of the receiving waterbody prior to IPR Source Water discharge. Background levels can be established from any combination of scientifically defensible data, including historical data, segment

averages, and baseline monitoring. Potential actions to control TDS shall include one or more of the following:

- (i) Cease discharge;
 - (ii) Reduce discharge;
 - (iii) Increase treatment; and
 - (iv) Other appropriate action as approved by DEQ.
- (B) **Chloride and sulfate.** Actions and action levels shall be determined by DEQ.
- (5) **Metals.** Actions and action levels shall be determined by DEQ.
- (6) **Microorganisms.** There are no action levels for this parameter group.
- (7) **Toxics.** Actions and action levels shall be determined by DEQ.
- (8) **Constituents of Emerging Concern.** When a statistically significant accumulation is identified at any monitoring site in the waterbody, the following actions may be required at DEQ's discretion:
- (A) Investigate implications for public health and the environment. Permittee shall submit findings to DEQ.
 - (B) Increase effluent and/or waterbody monitoring frequency. Increased monitoring requirements shall be reflected in the OPDES permit. Additionally, the permittee shall not be eligible for reduced waterbody monitoring for the parameter of concern at the permit renewal.
 - (C) Pursue additional source delineation and submit findings to DEQ.
 - (D) Notification of PWS systems and any other entities as appropriate using the waterbody of the detected increase.
 - (E) Other appropriate action as approved by DEQ.
- (9) **Other drinking water parameters.** Actions and action levels shall be determined by DEQ.
- (10) **Total Organic Carbon.** There are no action levels for this parameter group.

252:628-11-6. Trend monitoring

- (a) **General.** IPR receiving waterbody monitoring data shall be analyzed for trends over multiple time steps and periods. The intent of trend monitoring is to alert the permittee to changes in the IPR receiving waterbody before action levels are reached or beneficial uses are impaired. Data collection shall be adequate to meet assumptions and requirements of statistical tests and models.
- (b) **Types of trends.** The permittee shall monitor trends for DEQ-approved parameters. The trends, including the trends from the inception of the IPR Source Water discharge, shall be monitored by the following techniques, or other DEQ-approved methods.
- (1) **Regression analysis.** Using available data collected from the first day of IPR Source Water discharge, evaluate linear and non-linear relationships of concentration or loads versus time. Use of concentrations or loads will depend on parameter. Regression analysis may also be run for shorter time periods.
 - (2) **Running average.** A running average shall be based on the sampling frequency (e.g., a running weekly average for daily monitoring, a running monthly average for weekly monitoring, etc.).
 - (3) **Projection.** Projections may be determined by calculating the sum of the two previous quarter's results plus twice the current quarter's results, with the sum divided by four, or by a similar method.
- (c) **Reporting.** Permittee shall report trend monitoring results on the LMR form as required in the permit.

252:628-11-7. Developing parameter monitoring lists

(a) **General.** Where applicable, subsets of parameter groups may be used to meet waterbody monitoring requirements. Surrogates are not appropriate for the in-situ, nutrients, algal biomass, minerals, and TOC parameter groups. Monitoring locations, frequency, and temporal concerns are addressed elsewhere in this Subchapter. All parameter monitoring lists are subject to DEQ approval. As part of the sampling plans, the applicant shall submit parameter lists for baseline monitoring, OPDES permit monitoring, and OPDES permit renewal monitoring for DEQ approval. Parameter monitoring lists shall be adequate to meet all monitoring requirements and fulfill the purposes of the waterbody monitoring as outlined in Section 1 of this Chapter.

(b) **Likely to be present in discharge.** If a parameter is likely to be present in IPR discharge, that parameter or surrogate shall be monitored in the waterbody. A parameter is considered likely to be present in the discharge if there is a permit limit established for the parameter, if pilot testing has shown it is likely to be present, or if DEQ determines it is likely to be present. Other parameters with or without permit limits may be added to or removed from waterbody monitoring as determined by DEQ.

(c) **Surrogates.** The parameter groups of metals, toxics, CECs, and other drinking water parameters are eligible to meet waterbody monitoring requirements through surrogates. The presence and concentration levels of any surrogate must be representative of its entire parameter group. All surrogates are subject to DEQ approval.

(1) **Metals.** Hardness and at least one other parameter from the metals parameter group are required for waterbody monitoring.

(2) **Toxics.** At least one organic toxic parameter is required for waterbody monitoring from each of the following categories: acid compounds, base/neutral compounds, and pesticides.

(3) **Constituents of Emerging Concern.** At least one surrogate shall be selected from each CEC functional group for waterbody monitoring. Functional groups, e.g., based on chemical structures as appropriate, will be determined by DEQ.

(4) **Other drinking water parameters.** Surrogates for waterbody monitoring may be selected for other drinking water parameters subject to DEQ approval.

(d) **Waterbody monitoring lists.** The applicant shall develop waterbody monitoring lists subject to DEQ approval for baseline characterization, OPDES permit monitoring, and OPDES permit renewal sampling. Additional requirements are outlined in OAC 252:628-11-2.

APPENDIX A. IPR SOURCE WATER BENCHMARKS

Parameter	IPR Benchmark (µg/L unless otherwise noted)
1. GENERAL BENCHMARKS	
CBOD ₅	5.0 mg/L daily maximum
Flow	Monitor continuously
pH	6.5 to 9.0 standard units
TOC	Monitor daily
TSS	5.0 mg/L daily maximum
Turbidity	Turbidity shall not exceed the following: <ul style="list-style-type: none"> • 2 NTU daily average; • 5 NTU > 5% of the daily maximum per month; or • 10 NTU daily maximum .
TRC or TRO	No measureable amount (<0.1 mg/L) daily maximum
2. PATHOGEN BENCHMARKS	
Pathogens	Disinfection <u>from secondary treated effluent to end of pipe discharge</u> shall achieve: <ol style="list-style-type: none"> (1) 5-log removal or inactivation of adenovirus type 15; (2) 5-log removal or inactivation of Salmonella typhimurium; (3) 3-log removal or inactivation of Cryptosporidium oocysts; and (4) 3-log removal or inactivation of Giardia lamblia cysts.
Total coliform	No measurable amount (<2 per 100 milliliters)
3. PRIMARY BENCHMARKS	
3.1 Non-Conservative Substances	
3.1.1 Disinfection Byproducts	
Bromate	10
Chlorine Dioxide (as ClO ₂)	800
Haloacetic acids (HAA5)	60
Total Trihalomethanes (TTHMs)	80
3.1.2 Nutrients	
Nitrate (as N)	10 mg/L
Nitrite (as N)	1 mg/L
3.2 Conservative Substances	
3.2.1 Metals and Inorganics	
Antimony	6
Arsenic	10
Barium	2,000
Beryllium	4
Chromium, Total	100
Fluoride	4,000
Selenium	50
Thallium	2
3.2.2 Organics	
Benzene	5
Benzo(a)pyrene (PAHs)	0.2
Carbofuran	40
Carbon Tetrachloride	5
Chlorobenzene	100
1,2-Dibromo-3-chloropropane (DBCP)	0.2
o-Dichlorobenzene	600

Parameter	IPR Benchmark (µg/L unless otherwise noted)
p-Dichlorobenzene	75
1,2-Dichloroethane	5
1,1-Dichloroethylene	7
cis-1,2-Dichloroethylene	70
trans-1,2-Dichloroethylene	100
Dichloromethane	5
1,2-Dichloropropane	5
Di(2-ethylhexyl)adipate	400
Di(2-ethylhexyl)phthalate	6
Ethylbenzene	700
Ethylene Dibromide	0.05
Hexachlorocyclopentadiene	50
Pentachlorophenol	1
Styrene	100
Tetrachloroethylene	5
Toluene	1,000
1,2,4-Trichlorobenzene	70
1,1,1-Trichloroethane	200
1,1,2-Trichloroethane	5
Trichloroethylene	5
Vinyl Chloride	2
Xylenes (Total)	10,000
3.2.3 Pesticides	
Alachlor	2
Atrazine	3
2,4-D	70
Dalapon	200
Dinoseb	7
Diquat	20
Endothall	100
Glyphosate	700
Heptachlor Epoxide	0.2
Lindane	0.2
Oxamyl (Vydate)	200
Picloram	500
Simazine	4
Toxaphene	3
2,4,5-TP (Silvex)	50
3.2.4 Radionuclides	
Alpha particles	15 pCi/L
Beta particles and photon emitters	4 millirems per year
Radium 226 and Radium 228 (combined)	5 pCi/L
Uranium	30
4. IPR BENCHMARKS FOR ADDITIONAL CONSERVATIVE PARAMETERS	
Chlorides	Calculated ¹
Sulfates	Calculated ¹
Total Dissolved Solids (TDS)	Calculated ¹
Aluminum	Calculated ¹ (200 ²)
Iron	Calculated ¹ (300 ²)
Manganese	Calculated ¹ (50 ²)

DRAFT
Date: January 5, 2018

Parameter	IPR Benchmark (µg/L unless otherwise noted)
5. IPR BENCHMARKS FOR NUTRIENTS	
Total Nitrogen	8 mg/L monthly average; 12 mg/L daily maximum
Total Phosphorus	0.2 mg/L monthly average; 0.3 mg/L daily maximum
6. OTHER IPR BENCHMARKS	
Foaming Agents	500

¹ Effluent limitations shall be calculated in accordance with OAC 252:628-3-6.

² EPA recommendation for drinking water.

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