**AUTHORIZATION TO DISCHARGE UNDER**
**THE OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM**

**PERMIT NUMBER: OK0043869**
**ID NUMBER: I-72002410**

In compliance with the Oklahoma Pollutant Discharge Elimination System (OPDES) Act, Title 27A Oklahoma Statutes (O.S.) § 2-6-201, *et seq.*, as amended, Oklahoma Uniform Environmental Permitting Act, 27A O.S. § 2-14-101 *et seq.*, as amended, and the rules of the Oklahoma Department of Environmental Quality (DEQ) adopted thereunder (see the Oklahoma Administrative Code (OAC) 252:606); the Federal Clean Water Act (CWA), Public Law 95-217 (33 U.S.C. 1251, *et seq.*), Section 402; and the National Pollutant Discharge Elimination System (NPDES) regulations at Title 40 of the Code of Federal Regulations (C.F.R.) Parts 122 and 124), and in reliance on the certified statements and representations heretofore made in its application,

Public Service Company of Oklahoma
Green Country Power Station
12307 South Florence Avenue
Jenks, OK 74037

is authorized to discharge from their facility, located at:

SE¼, NW¼, Section 4, Township 17 North, Range 13 East,
Indian Merdian, Tulsa County, Oklahoma
or at 12307 South Florence Avenue, Jenks, OK 74037

to receiving waters identified as: The Arkansas River in stream segment 120420 (WBID No. OK120420010010_00) of the Middle Arkansas River Basin, from:

**Outfall 001:**
Latitude 35.982840° N, Longitude 95.931625° W (GPS: NAD83)
NE¼, SE¼, NW¼, Section 4, Township 17 North, Range 13 East,
Indian Meridian, Tulsa County, Oklahoma

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

Issuance of this permit in no way or in any respect affects the permittee's civil or criminal responsibility regarding disposal of wastewater, except with respect to the permittee's legal responsibility under the OPDES Act and DEQ Rules.

This permit replaces and supersedes the previous permit issued on July 10, 2025.

The issuance date of this permit is Month Date Year.

This permit shall become effective Month Date Year.

This permit and authorization to discharge shall expire at midnight Month Date Year.

For the Oklahoma Department of Environmental Quality:

Jason Ma, P.E., Manager
Industrial Permits Section
Water Quality Division

George Russell IV, Director
Water Quality Division

# PART I
# EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

## SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

### 1. Effluent Limitations and Monitoring Requirements for Outfall 001

#### a. Interim Limitations and Monitoring Requirements

Not applicable.

#### b. Final Limitations and Monitoring Requirements

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from Outfall 001. The discharge from Outfall 001 consists of cooling tower blowdown and treated low volume wastewater from various sources as described in Section II.B of the fact sheet. Such discharge shall be limited and monitored by the permittee as specified below.

**Final Effluent Limitations**

| Parameters | Mass Loading Limits (lbs/day unless otherwise specified) | | Concentration Limits (mg/L unless otherwise specified) | |
|---|---|---|---|---|
| | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum |
| Flow<br>STORET: 50050 | Report (MGD) | Report (MGD) | --- | --- |
| Temperature (°C)<br>STORET: 00010 | --- | --- | --- | 52.0 |
| Total Residual Chlorine (TRC)<br>STORET: 50060 | --- | --- | --- | ND [1] |
| Free Available Chlorine (FAC)<br>STORET: 50064 | --- | --- | 0.2 | 0.5 |
| pH<br>STORET: 00400 | Between 6.5 s.u. – 9.0 s.u. | | | |

[1] ND is "Non-detect" and is defined as <0.1 mg/L instantaneous maximum.

**Final Monitoring Requirements**

| Parameters | Measurement Frequency [1] | Sample Type |
|---|---|---|
| Flow | Continuous | Record |
| Temperature | Continuous | Record |
| TRC | 1/week | Grab |
| FAC | 1/year | Grab |
| pH | 1/week | Grab |

[1] When discharging.

NOTE: See Parts II and III for Additional Requirements.

There shall be no discharge of a visible sheen of oil or globules of oil or grease on or in the water. Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The discharge shall not contain chemical, physical, or biological substances in concentrations that are irritating to skin or sense organs or are toxic or cause illness upon ingestion by human beings.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location:

**Outfall 001:** At the sample point located after the Internal Monitoring Point 101 sampling points (01A-1, 01A-2, and 01A-3) and prior to discharge to the Arkansas River in the, NE¼, SE¼, NW¼ of Section 4, Township 17 North, Range 13 East, Indian Meridian, Tulsa County, Oklahoma, at Latitude 35.983796° N, Longitude 95.933323° W (GPS: NAD83).

**2. Effluent Limitations and Monitoring Requirements for Internal Monitoring Point 101**

**a. Interim Limitations and Monitoring Requirements**

Not applicable.

**b. Final Limitations and Monitoring Requirements**

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from Internal Monitoring Point 101. The discharge from Internal Monitoring Point 101 consists of low volume wastewater from three (3) internal sampling points (ISP) (01A-1, 01A-2, and 01A-3). A description of the low volume wastewater sources is described in Section II.B of the fact sheet. The sampling points are sampled proportionally to total the low volume wastewater flow. Grab sample results are reported as flow-weighted averages of the three (3) sampling points. Such discharge shall be limited and monitored by the permittee as specified below.

**Final Effluent Limitations**

| Parameters | Mass Loading Limits (lbs/day unless otherwise specified) | | Concentration Limits (mg/L unless otherwise specified) | |
|---|---|---|---|---|
| | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum |
| Flow<br>STORET: 50050 | Report (GPD) | Report (GPD) | --- | --- |
| Oil and Grease<br>STORET: 00552 | --- | --- | 15 | 20 |
| Total Suspended Solids (TSS)<br>STORET: 00530 | --- | --- | 30 | 100 |

**Final Monitoring Requirements**

| Parameters | Measurement Frequency [1] | Sample Type |
|---|---|---|
| Flow | 1/week | Estimate |
| Oil and Grease | 1/month | Grab |
| TSS | 1/month | Grab |

[1] When discharging.

NOTE: See Parts II and III for Additional Requirements.

There shall be no discharge of a visible sheen of oil or globules of oil or grease on or in the water. Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations:

**ISP 01A-1:** At the sampling port located on the wastewater sump 1 discharge pipeline prior to its connection to the cooling tower blowdown pipeline to Outfall 001, in the NW¼, SE¼, NW¼ of Section 4, Township 17 North, Range 13 East, Indian Meridian, Tulsa County, Oklahoma, at Latitude 35.982650° N, Longitude 95.934397° W (GPS: NAD83).

**ISP 01A-2:** At the sampling port located on the wastewater sump 2 discharge pipeline prior to its connection to the cooling tower blowdown pipeline to Outfall 001, in the NW¼, SE¼, NW¼ of Section 4, Township 17 North, Range 13 East, Indian Meridian, Tulsa County, Oklahoma, at Latitude 35.983062° N, Longitude 95.934077° (GPS: NAD83).

**ISP 01A-3:** At the sampling port located on the wastewater sump 3 discharge pipeline prior to its connection to the cooling tower blowdown pipeline to Outfall 001, in the NW¼, SE¼, NW¼ of Section 4, Township 17 North, Range 13 East, Indian Meridian, Tulsa County, Oklahoma, at Latitude 35.983479° N, Longitude 95.933742° W (GPS: NAD83).

Sample volume from ISPs 01A-1, 01A-2, and 01A-3 shall be proportion to low volume wastewater flow. The samples for TSS shall be composited for analysis, and the TSS laboratory results shall be reported for Internal Monitoring Point 101.

In accordance with 40 C.F.R. § 122.21-g(7)(i), composite sampling is not applicable for Oil and Grease analysis. For oil and grease, individual grab samples from each of the internal sampling points (01A-1, 01A-2, and 01A-3) must be analyzed separately, and then the combined concentration shall be calculated based on a flow weight average. The final calculated result for Oil and Grease shall be reported for Internal Monitoring Point 101.

**3. Biomonitoring Requirements for Outfall TX1**

During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall TX1 (functionally identical to Outfall 001). The discharge from Outfall 001 consists of cooling tower blowdown and treated low volume wastewater from various sources as described in Section II.B of the fact sheet. Such discharge shall be limited and monitored by the permittee as specified below.

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as practical to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by DEQ for those parameters.

**Acute Whole Effluent Toxicity (WET) Reporting and Monitoring Requirements (*D. pulex*)**

| Effluent Characteristic | | | | Reporting/Monitoring Requirements [1] | | |
|---|---|---|---|---|---|---|
| | Test | Critical Dilution [2] | Parameter | 48-hour Min | Testing Frequency [3] | Sample Type |
| Testing | *Daphnia pulex*, 48-hour acute $LC_{50}$ static renewal, freshwater | 100% | Pass/Fail Survival [TIM3D] | Report | 1/quarter [4] | 24-hr comp |
| | | | $LC_{50}$ Effluent Conc [TAM3D] | Report | | |
| | | | % Mortality at 100% Effluent [TJM3D] | Report | | |
| Retesting | Retest #1 [22415] [5] | | | Report | As required [6] | 24-hr comp |
| | Retest #2 [22416] [5] | | | Report | | |

(1) See Part II, Section I, WET Limit, for additional monitoring and reporting conditions.
(2) All acute WET testing shall use the dilution series specified in Part II, Section I, Item 1.
(3) See provision for monitoring frequency reduction after the first year (Part II, Section J, Item 5.)
(4) Results of retests conducted pursuant to prior test failure shall not be substituted on Discharge Monitoring Reports (DMR) in lieu of routine test results (See Part II, Section I, Item 2.a).
(5) Applies according to the results of the test failure triggering monthly retests.
(6) Monthly retesting is required only if routine test for reporting period fails. Fill out ONLY these two (2) retest parameters on the retest DMRs, do not change the original results, and enter the correct submission date.

*D. pulex* WET reporting and monitoring requirements apply beginning the effective date of the permit, and the first reporting period is _____ to _____. The first report is due on _____.

**Acute WET Reporting and Monitoring Requirements (*Pimephales promelas* (Fathead Minnow))**

| Effluent Characteristic | | | | Reporting/Monitoring Requirements [1] | | |
|---|---|---|---|---|---|---|
| | Test | Critical Dilution [2] | Parameter | 48-hour Min | Testing Frequency [3] | Sample Type |
| Testing | Fathead Minnow, 48-hour acute $LC_{50}$ static renewal, freshwater | 100% | Pass/Fail Survival [TIM6C] | Report | 1/quarter [4] | 24-hr comp |
| | | | $LC_{50}$ Effluent Conc [TAM6C] | Report | | |
| | | | % Mortality at 100% Effluent [TJM6C] | Report | | |
| Retesting | Retest #1 [22415] [5] | | | Report | As required [6] | 24-hr comp |
| | Retest #2 [22416] [5] | | | Report | | |

(1) See Part II, Section J, WET Testing, for additional monitoring and reporting conditions.
(2) All acute WET testing shall use the dilution series specified in Part II, Section J, Item 1.
(3) See provision for monitoring frequency reduction after the first year (Part II, Section J, Item 5.)
(4) Results of retests conducted pursuant to prior test failure shall not be substituted on DMRs in lieu of routine test results (See Part II, Section J, Item 2.a).
(5) Applies according to the results of the test failure triggering monthly retests.
(6) Monthly retesting is required only if routine test for reporting period fails. Fill out ONLY these two (2) retest parameters on the retest DMRs, do not change the original results, and enter the correct submission date.

Fathead Minnow WET reporting and monitoring requirements apply beginning the effective date of the permit, and the first reporting period is _____ to _____. The first report is due on _____.

**a. Whole Effluent Toxicity Testing Summary Reports:**

Reports of all WET testing initiated, regardless of whether such tests are carried to completion, shall follow the requirements of Part II, Section I, Item 4 for *D. pulex*; and Section J, Item 4 for Fathead Minnow.

**b. Sampling Location**

Samples taken in compliance with the monitoring requirements specified above for Outfall TX1 shall be taken at the following location: at the same location as for Outfall 001 (see Section A.1.b or the Appendix for latitude/longitude and legal location).

## SECTION B. BACKGROUND MONITORING REQUIREMENTS – MONITORING DESIGNATION 999 (UPSTREAM)

Not applicable.

## SECTION C. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule: None

## SECTION D. REPORTING OF MONITORING RESULTS

Monitoring results shall be reported in accordance with the provisions of Part III, Section E(4) of the permit. Monitoring results obtained during the previous month shall be summarized and electronically reported on an electronic DMR form due to DEQ, Water Quality Division, Wastewater Compliance Tracking Section no later than the 15th day of the month following the completed monthly test. If no discharge occurs during the reporting period, an DMR form stating "No Discharge" shall be electronically submitted according to the above schedule. Instructions on how to register as a "Preparer" or "Signatory" for DMRs, as well as how to prepare and submit DMRs, can be found on DEQ's website at:

https://oklahoma.gov/deq/divisions/water-quality/wastewater-stormwater/electronic-reporting.html.

Assistance is also available by contacting DEQ at (405) 702-8100 or deqreporting@deq.ok.gov.

The first report is due on _____.

# PART II
# OTHER PERMIT REQUIREMENTS

## A. REGULATORY NOTICE

The permittee is hereby given notice that this permit is in all respects subject to compliance with and actions under any and all applicable and relevant terms, conditions, provisions and requirements and any and all amendments of the laws of the State of Oklahoma and the rules of DEQ. The absence of any express reference within this permit of any particular statutory requirement, rule(s), regulation(s), or standard(s) shall in no respect be deemed or construed to exempt or preclude the application of such requirement, rule(s), regulation(s), or standard(s) to this permit or to the permittee. By DEQ approval, grant and issuance of this permit, permittee acknowledges responsibility to obtain correct and current copies of applicable DEQ Rules (as amended), provided, however, that permittee further acknowledges that any and all amendments thereto shall become a part of this permit.

## B. REOPENER CLAUSE

This permit may be reopened for modification or revocation and reissuance to require additional monitoring and/or effluent limitations where actual or potential exceedances of State water quality criteria are determined to be the result of the permittee's discharge to the receiving water(s), or a Total Maximum Daily Load is established for the receiving stream(s), or when required as technology advances. Modification or revocation and reissuance of the permit shall follow regulations listed at 40 C.F.R. § 124.5.

## C. LABORATORY ACCREDITATION

All laboratory analyses for the parameters specified in this permit must be performed by a laboratory accredited by DEQ for those parameters.

## D. ANALYTICAL REQUIREMENTS

Unless otherwise specified in this permit, effluent and/or upstream monitoring shall be conducted according to analytical, apparatus and materials, sample collection, preservation, handling, etc., procedures listed in 40 C.F.R. Part 136 in effect on the effective date of this permit. Appendices A, B, and C to 40 C.F.R. Part 136 are specifically referenced as part of this requirement. Amendments to 40 C.F.R. Part 136 promulgated and incorporated by reference in OAC 252:606 after the effective date of this permit shall supersede these requirements as applicable.

## E. MINIMUM QUANTIFICATION LEVEL

If any individual analytical test result taken for compliance with this permit is a non-detect, then the detection limit shall be used for DMR calculations. Any time a non-detect value is used for DMR calculations and/or reporting requirements, then the value reported on the DMR shall use the less than sign (<).

## F. POLYCHLORINATED BIPHENYL COMPOUNDS

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid at any of the outfalls.

## G. LIMITS ON DISCHARGE OF CHLORINATED WASTEWATER

Neither FAC nor TRC may be discharged from any unit for more than two (2) hours in any one (1) day and not more than one (1) unit in any plant may discharge FAC or TRC at any one (1) time unless the permittee can demonstrate to the permitting agency that the units in a particular location cannot operate at or below this level of chlorination.

## H. Priority Pollutants in Cooling Tower Blowdown

The permittee shall provide written notification to DEQ at least thirty (30) days prior to commencing the use of new cooling water treatment chemical(s). Safety Data Sheets (SDS's) for all such newly proposed cooling tower maintenance/treatment chemicals shall be furnished with the notification. If proposed new cooling water treatment chemicals contain any of the priority pollutants listed in 40 C.F.R. Part 423, Appendix A, the permittee shall also provide engineering calculations for the expected level of the pollutant in the cooling tower blowdown from each affected outfall or internal monitoring point, as appropriate.

## I. Whole Effluent Toxicity Testing (*Daphnia pulex*) (48-Hour Acute $LC_{50}$, Static Renewal, Freshwater)

### 1. Scope And Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section, which apply individually and separately to the outfalls listed below. No samples or portions of samples from one (1) outfall may be composited with samples or portions of samples from another outfall. The permittee shall biomonitor for *Daphnia pulex* in accordance with the WET testing frequencies prescribed in Part I.

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by DEQ for those parameters.

Provisions for performance-based monitoring frequency reductions are contained in Item 5 of this section.

Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

- Monthly: No less than twenty (20) days and no more than forty (40) days.
- Quarterly: No less than two (2) months and no more than four (4) months.
- Semi-annually: No less than four (4) months and no more than eight (8) months.

| | |
|---|---|
| APPLICABLE TO OUTFALL(S): | 001 |
| REPORTED ON DMR AS OUTFALL(S): | TX1 |
| CRITICAL DILUTION: | 100% |
| EFFLUENT DILUTION SERIES (ALL TESTS): | 32%, 42%, 56%, 75%, 100% |
| SAMPLE TYPE: | Defined at Part I |
| TEST SPECIES/METHODS: | 40 C.F.R. Part 136, except for changes required by EPA, Region 6. |

*Daphnia pulex* acute static renewal 48-hour definitive toxicity test, Method 2021.0, EPA-821-R-02-012 (October 2002), or latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

b. Acute test failure – Acute test failure ($LC_{50}$ test) is defined as 50% or more lethality (toxicity) at 48 hours to test organisms at any effluent concentration. The 48-hour $LC_{50}$ effluent value must be >100% to indicate a

passing test. Any 48-hour $LC_{50}$ effluent value of 100% or less (or equivalently, a survival value of less than 50.1% in any test dilution) will constitute a test failure.

The LC50 is the concentration of effluent at which 50% of the organisms perish. If 50% of the organisms perish in the sample that is 100% effluent, the LC50 equals 100%. If more than 50% perish in the sample that is 100% effluent, then the LC50 is some value that is <100%. If less than 50% perish in the sample that is 100% effluent, the LC50 is some value >100%. To pass the $LC_{50}$ test, none of the sample dilutions can show 50% or more lethality (toxicity) after 48 hours.

c. Reopener clause – This permit may be reopened to require WET limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

**2. Testing Requirements Due To Test Failure**

Upon becoming aware of the failure of any test, the permittee shall immediately notify the DEQ Water Quality Division biomonitoring coordinator, and shall provide written notification within five (5) working days of the test failure with a summary of the results of, and any other pertinent circumstances associated with, the failed test.

a. Whenever there is a test failure for *Daphnia pulex* during routine testing, the frequency of testing for *Daphnia pulex* shall automatically increase to, or continue at, as appropriate, the WET testing frequency prescribed in Part I for the remaining life of the permit. In addition, two (2) additional monthly tests (retests) of *Daphnia pulex* are required. The two (2) additional tests shall be conducted monthly during the next two (2) consecutive months. The permittee shall not substitute either of the two (2) additional tests for routine toxicity testing. A full laboratory report for the failed routine test and both additional tests, if required, shall be prepared and submitted to DEQ in accordance with procedures outlined in Item 4 of this section.

b. Persistent toxicity – If either of the two (2) additional tests results in an $LC_{50}$ value less than or equal to 100%, persistent toxicity is exhibited. Then the permittee shall initiate a Toxicity Reduction Evaluation (TRE) as specified in Item 6 of this section. The TRE initiation date will be the test completion date of the first failed retest. The permittee may request a temporary exemption to this TRE-triggering criterion only if the permittee is under a compliance schedule defined in an OPDES permit or an enforcement order to affect aquatic toxicity reduction measures.

c. Intermittent toxicity – If both additional tests result in an $LC_{50}$ value of greater than 100%, persistent toxicity is not exhibited. However, if any routine test failure occurs within eighteen (18) months of a prior test failure, intermittent toxicity is exhibited, and the permittee may be required by DEQ to initiate a TRE, as described in Item 6 of this section, based on the severity and pattern of such toxic effect over time.

d. Suspension of Retesting Requirement During TRE - Retesting requirements in Item 2.a are temporarily suspended upon submittal of a TRE Action Plan. Such suspension of retesting requirements applies only to the species under evaluation by a TRE and only to the period during which a TRE is being performed.

**3. Required Toxicity Testing Conditions**

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

(1) The toxicity test control (0% effluent) must have survival equal to or greater than 90%.

(2) The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for the *Daphnia pulex* survival test.

(3) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant toxicity is exhibited in the *Daphnia pulex* survival test.

If the above criteria or criteria listed in Item 1.a are not met the test will be considered invalid. Test failure may not be construed or reported as invalid due to a coefficient of variation value for toxicity of greater than 40% for replicates tested at the critical dilution. A repeat test shall be conducted and the DEQ Water Quality Division biomonitoring coordinator notified, within the reporting period of any test determined to be invalid.

b. The permittee shall follow the requirements listed below in determining success or failure of a WET test:

The statistical analyses in the *Daphnia pulex* survival test, used to determine the $LC_{50}$ shall be in accordance with the methods described in EPA-821-R-02-012, or the most recent update thereof.

c. The permittee shall use dilution water that meets the following standards:

(1) Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. In OAC 252:606-6-36, for discharges to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow, the permittee shall substitute synthetic dilution water of similar pH, hardness and alkalinity to the closest downstream perennial water where the toxicity test is conducted. In the event that the receiving stream has sufficient flow for a sample to be collected, the facility will return to receiving stream water instead of synthetic.

(2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to meet the test acceptance criteria in Item 3.a), the permittee must submit the test results exhibiting receiving water toxicity with the full test report required in Item 4 below and may thereafter substitute synthetic dilution water for the receiving water in all subsequent tests, provided the unacceptable receiving water test met the following stipulations:

(a) A synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;

(b) The test indicating receiving water toxicity was carried out to completion (i.e., 48 hours);

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

(d) The receiving water test must be conducted at the start of each permitting cycle.

d. The permittee shall collect samples that are representative of their effluent by following the criteria listed below:

(1) Unless grab sampling is specifically authorized in Part I of the permit, the permittee shall collect two (2) flow-weighted 24-hour composite samples representative of the flows during normal operation from the outfall(s) listed at Item 1.a above. If grab sampling is authorized, all the requirements listed below for composite sampling also pertain to grab sampling. In such cases, collection of the grab sample is considered equivalent to collection of the last portion of a composite sample. Unless otherwise specified in Part I of the permit, a 24-hour composite sample consists of a minimum of twelve (12) effluent portions collected at equal time intervals, representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.

(2) The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed thirty-six (36) hours. The permittee must initiate the toxicity test within thirty-six (36) hours after the collection of the last portion of the first composite sample. The first composite sample shall be used to initiate each test. The second composite sample shall be used for 24-hour static renewal of each dilution concentration for each test. Samples shall be chilled to maintain a temperature at or below 6° C but not frozen during collection, shipping, and/or storage.

(3) The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.

(4) If it is anticipated that flow from the outfall being tested may cease prior to collection of the second composite sample, the permittee must ensure that the first composite sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated composite sample collection duration, the static renewal protocol associated with an abbreviated sample collection, and a summary of the circumstances justifying collection of an abbreviated sample must be adequately documented in the full test report required in Item 4 below. DEQ reserves the right to require a retest and/or consider the permittee in violation of this permit if the basis offered for justification of an abbreviated sample is insufficient, flawed, or in any way reflects an effort on the part of the permittee to avoid test failure by use of an abbreviated sample.

**4. Reporting**

a. The permittee shall retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall also submit to the DEQ biomonitoring coordinator a copy of the full laboratory test reports at TX1 in accordance with the Report Preparation Section of EPA-821-R-02-012 for every valid or invalid toxicity test initiated, whether carried to completion or not, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The reports shall be received no later than the 15$^{th}$ day of the month following the end of the testing period.

b. A valid test for *Daphnia pulex* (excluding retests) at TX1 must be reported on the DMR for each reporting period specified in Part I of this permit, unless the permittee is performing a TRE, which may increase the frequency of testing and reporting. An electronic DMR and a copy of the lab report must be received by the 15$^{th}$ day of the month following the end of the testing period.

If a test is determined to be invalid, the repeat test must be conducted in the coinciding testing period; if the first sample of the repeat test is taken after the last day of the final month in a testing period, the facility will be out of compliance with the reporting period. If a lethal failure is experienced for *Daphnia pulex*, two (2) monthly WET retests are required during the two-month period following the month in which the test failure is experienced.

If more than one (1) valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest lethality $LC_{50}$ effluent concentrations for all such tests as the 7-day minimum on the DMR for the reporting period in question, specifying the dates of each test in the comments section of the DMR. Under no circumstance shall the monitoring/reporting period dates at the top of the DMR form be altered.

c. If any test results in anomalous $LC_{50}$ findings (i.e., it indicates an interrupted dose response across the dilution series), DEQ recommends that the permittee contact the DEQ Water Quality Division biomonitoring coordinator for a technical review of the test results prior to submitting the full laboratory test report and DMR. A summary of all tests initiated during the reporting period, including invalid tests, repeat tests, and retests, shall be attached to the reporting period DMR for DEQ review.

A test is a REPEAT test if it is performed as the result of a previously invalid test. A test is a RETEST if it is performed as the result of a previously failed test, the exception being where the test is the first (valid) test of a reporting period, in which case it is reported as such on the DMR for that period.

(1) The reporting period test summary attached to the DMR shall be organized as follows:

(a) Invalid tests (basis for test invalidity must be described)
(b) Valid tests (other than retests) initiated during current reporting period

(c) Valid retests for tests failed during previous reporting period (if not submitted in the previous reporting period test summary)

(d) Valid retests for tests failed during current reporting period

(2) The following information shall be listed in the reporting period test summary for each valid test in categories (b) through (d) in Item 4.b(1) above:

(a) Test species

(b) Date of test initiation at laboratory

(c) Results of all concurrent effluent analyses specified in Part I of this permit

(d) All test result parameters for the test species specified in Item 4.c below.

d. The permittee shall report the following results for all VALID routine toxicity tests (excluding retests) on the DMR(s) for that reporting period in accordance with Item 4.b above and Part III of this permit.

*Daphnia pulex*

(1) Parameter TIM3D: If the *Daphnia pulex* 48-hour $LC_{50}$ for survival is equal to or less than 100%, report a "1"; otherwise, report a "0".

(2) Parameter TAM3D: Report the *Daphnia pulex* 48-hour $LC_{50}$ value for survival.

(3) Parameter TJM3D: Report the *Daphnia pulex* 48-hour percent mortality in the 100% effluent concentration.

e. The permittee shall report the following results for all VALID toxicity retests on the DMR(s) for that reporting period.

(1) Retest #1 (STORET 22415): If the first monthly retest following failure of a routine test for *Daphnia pulex* results in a 48-hour $LC_{50}$ for survival equal to or less than 100%, report a "1"; otherwise, report a "0".

(2) Retest #2 (STORET 22416): If the second monthly retest following failure of a routine test for *Daphnia pulex* results in a 48-hour $LC_{50}$ for survival equal to or less than 100%, report a "1"; otherwise, report a "0".

Results of all retests shall be reported on a copy of the DMR for the reporting period (see Item 4.b above) in which the triggering routine test failure is experienced. Such retest results (using STORET codes 22415 and 22416 only) shall be received no later than the 15th day of the month at the end of the testing period for the retest. The full report for the retest (see Item 4.a above) shall be submitted along with the retest DMR. Even if a retest cannot be conducted before the end of the reporting period for which it is required (due to test initiation interval requirements), the retest results shall still be reported for the reporting period in which the

triggering test failure is experienced. Under no circumstance shall the monitoring/reporting period dates for a supplemental retest DMR ever be modified. The permittee shall indicate the retest date in the comments section of the supplemental DMR and insert the date the DMR is submitted in the lower right-hand corner. In this manner, both retests are reported for the same reporting period as the failed routine test triggering the retests. If retesting is not required during a given reporting period, the permittee shall leave the DMR retest fields blank.

**5. Monitoring Frequency Reduction**

a. The permittee may apply for a testing frequency reduction upon the successful completion of the first year of testing for *Daphnia pulex* with no lethal effects demonstrated at or below the critical dilution. Certification in accordance with Item 5.b of this section shall be submitted with the application for monitoring frequency reduction. If granted, the monitoring frequency may be reduced to a minimum of once per six (6) months (actual testing must occur during the periods June 1st through September 30th and December 1st through March 31st) for the approved test specie(s).

b. Certification – The permittee must certify in writing that no lethal test failures have occurred for the species for which the monitoring frequency reduction is being requested and that all tests meet all test acceptability criteria in Item 3.a above. In addition, the permittee must provide a summary of all tests initiated during the period of certification including test initiation dates, species, test acceptability parameters, $LC_{50}$ concentrations, percent mortality at the 100% effluent dilution, and coefficients of variation for the control and 100% effluent dilution. If the certification is approvable, DEQ will issue a letter of confirmation of the monitoring frequency reduction. A copy of the confirmation letter will be forwarded to DEQ's Wastewater Compliance Tracking Section to update the permit reporting requirements and TX1S will be activated while TX1Q will be deactivated. DEQ may refuse to approve the certification if it determines that, during the period for which the certification is submitted, there were errors in meeting test acceptability requirements, errors in statistical interpretation affecting test results reported on DMRs, late submissions of test reports or submissions of substantively incomplete test reports. If the certification is not approved, the permittee shall continue biomonitoring of the affected test species at a frequency of once per quarter until the permit is reissued.

c. Lethal failures after a monitoring frequency reduction – If any lethal endpoint test is failed at any time after the granting of a monitoring frequency reduction, two (2) monthly retests are required for that species in accordance with Item 2 above and the monitoring frequency for the affected test species shall be increased to the WET testing frequency prescribed in Part I before the frequency reduction was granted and shall remain for the life of the permit. TX1Q will be reactivated and TX1S will be discontinued for the life of the permit. If the permittee is performing a TRE this section does not apply.

**6. TRE**

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

(1) Specific Activities. DEQ requires that a thorough audit of the design, operation and maintenance of the entire plant be done at the outset of the Toxicity Identification Evaluation (TIE) and/or TRE, rather than later in the process.

The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures, the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts TIEs and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be available through the

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U.S. Department of Commerce
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5301 Shawnee Rd., Alexandria, VA 22312
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National Service Center for Environmental Publications (NSCEP)

U.S. EPA/NSCEP
P.O. Box 42419
Cincinnati, Ohio 45242-0419
E-mail: nscep@bps-lmit.com
1-(800) 490-9198

(2) Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and to conduct chemical specific analyses when a probable toxicant has been identified. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where toxicity was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise, the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis.

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

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

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

c. The permittee shall submit to DEQ a quarterly TRE Activities Report with the DMR in months to be specified in their TRE plan, containing the following information:

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

(2) All studies/evaluations and results on the treatability of the facility's effluent toxicity; and

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

d. The permittee shall submit to DEQ a Final Report on TRE Activities no later than twenty-eight (28) months after confirming toxicity in the retests. The final report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to a 48-hour $LC_{50}$ effluent value of greater than 100%. The final report shall also provide a schedule for implementing the selected control mechanism(s).

e. Quarterly testing during the TRE is the minimum monitoring requirement. DEQ recommends that permittees performing a TRE not rely on quarterly testing alone. Failure to identify the specific chemical compound(s) causing toxicity test failure will normally result in a permit limit for whole effluent toxicity per federal regulations at 40 C.F.R. § 122.44(d)(1)(v).

## J. WHOLE EFFLUENT TOXICITY TESTING (*PIMEPHALES PROMELAS (FATHEAD MINNOW)*) (48-HOUR ACUTE $LC_{50}$, STATIC RENEWAL, FRESHWATER)

### 1. Scope And Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section, which apply individually and separately to the outfalls listed below. No samples or portions of samples from one (1) outfall may be composited with samples or portions of samples from another outfall. The permittee shall biomonitor for Fathead Minnows in accordance with the WET testing frequencies prescribed in Part I.

The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by DEQ for those parameters.

Provisions for performance-based monitoring frequency reductions are contained in Item 5 of this section.

Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

- Monthly: No less than twenty (20) days and no more than forty (40) days.
- Quarterly: No less than two (2) months and no more than four (4) months.
- Semi-annually: No less than four (4) months and no more than eight (8) months.

| | |
|---|---|
| APPLICABLE TO OUTFALL(S): | 001 |
| REPORTED ON DMR AS OUTFALL(S): | TX1 |
| CRITICAL DILUTION: | 100% |
| EFFLUENT DILUTION SERIES (ALL TESTS): | 32%, 42%, 56%, 75%, 100% |
| SAMPLE TYPE: | Defined at Part I |

TEST SPECIES/METHODS: 40 C.F.R. Part 136, except for changes required by EPA, Region 6.

Fathead Minnow acute static renewal 48-hour definitive toxicity test, Method 2000.0, EPA-821-R-02-012 (October 2002), or latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

b. Acute test failure – Acute test failure ($LC_{50}$ test) is defined as 50% or more lethality (toxicity) at 48 hours to test organisms at any effluent concentration. The 48-hour $LC_{50}$ effluent value must be >100% to indicate a passing test. Any 48-hour $LC_{50}$ effluent value of 100% or less (or equivalently, a survival value of less than 50.1% in any test dilution) will constitute a test failure.

The LC50 is the concentration of effluent at which 50% of the organisms perish. If 50% of the organisms perish in the sample that is 100% effluent, the LC50 equals 100%. If more than 50% perish in the sample that is 100% effluent, then the LC50 is some value that is <100%. If less than 50% perish in the sample that is 100% effluent, the LC50 is some value >100%. To pass the $LC_{50}$ test, none of the sample dilutions can show 50% or more lethality (toxicity) after 48 hours.

c. Reopener clause – This permit may be reopened to require WET limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

**2. Testing Requirements Due To Test Failure**

Upon becoming aware of the failure of any test, the permittee shall immediately notify the DEQ Water Quality Division biomonitoring coordinator, and shall provide written notification within five (5) working days of the test failure with a summary of the results of, and any other pertinent circumstances associated with, the failed test.

a. Whenever there is a test failure for Fathead Minnow during routine testing, the frequency of testing for Fathead Minnow shall automatically increase to, or continue at, as appropriate, the WET testing frequency prescribed in Part I for the remaining life of the permit. In addition, two (2) additional monthly tests (retests) of Fathead Minnow are required. The two (2) additional tests shall be conducted monthly during the next two (2) consecutive months. The permittee shall not substitute either of the two (2) additional tests for routine toxicity testing. A full laboratory report for the failed routine test and both additional tests, if required, shall be prepared and submitted to DEQ in accordance with procedures outlined in Item 4 of this section.

b. Persistent toxicity – If either of the two (2) additional tests results in an $LC_{50}$ value less than or equal to 100%, persistent toxicity is exhibited. Then the permittee shall initiate a TRE as specified in Item 6 of this section. The TRE initiation date will be the test completion date of the first failed retest. The permittee may request a temporary exemption to this TRE-triggering criterion only if the permittee is under a compliance schedule defined in an OPDES permit or an enforcement order to affect aquatic toxicity reduction measures.

c. Intermittent toxicity – If both additional tests result in an $LC_{50}$ value of greater than 100%, persistent toxicity is not exhibited. However, if any routine test failure occurs within eighteen (18) months of a prior test failure, intermittent toxicity is exhibited, and the permittee may be required by DEQ to initiate a TRE, as described in Item 6 of this section, based on the severity and pattern of such toxic effect over time.

d. Suspension of Retesting Requirement During TRE - Retesting requirements in Item 2.a are temporarily suspended upon submittal of a TRE Action Plan. Such suspension of retesting requirements applies only to the species under evaluation by a TRE and only to the period during which a TRE is being performed.

**3. Required Toxicity Testing Conditions**

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

(1) The toxicity test control (0% effluent) must have survival equal to or greater than 90%.

(2) The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for the Fathead minnow survival test.

(3) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant toxicity is exhibited in the Fathead minnow survival test.

If the above criteria or criteria listed in Item 1.a are not met the test will be considered invalid. Test failure may not be construed or reported as invalid due to a coefficient of variation value for toxicity of greater than 40% for replicates tested at the critical dilution. A repeat test shall be conducted and the DEQ Water Quality Division biomonitoring coordinator notified, within the reporting period of any test determined to be invalid.

b. The permittee shall follow the requirements listed below in determining success or failure of a WET test:

The statistical analyses in the Fathead minnow survival test, used to determine the $LC_{50}$ shall be in accordance with the methods described in EPA-821-R-02-012, or the most recent update thereof.

c. The permittee shall use dilution water that meets the following standards:

(1) Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. In OAC 252:606-6-36, for discharges to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow, the permittee shall substitute synthetic dilution water of similar pH, hardness and alkalinity to the closest downstream perennial water where the toxicity test is conducted. In the event that the receiving stream has sufficient flow for a sample to be collected, the facility will return to receiving stream water instead of synthetic.

(2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to meet the test acceptance criteria in Item 3.a), the permittee must submit the test results exhibiting receiving water toxicity with the full test report required in Item 4 below and may thereafter substitute synthetic dilution water for the receiving water in all subsequent tests, provided the unacceptable receiving water test met the following stipulations:

(a) A synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;

(b) The test indicating receiving water toxicity was carried out to completion (i.e., 48 hours);

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

(d) The receiving water test must be conducted at the start of each permitting cycle.

d. The permittee shall collect samples that are representative of their effluent by following the criteria listed below:

(1) Unless grab sampling is specifically authorized in Part I of the permit, the permittee shall collect two (2) flow-weighted 24-hour composite samples representative of the flows during normal operation from the outfall(s) listed at Item 1.a above. If grab sampling is authorized, all the requirements listed below for composite sampling also pertain to grab sampling. In such cases, collection of the grab sample is considered equivalent to collection of the last portion of a composite sample. Unless otherwise specified in Part I of the permit, a 24-hour composite sample consists of a minimum of twelve (12) effluent portions collected at equal time intervals, representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.

(2) The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed thirty-six (36) hours. The permittee must initiate the toxicity test within thirty-six (36) hours after the collection of the last portion of the first composite sample. The first composite sample shall be used to initiate each test. The second composite sample shall be used for 24-hour static renewal of each dilution concentration for each test. Samples shall be chilled to maintain a temperature at or below 6° C but not frozen during collection, shipping, and/or storage.

(3) The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.

(4) If it is anticipated that flow from the outfall being tested may cease prior to collection of the second composite sample, the permittee must ensure that the first composite sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated composite sample collection duration, the static renewal protocol associated with an abbreviated sample collection, and a summary of the circumstances justifying collection of an abbreviated sample must be adequately documented in the full test report required in Item 4 below. DEQ reserves the right to require a retest and/or consider the permittee in violation of this permit if the basis offered for justification of an abbreviated sample is insufficient, flawed, or in any way reflects an effort on the part of the permittee to avoid test failure by use of an abbreviated sample.

**4. Reporting**

a. The permittee shall retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall also submit to the DEQ Water Quality Division biomonitoring coordinator a copy of the full laboratory test reports at TX1 in accordance with the Report Preparation Section of EPA-821-R-02-012 for every valid or invalid toxicity test initiated, whether carried to completion or not, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The reports shall be received no later than the 15$^{th}$ day of the month following the end of the testing period.

b. A valid test for Fathead Minnow (excluding retests) at TX1 must be reported on the DMR for each reporting period specified in Part I of this permit, unless the permittee is performing a TRE, which may increase the frequency of testing and reporting. An electronic DMR and a copy of the lab report must be received by the 15$^{th}$ day of the month following the end of the testing period.

If a test is determined to be invalid, the repeat test must be conducted in the coinciding testing period; if the first sample of the repeat test is taken after the last day of the final month in a testing period, the facility will be out of compliance with the reporting period. If a lethal failure is experienced for Fathead Minnow, two (2) monthly WET retests are required during the two-month period following the month in which the test failure is experienced.

If more than one (1) valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest lethality $LC_{50}$ effluent concentrations for all such tests as the 7-day minimum

on the DMR for the reporting period in question, specifying the dates of each test in the comments section of the DMR. Under no circumstance shall the monitoring/reporting period dates at the top of the DMR form be altered.

c. If any test results in anomalous $LC_{50}$ findings (i.e., it indicates an interrupted dose response across the dilution series), DEQ recommends that the permittee contact the DEQ Water Quality Division biomonitoring coordinator for a technical review of the test results prior to submitting the full laboratory test report and DMR. A summary of all tests initiated during the reporting period, including invalid tests, repeat tests, and retests, shall be attached to the reporting period DMR for DEQ review.

A test is a REPEAT test if it is performed as the result of a previously invalid test. A test is a RETEST if it is performed as the result of a previously failed test, the exception being where the test is the first (valid) test of a reporting period, in which case it is reported as such on the DMR for that period.

(1) The reporting period test summary attached to the DMR shall be organized as follows:

(a) Invalid tests (basis for test invalidity must be described)

(b) Valid tests (other than retests) initiated during current reporting period

(c) Valid retests for tests failed during previous reporting period (if not submitted in the previous reporting period test summary)

(d) Valid retests for tests failed during current reporting period

(2) The following information shall be listed in the reporting period test summary for each valid test in categories (b) through (d) in Item 4.b(1) above:

(a) Test species

(b) Date of test initiation at laboratory

(c) Results of all concurrent effluent analyses specified in Part I of this permit

(d) All test result parameters for the test species specified in Item 4.c below.

d. The permittee shall report the following results for all VALID routine toxicity tests (excluding retests) on the DMR(s) for that reporting period in accordance with Item 4.b above and Part III of this permit.

Fathead Minnow

(1) Parameter TIM6C: If the Fathead minnow 48-hour $LC_{50}$ for survival is equal to or less than 100%, report a "1"; otherwise, report a "0".

(2) Parameter TAM6C: Report the Fathead minnow 48-hour $LC_{50}$ value for survival.

(3) Parameter TJM6C: Report the Fathead minnow 48-hour percent mortality in the 100% effluent concentration.

e. The permittee shall report the following results for all VALID toxicity retests on the DMR(s) for that reporting period.

(1) Retest #1 (STORET 22415): If the first monthly retest following failure of a routine test for Fathead minnow results in a 48-hour $LC_{50}$ for survival equal to or less than 100%, report a "1"; otherwise, report a "0".

(2) Retest #2 (STORET 22416): If the second monthly retest following failure of a routine test for Fathead minnow results in a 48-hour $LC_{50}$ for survival equal to or less than 100%, report a "1"; otherwise, report a "0".

Results of all retests shall be reported on a copy of the DMR for the reporting period (see Item 4.b above) in which the triggering routine test failure is experienced. Such retest results (using STORET codes 22415 and 22416 only) shall be received no later than the 15th day of the month at the end of the testing period for the retest. The full report for the retest (see Item 4.a above) shall be submitted along with the retest DMR. Even if a retest cannot be conducted before the end of the reporting period for which it is required (due to test initiation interval requirements), the retest results shall still be reported for the reporting period in which the triggering test failure is experienced. Under no circumstance shall the monitoring/reporting period dates for a supplemental retest DMR ever be modified. The permittee shall indicate the retest date in the comments section of the supplemental DMR and insert the date the DMR is submitted in the lower right-hand corner. In this manner, both retests are reported for the same reporting period as the failed routine test triggering the retests. If retesting is not required during a given reporting period, the permittee shall leave the DMR retest fields blank.

**5. Monitoring Frequency Reduction**

a. The permittee may apply for a testing frequency reduction upon the successful completion of the first year of testing for Fathead minnow with no lethal effects demonstrated at or below the critical dilution. Certification in accordance with Item 5.b of this section shall be submitted with the application for monitoring frequency reduction. If granted, the monitoring frequency may be reduced to a minimum of once per six (6) months (actual testing must occur during the periods June 1st through September 30th and December 1st through March 31st) for the approved test specie(s).

b. Certification – The permittee must certify in writing that no lethal test failures have occurred for the species for which the monitoring frequency reduction is being requested and that all tests meet all test acceptability criteria in Item 3.a above. In addition, the permittee must provide a summary of all tests initiated during the period of certification including test initiation dates, species, test acceptability parameters, $LC_{50}$ concentrations, percent mortality at the 100% effluent dilution, and coefficients of variation for the control and 100% effluent dilution. If the certification is approvable, DEQ will issue a letter of confirmation of the monitoring frequency reduction. A copy of the confirmation letter will be forwarded to DEQ's Permit Compliance Tracking Section to update the permit reporting requirements and TX1S will be activated while TX1Q will be deactivated. DEQ may refuse to approve the certification if it determines that, during the period for which the certification is submitted, there were errors in meeting test acceptability requirements, errors in statistical interpretation affecting test results reported on DMRs, late submissions of test reports or submissions of substantively incomplete test reports. If the certification is not approved, the permittee shall continue biomonitoring of the affected test species at a frequency of once per quarter until the permit is reissued.

c. Lethal failures after a monitoring frequency reduction – If any lethal endpoint test is failed at any time after the granting of a monitoring frequency reduction, two (2) monthly retests are required for that species in accordance with Item 2 above and the monitoring frequency for the affected test species shall be increased to the WET testing frequency prescribed in Part I before the frequency reduction was granted and shall remain for the life of the permit. TX1Q will be reactivated and TX1S will be discontinued for the life of the permit. If the permittee is performing a TRE this section does not apply.

**6. TRE**

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

(1) Specific Activities. DEQ requires that a thorough audit of the design, operation and maintenance of the entire plant be done at the outset of the TIE and/or TRE, rather than later in the process.

The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures, the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be available through the

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National Service Center for Environmental Publications (NSCEP)

U.S. EPA/NSCEP
P.O. Box 42419
Cincinnati, Ohio 45242-0419
E-mail: nscep@bps-lmit.com
1-(800) 490-9198

(2) Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and to conduct chemical specific analyses when a probable toxicant has been identified. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where toxicity was demonstrated within forty-eight (48) hours of test initiation, each

composite sample shall be analyzed independently. Otherwise, the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis.

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

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

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

c. The permittee shall submit to DEQ a quarterly TRE Activities Report with the DMR in months to be specified in their TRE plan, containing the following information:

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

(2) All studies/evaluations and results on the treatability of the facility's effluent toxicity; and

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

d. The permittee shall submit to DEQ a Final Report on TRE Activities no later than twenty-eight (28) months after confirming toxicity in the retests. The final report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to a 48-hour $LC_{50}$ effluent value of greater than 100%. The final report shall also provide a schedule for implementing the selected control mechanism(s).

e. Quarterly testing during the TRE is the minimum monitoring requirement. DEQ recommends that permittees performing a TRE not rely on quarterly testing alone. Failure to identify the specific chemical compound(s) causing toxicity test failure will normally result in a permit limit for whole effluent toxicity per federal regulations at 40 C.F.R. § 122.44(d)(1)(v).

## K. Cooling Water Intake Structure and Cooling System Requirements

Not Applicable.

## L. Surface Impoundment Requirements

Not Applicable.

## M. Tank System Requirements

Not Applicable.

## N. Other Disposal Methods

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of at a state-approved industrial waste disposal site or to a company for recycling. Disposal of any waste or wastewater shall be in a manner such as to prevent any pollutant from such materials from entering waters of the State or waters of the United States.

If any such industrial wastes are removed from the facility, the permittee shall keep accurate records which include the following information:

1. Name and address of company hauling waste.
2. The type and amount of waste hauled.
3. The final disposal site of waste hauled.

The permittee shall retain the above records for a period of at least five (5) years. Upon request, the above records shall be made available to the staff of DEQ for inspection, review, and copying.

## O. DEFINITIONS

1. "The term "total residual chlorine" (or "total residual oxidants" for intake water with bromides) means the value obtained using any of the "chlorine—total residual" methods in Table IB in 40 C.F.R. § 136.3(a), or other methods approved by the permitting authority."

2. "The term "free available chlorine" means the value obtained using any of the "chlorine—free available" methods in Table IB in 40 C.F.R. § 136.3(a) where the method has the capability of measuring free available chlorine, or other methods approved by the permitting authority."

3. "The term 'low volume waste sources' means, taken collectively as if from one (1) source, wastewater from all sources except those for which specific limitations or standards are otherwise established in this part. Low volume waste sources include, but are not limited to, the following: wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition."

4. "The term 'chemical metal cleaning waste' means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning."

5. "The term 'metal cleaning waste' means any wastewater resulting from the cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning."

6. "The term 'recirculated cooling water' means water which is passed through a cooling device for the purpose of removing such heat from the water and then passed again, except for blowdown, through the main condenser."

7. "The term 'blowdown' means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices."