



July 10, 2025

Jerry Rhymer, DCEHS Program Manager  
Myall, LLC  
4581 Webb Street  
Pryor, OK 74361

Re: OPDES Renewal Application, DEQ Permit No. OK0100439  
Myall, LLC, Mayes County, Oklahoma  
Facility ID No. I-46000740

Dear Mr. Rhymer:

Your industrial wastewater treatment system Permit is enclosed. The effective date and the expiration date of this Permit appear on the cover page. The permit was publicly noticed on June 2, 2025 (The Paper), and May 16, 2025 (by DEQ). DEQ received no comments on the draft permit.

DEQ has developed electronic systems so that NPDES-regulated entities can submit the required electronic DMRs and other reports to DEQ as the initial recipient. Please see Part I, Section C and Part III, Section.E.4 of your permit for electronic reporting requirements. Instructions on how to access and use the appropriate electronic reporting tool can be found on DEQ's website at:

<https://www.deq.ok.gov/water-quality-division/electronic-reporting/>.

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

Should you have any questions regarding the final Permit, please contact the Industrial Permits Section at the letterhead address or telephone (405) 702-8100. Should you have any questions regarding compliance with the conditions of this Permit, please contact the Industrial Enforcement Section at the same address and phone number.

Sincerely,

Carol Paden, P.E., Manager  
Industrial Permits Section  
Water Quality Division

CMP/MT/tlj IX/SLT/AR/AG/HH/SY

Enclosures

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

**PERMIT NUMBER: OK0100439  
ID NUMBER: I-46000740**

In compliance with the Oklahoma Pollutant Discharge Elimination System (OPDES) Act, 27A O.S. § 2-6-201 *et seq.*, Oklahoma Uniform Environmental Permitting Act, 27A O.S. § 2-14-101 *et seq.*, and the rules of the Oklahoma Department of Environmental Quality promulgated thereunder,

Myall, LLC  
4581 Webb Street  
Pryor, OK 74361

is authorized to discharge wastewater from their facility, located at:

Sections 6 and 17, Township 20N, Range 19EIM  
Mayes County, Oklahoma  
or at 4581 Webb Street, Pryor, OK 74361

to receiving waters identified as: The Neosho River (WBID 121600010280\_00) in Segment 121600 of the Middle Arkansas River Basin, in Mayes County, Oklahoma.

from: Outfall 001/002:

Latitude 36.206377° N, Longitude 95.245775° W (GPS: NAD83)  
SW¼, SE¼, SE¼, Section 14, Township 20N, Range 19EIM,  
Mayes 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 Department Rules.

This permit replaces and supersedes the previous permit issued on July 7, 2023.

The issuance date of this permit is July 10, 2025.

This permit shall become effective August 1, 2025.

This permit and authorization to discharge shall expire at midnight July 31, 2030.

For the Oklahoma Department of Environmental Quality:



Carol Paden, P.E., Manager  
Industrial Permits Section  
Water Quality Division



Shellie R. Chard, Director  
Water Quality Division

**PART I  
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

**SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

**Effluent Limitations and Monitoring Requirements for Outfalls 001 and 002**

During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfalls 001 and 002.

The discharge consists of treated cooling tower blowdown wastewater. Such discharge shall be limited and monitored by the permittee as specified below:

**Effluent Limitations – Outfalls 001 and 002**

| PARAMETERS                               | DISCHARGE LIMITATIONS                                       |                  |                                                           |                   |
|------------------------------------------|-------------------------------------------------------------|------------------|-----------------------------------------------------------|-------------------|
|                                          | MASS LOADING LIMITS<br>(lbs/day unless otherwise specified) |                  | CONCENTRATION LIMITS<br>(mg/L unless otherwise specified) |                   |
|                                          | MONTHLY<br>AVERAGE                                          | DAILY<br>MAXIMUM | MONTHLY<br>AVERAGE                                        | DAILY<br>MAXIMUM  |
| Flow<br>STORET: 50050                    | Report (MGD)                                                | Report (MGD)     | ---                                                       | ---               |
| Free Available Chlorine<br>STORET: 50064 | ---                                                         | ---              | 0.2                                                       | 0.5               |
| Total Residual Oxidants<br>STORET: 34044 | ---                                                         | ---              | ---                                                       | ND <sup>(1)</sup> |
| pH (s.u.)<br>STORET: 00400               | ---                                                         | ---              | between 6.5 and 9.0                                       |                   |

<sup>(1)</sup> Not Detectable (ND) is defined as <0.10 mg/L instantaneous maximum for Total Residual Oxidant (TRO) as measured by approved EPA methods found in 40 C.F.R. Part 136 for Total Residual Chlorine (TRC). The <0.10 mg/L water quality-based limit for TRO will satisfy the intent of the narrative technology-based TRC effluent limitation found in 40 C.F.R. § 423.15(j)(2).

**Monitoring Requirements – Outfalls 001 and 002**

| PARAMETERS              | MEASUREMENT FREQUENCY <sup>(1)</sup> | SAMPLE TYPE |
|-------------------------|--------------------------------------|-------------|
| Flow                    | Continuous                           | Record      |
| Free Available Chlorine | 1/year                               | Grab        |
| Total Residual Oxidants | 1/week                               | Grab        |
| pH                      | 1/week                               | Grab        |

<sup>(1)</sup> 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.

Surface waters of the state shall be maintained free from oil and grease and taste and odors.

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 for Outfalls 001 and 002, taken in compliance with the monitoring requirements specified above, shall be taken at the following location:

Outfall 001: At the sampling point inside the wastewater building in the NW¼, SE¼, SW¼, Section 6, Township 20N, Range 19E IM, Mayes County, Oklahoma, or at Latitude 36.237388° N, Longitude 95.327656° W (GPS: NAD83).

Outfall 002: At the sampling point inside the wastewater building in the SW¼, NW¼, NW¼, Section 17, Township 20N, Range 19E IM, Mayes County, Oklahoma, or at Latitude 36.217610° N, Longitude 95.314255° W (GPS: NAD83).

#### **SECTION B. SCHEDULE OF COMPLIANCE**

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

#### **SECTION C. 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 Discharge Monitoring Report (eDMR) form due to the Oklahoma Department of Environmental Quality, Water Quality Division, Wastewater Compliance Tracking Section no later than the 15<sup>th</sup> day of the month following the completed monthly test. If no discharge occurs during the reporting period, an eDMR form stating "No Discharge" shall be electronically submitted according to the above schedule. Instructions on how to register as a "Preparer" or "Signatory" for eDMRs, as well as how to prepare and submit eDMRs, can be found on DEQ's website at <https://www.deq.ok.gov/water-quality-division/electronic-reporting/>. Assistance is also available by contacting DEQ at (405) 702-8100 or [deqreporting@deq.ok.gov](mailto:deqreporting@deq.ok.gov).

The first report is due on September 15, 2025.

## **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, the rules of the Oklahoma Department of Environmental Quality, and Oklahoma's Water Quality Standards. 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 the permittee. By the Director's approval, grant and issuance of this Permit, permittee acknowledges receipt of true, correct, and current copies of Oklahoma's Water Quality Standards and the rules of the Oklahoma Department of Environmental Quality.

### **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 the Oklahoma Department of Environmental Quality 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. 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 252:606-1-3(b)(7) after the effective date of this Permit shall supersede these requirements as applicable.

### **E. MINIMUM QUANTIFICATION LEVEL (MQL)**

If any individual analytical test result taken for compliance with this permit is less than the corresponding minimum quantification level listed in OAC 252:606, Appendix H, a value of zero (0) may be used for that individual result for the DMR calculations and reporting requirements.

### **F. LIMITS ON DISCHARGE OF CHLORINATED WASTEWATER**

Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available chlorine or total residual chlorine at any one 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.

### **G. PRIORITY POLLUTANTS IN COOLING TOWER BLOWDOWN**

The permittee shall provide written notification to the Department 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, the Appendix, 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.

H. SURFACE IMPOUNDMENT REQUIREMENTS

Not applicable since there are no surface impoundments located at this facility.

I. COOLING WATER INTAKE STRUCTURE (CWIS) AND COOLING SYSTEM REQUIREMENTS

Not applicable since the cooling water used is purchased from the Oklahoma Ordnance Works Authority (OOWA).

J. 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.

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

- a. Name and address of company hauling waste;
- b. The type and amount of waste hauled; and
- c. The final disposal site of waste hauled.

Upon request, the above records shall be made available to the staff of DEQ for inspection, review, and copying.

K. DEFINITIONS

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.

## FACT SHEET

FOR THE DRAFT AUTHORIZATION TO DISCHARGE TO WATERS OF THE UNITED STATES UNDER THE OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM (OPDES).

Permit Number: OK0100439

Facility ID Number: I-46000740

Applicant: Myall, LLC  
4581 Webb Street  
Pryor, OK 74361

Issuing Office: Oklahoma Department of Environmental Quality  
Water Quality Division  
707 N. Robinson  
P.O. Box 1677  
Oklahoma City, OK 73101-1677

Michael Thomas  
Industrial Permits Section  
Water Quality Division

Date Prepared: March 25, 2025

Reviewed by: Carol Paden, P.E., Manager  
Industrial Permits Section  
Water Quality Division

Brian Clagg, P.E., Environmental Programs Manager  
Industrial Wastewater Group  
Water Quality Division

In accordance with 40 C.F.R. §§ 124.8 and 124.56, this fact sheet describes the applicant's facility operation and sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including citations to applicable effluent limitation guidelines or performance standards as required by 40 C.F.R. § 122.44. In accordance with 40 C.F.R. § 122.44(I), proposed permit limits for reissued permits are based on the more stringent of applicable technology-based limitations, applicable water quality-based limitations, or limitations in the previous permit.

Citations to 40 C.F.R. refer to promulgated regulations listed at Title 40, Code of Federal Regulations. Citations to OAC 252 refer to promulgated regulations listed at Titles 252, Oklahoma Administrative Code.

## **I. PERMITTING BACKGROUND**

### **A. CHRONOLOGY OF PERMITTING ACTIVITIES**

The following is a chronology of permitting activities leading up to the renewal of this permit.

- 07/03/2025: Permit and fact sheet routed for issuance.
- 06/02/2025: Draft permit and fact sheet public noticed by facility.
- 05/16/2025: Draft permit and fact sheet public noticed by DEQ.
- 04/17/2025: Draft permit and fact sheet sent to facility for courtesy review.
- 03/10/2025: Administrative Review Complete.
- 12/27/2024: Received proof of publication of the application.
- 12/27/2024: OPDES permit application (Forms 1 and 2C) received.
- 07/07/2023: Previous Permit Issued.

### **B. PROPOSED PERMITTING ACTION**

It is proposed that the OPDES Permit No. OK0100439 which was effective August 1, 2023, and expires on June 30, 2025, for which application for renewal was timely submitted prior to permit expiration, be reissued for a five year term in accordance with regulations promulgated at 40 C.F.R. § 122.46(a) and OAC 252:606-1-3(b)(3)(BB).

## **II. APPLICANT ACTIVITY**

### **A. DESCRIPTION AND LOCATION OF FACILITY**

Myall, LLC operates a data processing center under SIC code 7374 and is located in, and covers most of, Section 6 (with a facility addition under construction that will cover most of Section 17), Township 20N, Range 19EIM, Mayes County, Oklahoma or at 4581 Webb Street, Pryor, OK 74361.

The facility began operations in 2016. The facility employs over 100 people and operates 24 hours per day, 7 days per week in 3 shifts.

### **B. WASTEWATER GENERATION AND TREATMENT**

The facility performs high-volume data processing and internet services via processor banks and related electronic equipment. The byproduct of this processing is heated water, which is cooled in Myall's cooling towers before being recycled back through the facility. Potable water from the Oklahoma Ordnance Works Authority (OOWA)/MidAmerica Industrial Park (MAIP) water treatment plant is used as non-contact cooling water in the cooling towers. The cooling tower blowdown is the only industrial wastewater that is discharged from the facility. All sanitary wastewater is sent to the OOWA POTW located within the MAIP. The facility's industrial wastewater is first sent to the on-site wastewater treatment plant. The wastewater is de-chlorinated and pH adjusted at the treatment plant prior to being conveyed approximately 6 miles, via a 24" underground pipe, to the Neosho River where it is discharged through the physical Outfall.

A new stand-alone facility will be completed in the near future approximately ½ mile south of the current facility. Likewise, the new facility will only generate industrial wastewater in the form of cooling tower blowdown, with all sanitary wastewater being sent to the OOWA POTW. The new facility's industrial

wastewater will be treated in a plant to be constructed on the new site. The new facility's treatment plant will operate similarly to current facility's treatment plant in that each facility will treat wastewater, separately, for the discharge-limited parameters. Treatment will occur prior to being conveyed off-site via a 24" underground pipe to a connection located downstream of the North facility where it will comeingle with the North facility's wastewater. The comingled stream (from Outfalls 001 and 002) will then travel to the Neosho River where it is discharged through the physical outfall.

### III. DISCHARGE INFORMATION

#### A. DISCHARGE LOCATION

##### Outfalls to Surface Waters

| Outfall | Location                                                                            |                                              | Receiving Stream |
|---------|-------------------------------------------------------------------------------------|----------------------------------------------|------------------|
|         | Legal Description                                                                   | Latitude - Longitude                         |                  |
| 001/002 | SW¼, SE¼, SE¼, Section 14,<br>Township 20N, Range 19E IM,<br>Mayes County, Oklahoma | 36.206377° N<br>95.245775° W<br>(GPS: NAD83) | Neosho River     |

##### Sampling Points

| Outfall | Location                                                                            |                                              | Wastewater Destination                               |
|---------|-------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------|
|         | Legal Description                                                                   | Latitude - Longitude                         |                                                      |
| 001     | NW¼, SE¼, SW¼, Section 6,<br>Township 20N, Range 19E IM,<br>Mayes County, Oklahoma  | 36.237388° N<br>95.327656° W<br>(GPS: NAD83) | To the MAIP pipe leading to<br>the physical Outfall. |
| 002     | SW¼, NW¼, NW¼, Section 17,<br>Township 20N, Range 19E IM,<br>Mayes County, Oklahoma | 36.217610° N<br>95.314255° W<br>(GPS: NAD83) | To the MAIP pipe leading to<br>the physical Outfall. |

#### B. DISCHARGE DESCRIPTION AND CHARACTERISTICS

Effluent characteristics are summarized below based on information provided in the permit application and facility DMRs over the period of record (June 1, 2020, through January 31, 2025). A quantitative and qualitative description of the discharge(s) described in the permit application is available upon request for review. The discharge from the Outfalls consists of treated wastewater as described in Part II.B.1.

##### 1. DMR Data (June 2020 – January 2025) (Outfall 001)

##### Effluent Flow (MGD)

| Outfall | Frequency of Discharge | Type of Measurement | Long Term Avg. | High 30-day Avg. | Daily Max |
|---------|------------------------|---------------------|----------------|------------------|-----------|
| 001     | Continuous             | Record              | 0.6962         | 0.9397           | 2.37      |

<sup>(1)</sup> For comparison, the long-term average and high 30-day average effluent flows for Outfall 001 on which the previous permit was based were 0.435 and 0.596 MGD, respectively.

**Conventional, Non-Conventional, and Priority Pollutants**

| Parameters                    | Mass Loadings<br>(lbs/day unless otherwise specified) |                   | Concentration/Other Units<br>(mg/L unless otherwise specified) |                   |
|-------------------------------|-------------------------------------------------------|-------------------|----------------------------------------------------------------|-------------------|
|                               | Daily Maximum                                         | Long-term Average | Daily Maximum                                                  | Long-term Average |
| Total Residual Oxidants (TRO) | ---                                                   | ---               | <0.099                                                         | ---               |
| Chlorine, Free Available      | ---                                                   | ---               | <0.099                                                         | <0.099            |
| pH (s.u.)                     | ---                                                   | ---               | 6.51 – 8.75                                                    |                   |

**2. DEQ Application Data (for Outfall 001 and 002)**

**Effluent Flow (MGD)**

| Outfall | Frequency of Discharge | Type of Measurement | Long Term Avg. | High 30-day Avg. | Daily Maximum       |
|---------|------------------------|---------------------|----------------|------------------|---------------------|
| 001/002 | Continuous             | Record              | ---            | ---              | 3.76 <sup>(1)</sup> |

<sup>(1)</sup> Estimated daily maximum flow after construction of the new facility is complete and is operational.

**Conventional, Non-Conventional, and Priority Pollutants**

| Parameter                       | No. of Analyses | Daily Maximum <sup>(1)</sup> |               |
|---------------------------------|-----------------|------------------------------|---------------|
|                                 |                 | Concentration (mg/L)         | Mass (lb/day) |
| Biochemical Oxygen Demand (BOD) | 1               | 4.5                          | 142           |
| Chemical Oxygen Demand (COD)    | 1               | 69                           | 2165          |
| Total Organic Carbon (TOC)      | 1               | 15.2                         | 477           |
| Total Suspended Solids (TSS)    | 1               | 9.87                         | 310           |
| Ammonia (as N)                  | 1               | 0.235                        | 7.5           |
| Chlorides                       | 1               | 72.9                         | 2288          |
| Total Dissolved Solids          | 1               | 1056                         | 33,136        |
| Sulfates                        | 1               | 343                          | 10,763        |
| Winter Temperature (°C)         | 99              | 25.7                         | ---           |
| Summer Temperature (°C)         | 198             | 31.3                         | ---           |
| pH (S.U.)                       | 1               | 6.51 – 8.75                  |               |
| Bromide                         | 1               | 14.1                         | 443           |
| Chlorine, total residual        | 483             | 0.09                         | 2.82          |
| Phenols, total                  | 1               | 0.011                        | 0.35          |

<sup>(1)</sup> DEQ application data, Form 2C.

**3. Outfall 002**

This Outfall is for the new facility addition which is currently under construction. Sampling will begin after the construction is complete and the new facility is operational.

#### IV. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

##### A. GENERAL

Regulations promulgated at 40 C.F.R. § 122.44(a) and OAC 252:606-5-2(1) require technology-based effluent limitations to be placed in OPDES permits based on effluent limitation guidelines where applicable, on Best Professional Judgment (BPJ) of the permit writer in the absence of guidelines, or on a combination of the two.

##### B. APPLICABLE EFFLUENT LIMITATION GUIDELINES

Effluent limitation guidelines (ELGs) have not been promulgated for this category of industrial discharge.

##### C. BEST PROFESSIONAL JUDGMENT (BPJ)-BASED LIMITATIONS

Under the authority of Section 402(a)(1) of the Clean Water Act and State laws, the State can develop a permit on a case-by-case basis when ELGs are not available. This facility only discharges cooling tower blowdown. Using similar State and NPDES permits as guidance pursuant to 40 C.F.R. § 122.44(l), it is the BPJ of the permit writer that limitations for cooling tower blowdown established in 40 C.F.R. Part 423 for Steam Electric Power Generating Point Source Category will be used to determine limits for this permit. Parameter limitations will be established for this permit based on either Best Practicable Control Technology Currently Available (BPT), Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology, or New Source Performance Standards (NSPS) for cooling water blowdown. A comparison of these limitations is shown in the following table.

Comparison of Effluent Limitations

| Pollutant                                                                                                    | BPT Limitations   |                        | NSPS & BAT Limitations |                        | BCT Limitations  |                        | Outfall 001/002 Limitations <sup>(1)</sup> |                        |
|--------------------------------------------------------------------------------------------------------------|-------------------|------------------------|------------------------|------------------------|------------------|------------------------|--------------------------------------------|------------------------|
|                                                                                                              | Daily Max (mg/L)  | Monthly Average (mg/L) | Daily Max (mg/L)       | Monthly Average (mg/L) | Daily Max (mg/L) | Monthly Average (mg/L) | Daily Max (mg/L)                           | Monthly Average (mg/L) |
| Chlorine, Free Available                                                                                     | 0.5               | 0.2                    | 0.5                    | 0.2                    | ---              | ---                    | 0.5                                        | 0.2                    |
| The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except: | ---               | ---                    | (2)                    | (2)                    | ---              | ---                    | (2)                                        | (2)                    |
| Chromium, total                                                                                              | ---               | ---                    | 0.2                    | 0.2                    | ---              | ---                    | 0.2                                        | 0.2                    |
| Zinc, total                                                                                                  | ---               | ---                    | 1.0                    | 1.0                    | ---              | ---                    | 1.0                                        | 1.0                    |
| pH (s.u.)                                                                                                    | Between 6.0 – 9.0 |                        | ---                    |                        | ---              |                        | Between 6.0 – 9.0                          |                        |

<sup>(1)</sup> Effluent Limitations are based on NSPS cooling tower blowdown effluent limitations shown in 40 C.F.R. Part 423.

<sup>(2)</sup> None detected.

From the comparison above, it is the BPJ of the permit writer that the effluent limitation guidelines under 40 C.F.R. § 423.15 representing the degree of effluent reduction attainable by the application of the New Source Performance Standards (NSPS) will be used.

Other NSPS effluent limitations for cooling tower blowdown have been promulgated at 40 C.F.R. § 423.15(a)(10). They are as follows:

40 C.F.R. § 423.15(a)(10)(ii): Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or state, if the state has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

40 C.F.R. § 423.15(a)(10)(iii): At the permitting authority's discretion, instead of the monitoring in 40 C.F.R. § 122.11(b), compliance with the standards for the 126 priority pollutants in paragraph (a)(10)(i) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 C.F.R. Part 136.

A review of the Safety Data Sheets (SDS's) was completed on the chemicals that are added for cooling tower maintenance. No priority pollutants, including chromium and zinc, were found to be contained in those chemicals. Thus, application of the limitation on priority pollutants, including chromium and zinc, in chemicals added for cooling tower maintenance is not applicable at this time. However, the draft permit will contain a special condition requiring the permittee to notify DEQ at least 30 days prior to changing any chemical or commencing the use of any chemical in the cooling water system that contain one or more of the 126 priority pollutants.

#### **D. VARIANCES**

No request for a variance was received.

### **V. WATER QUALITY-BASED EFFLUENT LIMITATIONS AND CONDITIONS**

#### **A. GENERAL**

Clean Water Act (CWA) Section 101 (33 U.S.C §1251(a)(3)) states, "[I]t is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited[.]" A permit containing technology-based permit limitations alone may not adequately protect the quality of a specific receiving stream. Thus, additional water quality-based effluent limitations and/or conditions are considered in the draft permit using narrative and numerical standards contained in the Oklahoma Water Quality Standards (OWQS), as amended (OAC 252:730), and implementation criteria contained in OAC 252:740 and 252:606, promulgated by the Department of Environmental Quality (DEQ). This is to ensure that no point-source discharge results in instream aquatic toxicity, a violation of applicable narrative or numerical state water quality standards, or aquatic bioaccumulation that threatens human health.

#### **B. RECEIVING STREAM DESIGNATED USES AND ANTIDEGRADATION PROVISIONS**

##### **1. Outfalls 001 and 002**

Outfalls 001 and 002 discharge to the Neosho River (WBID 121600010280\_00) in Segment 121600 of the Middle Arkansas River Basin. As designated in Appendix A of the OWQS, the designated uses of the Neosho River in this segment are:

Public and Private Water Supply (OAC 252:730-5-10);  
Fish and Wildlife Propagation/Warm Water Aquatic Community (OAC 252:730-5-12);  
Agriculture (OAC 252:730-5-13);  
Primary Body Contact Recreation (OAC 252:730-5-16);

Aesthetics (OAC 252:730-5-19); and  
Fish Consumption (OAC 252:730-5-20).

## 2. Antidegradation Provisions

The Neosho River is not designated as an Outstanding Resource Water (ORW), High Quality Water (HQW), or Sensitive Water Supply (SWS) in Appendix A of the OWQS. Neither is it designated in Table 1 of Appendix B of the OWQS as an area of ecological and/or recreational significance or in Table 2 of Appendix B as an area containing federally-listed endangered species.

## C. WATER QUALITY STANDARDS IMPLEMENTATION

### 1. Water Quality Standards Implementation Process

To achieve the objectives stated in Section V.A above, each pollutant present at measurable levels in the facility's effluent or which has technology-based concentration limitations, for which there is one or more applicable numerical water quality criteria, is screened against the applicable numerical criteria to determine whether the pollutant has reasonable potential (RP) to exceed any of the criteria. The screens are performed in accordance with the OWQS implementation criteria in OAC 252:740 and OAC 252:606, and the Continuing Planning Process (CPP) document. In the RP screening process, the 95<sup>th</sup> percentile effluent concentration, or estimate thereof if the effluent data set is not sufficiently large to determine it directly, is used to compute an instream concentration according to regulatory mixing zone equations defined in OAC 252:740. Calculated instream concentrations are then compared with applicable criteria to determine whether RP is exhibited for any of the screened pollutants. If RP is exhibited, in accordance with 40 C.F.R. § 122.44(d)(1)(vi) and OAC 252:606, a wasteload allocation and criterion long term average is computed for each applicable criterion. Water quality-based permit limitations are calculated for each pollutant exhibiting RP for all applicable criteria. The most stringent of the resulting monthly average permit limitations is established in the draft permit for each pollutant requiring such limitations.

### 2. Summary of Regulatory Parameters

Regulatory receiving water flows are established in OAC 252:740. Effluent regulatory flows, as well as regulatory effluent and background pollutant concentrations are established in OAC 252:606, Subchapter 6. Definitions and values for these terms are as follows:

#### a. Effluent and Upstream Receiving Water Regulatory Flows

- |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $Q_{e(30)}$  | High 30-day average effluent flow rate over the two-year period of record. Values of $Q_{e(30)}$ for the various outfalls are described in Section III.B.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| $Q_{e(LTA)}$ | Long term average effluent flow rate over the two-year period of record. Values of $Q_{e(LTA)}$ for the various outfalls are described in Section III.B.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| $Q_u(7Q2)$   | Upstream 7Q2 flow rate. This is the annual 7-day, 2-year low flow of the receiving stream. Where streamflow data is published in the USGS publication, <u>Statistical Summaries of Streamflow in and near Oklahoma Through 2007</u> , by Lewis, J.M., and Esralew, R.A., 2009, minor adjustments for known upstream or downstream perennial flows and/or withdrawals, as appropriate, may be utilized to estimate the 7Q2 for a specific location upstream or downstream of the USGS gaging station. Where additional USGS published flow data is available, the 7Q2 may be calculated in accordance with OAC 252:740-1-6. If streamflow is intermittent, if USGS 7Q2 data is not available, or if the applicant has not developed a site-specific 7Q2, a default value of 1 cfs (0.6463 MGD) is assumed. |

- $Q_{u(LTA)}$**  Upstream long-term average flow rate. This is the mean annual flow of the receiving stream. Where streamflow data is published in the USGS publication, Statistical Summaries of Streamflow in and near Oklahoma Through 2007, by Lewis, J.M., and Esralew, R.A., 2009, minor adjustments for known upstream or downstream perennial flows and/or withdrawals, as appropriate, may be utilized to estimate the mean annual flow for a specific location upstream or downstream of the USGS gaging station. If published mean annual flow data is not available, it may be approximated by multiplying the receiving water's drainage area at the point of discharge by the mean annual runoff per unit area published in the CPP. The  $Q_{u(LTA)}$  for the Agriculture beneficial use for the yearly mean standard (YMS) shall be the greater of the  $Q_{u(LTA)}$  or 1.47 cfs (0.9501 MGD).
- $Q_{u(STA)}$**  Upstream short-term average flow rate. This flow rate, used only in the sample standard (SS) agriculture screen, is a function of  $Q_{u(LTA)}$ . The equation is  $Q_{u(STA)} = 0.68 \times Q_{u(LTA)}$ . The  $Q_{u(STA)}$  shall be the greater of the  $Q_{u(STA)}$  or 1.0 cfs (0.6463 MGD).

Upstream flow for the physical Outfall is established as shown in the following table. Upstream flows for the Neosho River are based on published data from years 2006–2023 for USGS gaging station 07191500, located just below the dam at Lake Hudson, approximately 6 miles upstream of the Myall, LLC discharge. This data was then analyzed using the Log-Pearson Type III Distribution method to determine the  $Q_{u(7Q2)}$  flow. Other significant flows that are used to calculate the upstream flow are the estimated flow from Chapel Branch (4.8 miles upstream of the physical Outfall) that enters the Neosho River just downstream of the gaging station 07191500, the flow contributions from significant industrial and municipal dischargers (GRDA-OK003519 is 5.9 miles upstream of the physical Outfall and AECI-OK0043907 is 1.2 miles upstream of the physical Outfall), and the flow deductions made by significant raw water intakes (OOWA-OK1021602 raw water intake is 1.7 miles upstream of the physical Outfall). Upstream flows for the physical Outfall at this facility are shown in the following tables.

#### Upstream Regulatory Flows (MGD)

| Flow Stream                                                                                                                                                                                                       | $Q_{u(7Q2)}$          | $Q_{u(LTA)}$   | $Q_{u(STA)}$ <sup>(1)</sup> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------|-----------------------------|
| Neosho River upstream at Station 07191500 (Neosho River near Chouteau)                                                                                                                                            | 159.60 <sup>(2)</sup> | 6509.5         | ---                         |
| Plus, the estimated flow from Chapel Branch downstream of the gaging station (based on an approximate drainage area of 6.14 mi <sup>2</sup> and a runoff coefficient of 0.65 cfs/mi <sup>2</sup> ) <sup>(3)</sup> | 0.6463                | 2.6            | ---                         |
| Plus, flow contributions from the significant discharger GRDA–Kerr Dam to Neosho River which lies 5.9 miles upstream of the physical Outfall. <sup>(4)</sup>                                                      | 0.0034                | 0.0459         | ---                         |
| Plus, flow contributions from the significant discharger AECI to Neosho River which lies 1.3 miles upstream of the physical Outfall. <sup>(4)</sup>                                                               | 0.1015                | 0.6731         | ---                         |
| Minus the significant raw water intakes upstream of Outfall 001 (GRDA/OOWA intake 1.6 miles upstream of the physical Outfall) <sup>(5)</sup>                                                                      | (20.45)               | (20.45)        | ---                         |
| <b>Totalized upstream flow of Neosho River at point of discharge.</b>                                                                                                                                             | <b>139.90</b>         | <b>6492.37</b> | <b>4414.81</b>              |

<sup>1</sup>  $Q_{u(STA)} = 0.68 \times Q_{u(LTA)}$

<sup>2</sup>  $Q_{u(7Q2)}$  flow is based on Log-Pearson Type III Distribution of the 7-day minimum flows for water years 2006 – 2023.

<sup>3</sup> Based on USGS stream stats application's estimation of the Chapel Branch drainage area.

<sup>4</sup> Flows of the discharge from GRDA and AECI are based on each facility's DMRs for the period from July 2019 through July 2024.

<sup>5</sup> Intake flows for GRDA/OOWA are based on average yearly intake for the period of June 2020 through June 2024.

## b. Flow Dilution Ratios (Q\*)

**Q\*** Ratio of effluent flow to stream flow, also known as dilution capacity. The Q\* ratios for industrial discharges, as well as their values, are defined in the following table.

### Q\* Values for Physical Outfall (Combined 001 and 002) (using estimated combined effluent flowrate)

| Q* Ratio |                                   | Corresponding Water Quality Screens | Implementation Reference | Q* Value |
|----------|-----------------------------------|-------------------------------------|--------------------------|----------|
| Q*       | $Q_{e(30)}/Q_{u(7Q2)}$            | Chronic Toxicity                    | OAC 252:606-6-53(1)(A)   | 0.02688  |
|          |                                   | Temperature                         | OAC 252:606-6-46(1)      |          |
| Q**      | $Q_{e(LTA)}/Q_{u(LTA)}$           | Human Health/Fish Flesh             | OAC 252:606-6-66(1)      | 0.00058  |
|          |                                   | Human Health/Fish Flesh & Water     | OAC 252:606-6-73(1)(A)   |          |
| Q***     | $Q_{e(30)}/Q_{u(LTA)}$            | Raw Water Column                    | OAC 252:606-6-73(1)(B)   | 0.00058  |
| Q****    | $Q_{e(30)}/Q_{u(STA)}^{(1)}$      | Agriculture/Sample Standard         | OAC 252:606-6-81(2)(A)   | 0.00085  |
| Q*****   | $Q_{e(LTA)}/Q_{u(LTA, AG)}^{(2)}$ | Agriculture/Yearly Mean Standard    | OAC 252:606-6-81(1)(A)   | 0.00058  |

<sup>(1)</sup>  $Q_{u(STA)}$  for the Agriculture/Sample Standard is the greater of the  $Q_{u(STA)}$  or 0.6463 MGD.

<sup>(2)</sup>  $Q_{u(LTA)}$  for the Agriculture/Yearly Mean Standard is the greater of the  $Q_{u(LTA)}$  or 0.9501 MGD.

## c. Characterization of Pollutant Effluent Concentrations

**C<sub>mean</sub>** Either the geometric mean or arithmetic average of an effluent data set, depending on the nature of the effluent data set.  $C_{mean}$  is calculated as a geometric mean if the full effluent data set for a pollutant is available. A full effluent data set is to consist of at least ten data points, and at least five of those data points are measurable. Otherwise,  $C_{mean}$  is calculated as an arithmetic average from the available data. Where a data set is unavailable, a long-term average submitted in an application (Form 2C) is assumed to be an arithmetic average (OAC 252:606-6-5). If only one data point is available, it represents  $C_{mean}$ .

**C<sub>max</sub>** The highest concentration in an effluent data set. If only one data point is available, it represents  $C_{max}$ .

**C<sub>95</sub>** The 95<sup>th</sup> percentile effluent concentration of a pollutant for the purpose of assessing whether water quality-based effluent limitations are required for that pollutant. If at least 10 data points are available, at least five of which are measurable,  $C_{95}$  is calculated directly from the effluent data set assuming a log-normal distribution according to the following equation:

$$C_{95} = \text{EXP}(\ln(x)_{\text{avg}} + 1.645 \times s_{\ln(x)})$$

where

- $\ln(x)_{\text{avg}}$ , represents the arithmetic average of the set of log-transformed data points.

$$\ln(x)_{\text{avg}} = \frac{\left[ \sum_{i=1}^N \ln(x_i) \right]}{N}$$

- $s_{\ln(x)}$ , represents the standard deviation of the set of log-transformed data points.

$$s_{\ln(x)} = \sqrt{\frac{N \sum_{i=1}^N [\ln(x_i)]^2 - \left[ \sum_{i=1}^N \ln(x_i) \right]^2}{N(N-1)}}$$

If less than 10 effluent data points are available ( $N < 10$ ),  $C_{95}$  must be estimated from the available data according to the following equation:

$$C_{95} = C_{\text{mean}} \times 2.135$$

**$C_{95(M)}$**  The 95<sup>th</sup> percentile maximum likelihood effluent concentration for purposes of determining whether additional effluent monitoring is required, calculated using the “TSD method.” The TSD method is based on the methodology in Section 3.3.2 of Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001.  $C_{95(M)}$  is calculated according to the following equation:

$$C_{95(M)} = C_{\text{max}} \times \text{RPF}_{95(M)}$$

**$\text{RPF}_{95(M)}$**   $\text{RPF}_{95(M)}$  is calculated, assuming a log-normal distribution, according to the following equation:

$$\text{RPF}_{95(M)} = \frac{\text{EXP} \left[ 1.645 \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2) \right]}{\text{EXP} \left[ z_N \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2) \right]}$$

where  $z_N$  is the upper  $k^{\text{th}}$  percentile of the normal distribution,  $k = 0.05^{1/N}$  (for the 95% confidence level), and CV is assumed to equal 0.6.

The values of  $z_N$  and the resulting value of  $\text{RPF}_{95(M)}$  for values of N from 1 to 9 are shown in the following table:

| N                    | 1      | 2      | 3      | 4      | 5     | 6     | 7     | 8     | 9     |
|----------------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| $z_N$                | -1.645 | -0.760 | -0.336 | -0.068 | 0.124 | 0.272 | 0.390 | 0.489 | 0.574 |
| $\text{RPF}_{95(M)}$ | 6.199  | 3.795  | 3.000  | 2.585  | 2.324 | 2.141 | 2.006 | 1.898 | 1.811 |

**$C_e$**  Effluent concentration. The geometric mean reported on Form 2C. If only one value is available, it will be considered to be the geometric mean. If only average values are available, the arithmetic mean of the average values will be used.

**CV** Coefficient of variation of a data set. CV is defined as the standard deviation of a data set divided by its arithmetic average, i.e.,  $CV = s_x / C_{\text{avg}}$ . Standard deviation of a data set  $s_x$  is calculated according to the following equation.

$$s_x = \sqrt{\frac{N \sum_{i=1}^N (x_i^2) - \left( \sum_{i=1}^N x_i \right)^2}{N(N-1)}}$$

Where fewer than 10 data points are available, a default CV value of 0.6 is assumed.

**C<sub>mean</sub>, C<sub>max</sub>, C<sub>95</sub>, C<sub>95(M)</sub>, and CV Values for Quantifiable Pollutants**

| Effluent Characteristic             | No. of data pts<br>(N) | Concentration<br>(µg/L unless otherwise specified) |                 |                  |                    | Calculated<br>CV <sup>(1)</sup> |
|-------------------------------------|------------------------|----------------------------------------------------|-----------------|------------------|--------------------|---------------------------------|
|                                     |                        | C <sub>mean</sub>                                  | C <sub>95</sub> | C <sub>max</sub> | C <sub>95(M)</sub> |                                 |
| Ammonia (mg/L)                      | 1                      | 0.235                                              | ---             | 0.235            | ----               | ---                             |
| Phenols, total                      | 1                      | 11                                                 | 23.49           | 11               | 68.19              | ---                             |
| Chlorides (mg/L)                    | 1                      | 72.9                                               | 155.6           | 72.9             | 451.9              | ---                             |
| Sulfates (mg/L)                     | 1                      | 343                                                | 732.3           | 343              | 2126               | ---                             |
| Total Dissolved Solids (TDS) (mg/L) | 1                      | 1056                                               | 2255            | 1056             | 6546               | ---                             |

<sup>(1)</sup> A coefficient of variation (CV) is calculated only where an effluent data set consists of at least ten data points. At least half of these data points must be measurable. A CV value of 0.6 is otherwise assumed where a data set is of insufficient size or there is an insufficient number of measurable data points to calculate a CV directly (see OAC 252:606-6-7).

**d. Pollutant Background Concentrations**

C<sub>b</sub> Upstream or background concentration of a pollutant. Specific data is used where available. Where such data is not available, and in streams where Q<sub>u(7Q2)</sub> = 0 in the absence of known upstream toxicants, background concentrations are assumed to be zero. For the agriculture screens, C<sub>b</sub> is computed using the segment average YMS and SS values for the receiving stream segment published in Appendix F to OAC 252:730 according to the following equation: C<sub>b</sub> = 2 × YMS – SS. Background levels are described in the following table.

**Background Concentrations of Pollutants Present in the Effluent  
Neosho River above the Physical Outfall**

| Pollutant                           | No. of<br>Data Pts (N) | Background Conc. (C <sub>b</sub> )<br>(µg/L unless otherwise<br>specified) | Data<br>Source            |
|-------------------------------------|------------------------|----------------------------------------------------------------------------|---------------------------|
| Ammonia (mg/L)                      | ---                    | Assumed zero <sup>(1)</sup>                                                | ---                       |
| Phenols, total                      | ---                    | Assumed zero <sup>(1)</sup>                                                | ---                       |
| Chlorides (mg/L)                    | ---                    | 12                                                                         | Calculated <sup>(2)</sup> |
| Sulfates (mg/L)                     | ---                    | 35                                                                         | Calculated <sup>(2)</sup> |
| Total Dissolved Solids (TDS) (mg/L) | ---                    | 212                                                                        | Calculated <sup>(2)</sup> |

<sup>(1)</sup> No background data available. Background level is assumed to be zero in accordance with OAC 252:606-6-11(c).

<sup>(2)</sup> Since no site-specific background data is available, background is calculated from segment-averaged YMS and SS criteria in accordance with OAC 252:606-6-16(a). For chlorides, C<sub>b</sub> = 2 × 21 - 30 = 12 mg/L. For sulfates, C<sub>b</sub> = 2 × 59 - 83 = 35 mg/L. For TDS, C<sub>b</sub> = 2 × 253 - 294 = 212.

**e. Other Applicable Terminology**

**C<sub>criterion</sub>** Numerical water quality criterion for a specific pollutant. For some pollutants, aquatic toxicity criteria are pH- or hardness-dependent. In such cases, in accordance with OAC 252:740-5-8, site-specific pH or hardness data, if available, may be used. If site-specific pH or hardness data is not available, the segment averaged pH or hardness from OAC 252:740, Appendix B, is used. Where a specific pollutant screen exhibits reasonable potential, C<sub>criterion</sub> is used to calculate the wasteload allocation (WLA). Criteria applicable to the discharges from this facility are as follows:

- Fish and wildlife propagation (F&WP) use
  - C<sub>A</sub>: Acute toxicity criterion
  - C<sub>C</sub>: Chronic toxicity criterion
- Fish consumption use
  - C<sub>FF</sub>: Human health criterion for the consumption of fish flesh
- Public and private water supply (PPWS) use
  - C<sub>RAW</sub>: Raw water column criterion
  - C<sub>FFW</sub>: Human health criterion for the consumption of fish flesh and water
- Agriculture use
  - C<sub>YMS</sub>: Yearly mean standard
  - C<sub>SS</sub>: Sample standard

**C<sub>d</sub>** Instream concentration of a specific pollutant, according to the appropriate mixing equation.

**D. WATER QUALITY-BASED REQUIREMENTS**

**1. Criteria for Protection of the Fish and Wildlife Propagation Use (Outfall 001)**

**a. DO and DO-Demanding Substances**

OAC 252:730-5-12(f)(1) requires that where DO-demanding substances are present in an effluent at significant levels, a WLA must be established according to certain seasonal criteria dependent on the receiving water's aquatic community subcategory. Once such WLAs are given technical approval by EPA, a Water Quality Management Plan (WQMP) amendment is publicly noticed. When the WQMP amendment is given final EPA approval, it may then be incorporated into an OPDES permit. For purposes of establishing permit limitations for DO-demanding substances for industries, the monthly average limit (MAL) in the draft permit for each effluent characteristic is set equal to the corresponding WLA concentration, and a daily maximum limit (DML) is set equal to 1.5 times the WLA concentration.

At this time the facility does not discharge DO-demanding substances in significant levels that would require the establishment of a WLA. A TMDL for DO is scheduled for this section of the Neosho River. Once the TMDL is completed a WLA for DO-demanding substances may be established for this facility. If a WLA is required for any DO-demanding substances discharged by the facility, then the WLA will be incorporated into the permit.

**b. pH**

OAC 252:730-5-12(f)(3) states, "The pH values shall be between 6.5 and 9.0 in waters designated for fish and wildlife propagation; unless pH values outside that range are due to natural conditions." This pH range is established in the draft permit.

**c. Oil and Grease**

OAC 252:730-5-12(f)(4) states, "All waters having the designated beneficial use of any subcategory of fish and wildlife propagation shall be maintained free of oil and grease to prevent 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 or which cause deleterious effects to the biota." A narrative (water quality-based) condition prohibiting the discharge of any visible sheen of oil or globules of oil or grease will be included in the draft permit for all outfalls.

**d. Toxicity from Halogenated Oxidants**

OAC 252:740-3-1(c) states, "Toxicity from halogens (e.g., chlorine, bromine and bromo-chloro compounds) will be controlled by dehalogenation rather than WET testing. However, use of dehalogenation shall not exempt an effluent from the WET testing requirements of this Subchapter." OAC 252:606-6-28 implements this narrative criterion as follows: "The dehalogenation requirement is implemented as 'no measurable amount' in the effluent, less than 0.1 mg/L for halogenated oxidants."

**e. Ammonia Toxicity**

OAC 252:606-6-20 requires that toxicity-based ammonia limits be compared with technology-based and/or DO-based ammonia limits, where established, for facilities classified as major industrial dischargers. There is a DO-based wasteload allocation for ammonia for the facility's discharge, as described in Section V.D.1.a. There is no basis to suspect the presence of significant levels of ammonia in the discharge from Outfalls 001 and 002.

**f. Temperature**

Even though the wastewater being discharged originated as cooling tower blowdown in which heat has been added, the heat is dissipated through the treatment process prior to being discharged. There is no addition of heat from artificial sources to the water prior to being discharged at Outfalls 001 and 002. Thus, no additional permit action is required.

**2. Aquatic Toxicity, Human Health, and Raw Water Column Criteria for Toxic Substances for Protection of the Fish and Wildlife Propagation, Fish Consumption and Public and Private Water Supply Uses**

**a. Criteria and Implementation**

**(1) Aquatic Toxicity– Fish and Wildlife Propagation Use**

Acute and chronic aquatic toxicity numerical criteria are specified at OAC 252:730-5-12(f)(6)(G) and are implemented according to procedures in OAC 252:740, Subchapter 5, OAC. 252:606-6-51 through 6-57, and Chapter 3 of the CPP.

Aquatic toxicity numerical criteria are hardness-dependent for certain metals. No hardness-dependent metals were detected in the discharge.

**(2) Protection of Human Health for Consumption of Fish Flesh – Fish Consumption Use**

Criteria for the protection of human health for the consumption of fish flesh apply only to receiving waters not designated as habitat-limited aquatic communities. Additional human health/fish flesh criteria are recommended by EPA in the National Recommended Water Quality Criteria (NRWQC). NRWQC criteria are not binding upon individual states, however. OWQS and NRWQC criteria for the protection of human health for the consumption of fish flesh are specified at OAC 252:730-5-20(b) and Publication No. EPA 822-Z-99-001, respectively, and are implemented according to the procedures in OAC 252:740, Subchapter 7, OAC 252:606-6-64 through 6-70, and Chapter 3 of the CPP.

**(3) Protection of Raw Water Column and Human Health for Consumption of Fish Flesh and Water – Public and Private Water Supply Use**

OWQS raw water column criteria and criteria for the protection of human health for the consumption of fish flesh and water are specified at OAC 252:730-5-10(1) and 252:730-5-10(6), respectively, and are implemented according to the procedures in OAC 252:740, Subchapter 7, OAC 252:606-6-71 through 6-77, and Chapter 3 of the CPP. These criteria apply only to receiving waters specifically designated in OAC 252:730, Appendix A, for the Public and Private Water Supply (PPWS) use.

**b. Determination of Reasonable Potential and Wasteload Allocation**

**(1) Reasonable Potential and WLA Equations**

**(a) Aquatic Toxicity– Fish and Wildlife Propagation Use**

For determining whether there is reasonable potential to exceed acute toxicity numerical criteria for discharges to streams, OAC 252:740-5-3(b)(2) defines a pollutant's concentration at the edge of the acute regulatory mixing zone ( $C_d$ ) as:

$$C_d = C_b + \frac{Q_{e(30)}}{64.63} (C_{95} - C_b), \text{ where } Q_{e(30)} \text{ is expressed in MGD.}$$

In order for the acute mixing zone equation to be mathematically well-behaved, i.e., for  $C_d$  to fall in the range between  $C_b$  and  $C_{95}$ , the value for  $Q_{e(30)}$  used in the acute mixing equation is limited to a maximum value of 64.63 MGD, even if the actual  $Q_{e(30)}$  exceeds 64.63 MGD.

Should a pollutant's acute toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the acute toxicity wasteload allocation is calculated in accordance with OAC 252:606-6-55(a)(1), as follows:

$$WLA_A = C_b + \frac{64.63}{Q_{e(30)}} (C_A - C_b), \text{ where } Q_{e(30)} \text{ is expressed in MGD.}$$

As with the reasonable potential equation, if the actual  $Q_{e(30)}$  exceeds 64.63 MGD, a maximum value of 64.63 MGD is used in the acute WLA equation.

For determining whether there is reasonable potential to exceed chronic toxicity numerical criteria, OAC 252:740-5-3(b)(2) defines a pollutant's maximum concentration at the boundary of the chronic regulatory mixing zone ( $C_d$ ) as:

$$C_d = C_u + 1.94 Q^* \frac{(C_{95} - C_u)}{(1 + Q^*)}, \text{ for } Q^* \leq 0.1823$$

$$C_d = C_u + \frac{(C_{95} - C_u)}{(6.17 - 15.51 Q^*)}, \text{ for } 0.1823 < Q^* < 0.3333$$

$$C_d = C_{95}, \text{ for } Q^* \geq 0.3333$$

Should a pollutant's chronic toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the chronic toxicity wasteload allocation is calculated in accordance with OAC 252:606-6-55(a)(1), as follows:

$$WLA_C = C_u + \left( \frac{1 + Q^*}{1.94 Q^*} \right) (C_C - C_u), \text{ for } Q^* \leq 0.1823$$

$$WLA_C = C_u + (6.17 - 15.51 Q^*) (C_C - C_u), \text{ for } 0.1823 < Q^* < 0.3333$$

$$WLA_C = C_C, \text{ for } Q^* \geq 0.3333$$

**(b) Protection of Human Health for Consumption of Fish Flesh – Fish Consumption Use**

OAC 252:740-7-3(b)(1) defines the reasonable potential equation for a pollutant's instream concentration  $C_d$  after complete mixing as follows:

$$C_d = \frac{(C_{95} Q^* + C_b)}{(1 + Q^*)}$$

The human health/fish flesh wasteload allocation is calculated in accordance with OAC 252:606-6-68, as follows:

$$WLA_{FF} = C_{FF} + \frac{(C_{FF} - C_b)}{Q^*}$$

Should a pollutant's OWQS human health/fish flesh screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion.

In accordance with EPA Region 6 policy, pollutants are screened for reasonable potential to exceed NRWQC human health/fish flesh consumption criteria. If reasonable potential is exhibited for a pollutant and there is no applicable state water quality criterion of any kind for that pollutant, effluent monitoring of the pollutant is required for a limited period of time as a permit condition in lieu of establishing effluent limitations.

**(c) Protection of Raw Water Column and Human Health for Consumption of Fish Flesh and Water – Public and Private Water Supply Use**

OAC 252:740-7-3(b)(1) defines the reasonable potential equation for a pollutant's instream concentration  $C_d$  after complete mixing as follows:

$$C_d = \frac{(C_{95} Q^* + C_b)}{(1 + Q^*)}$$

Raw water column and human health/fish flesh and water wasteload allocations are calculated in accordance with OAC 252:606-6-75, as follows:

$$WLA_{Raw} = C_{Raw} + \frac{(C_{Raw} - C_b)}{Q^*}, \text{ for the raw water column criterion, and}$$

$$WLA_{FFW} = C_{FFW} + \frac{(C_{FFW} - C_b)}{Q^*}, \text{ for the human health/fish flesh and water criterion.}$$

**(2) Results of Reasonable Potential Screening**

**(a) Aquatic Toxicity– Fish and Wildlife Propagation Use**

Results of the acute and chronic toxicity screen for the physical Outfall, using  $Q_{e(30)}$  values in Section III.B.2,  $Q_{u(7Q2)}$  values in Section V.C.2.a,  $C_{95}$  values in Section V.C.2.c, pollutant background levels in Section V.C.2.d, and applicable hardness-dependent metals toxicity criteria reflected in Section V.D.2.a(1), are shown in the following tables. Any required WLAs are also shown.

**(b) Protection of Human Health for Consumption of Fish Flesh – Fish Consumption Use**

Results of the OWQS and NRWQC human health/fish flesh screen for Outfall 001, using  $Q_{e(LTA)}$  values in Section III.B.1,  $Q_{u(LTA)}$  values in Section V.C.2.a,  $C_{95}$  values in Section V.C.2.c, and background levels in Section V.C.2.d, are shown in the following tables. Any required OWQS WLAs are also shown. Where water quality-based permit limitations are required, results are shown in **bold face**.

**Results of OWQS and NRWQC Human Health/Fish Flesh RP Screens**  
(concentrations in  $\mu\text{g/L}$  unless otherwise specified)

| Effluent Characteristic | State Human Health/Fish Flesh Criteria |          |                 |            | NRWQC Criteria |             |                    |
|-------------------------|----------------------------------------|----------|-----------------|------------|----------------|-------------|--------------------|
|                         | $C_d$                                  | $C_{FF}$ | $C_d > C_{FF}?$ | $WLA_{FF}$ | $C_d$          | $C_{NRWQC}$ | $C_d > C_{NRWQC}?$ |
| Phenols, total          | 0.014                                  | 860,000  | No              | N/A        | ---            | ---         | ---                |

**(c) Protection of Raw Water Column and Human Health for Consumption of Fish Flesh and Water – Public and Private Water Supply Use**

Results of the raw water column and human health/fish flesh and water screen for Outfall 001, using  $Q_{e(30)}$  and  $Q_{e(LTA)}$  values in Section III.B.1,  $Q_{u(LTA)}$  values in Section V.C.2.a,  $C_{95}$  values in Section V.C.2.c, and background levels in Section V.C.2.d, are shown in the following tables. Any required OWQS WLAs are also shown. Where water quality-based permit limitations are required, results are shown in **bold face**.

**Results of Raw Water Column and Human Health/Fish Flesh and Water RP Screens**  
(concentrations in  $\mu\text{g/L}$  unless otherwise specified)

| Effluent Characteristic | Raw Water Column |           |                  |             | Human Health/Fish Flesh and Water |           |                  |             |
|-------------------------|------------------|-----------|------------------|-------------|-----------------------------------|-----------|------------------|-------------|
|                         | $C_d$            | $C_{Raw}$ | $C_d > C_{Raw}?$ | $WLA_{Raw}$ | $C_d$                             | $C_{FFW}$ | $C_d > C_{FFW}?$ | $WLA_{FFW}$ |
| Phenols, total          | ---              | ---       | ---              | N/A         | 0.014                             | 10,000    | No               | N/A         |

**c. Permit Limitations**

Since the discharge did not demonstrate RP to exceed water quality criteria, no water quality-based limitations are required.

**3. Mineral Constituent Criteria for Protection of the Agriculture Use**

**a. Criteria and Implementation**

Yearly mean standard (YMS) and sample standard (SS) criteria for surface waters designated for the Agriculture use are specified at OAC 252:730-5-13 and Appendix F thereto, and are implemented according to procedures in OAC 252:740, Subchapter 9, OAC 252:606-6-79 through 6-85, and Chapter 3 of the CPP. OAC 252:740-9-2 requires that where segment-averaged YMS and SS values in OAC 252:730, Appendix F, are available and are adequate to represent the receiving stream in question, they be used as the criteria for protection of the Agriculture use. In the absence of site-specific YMS and SS criteria, a mineral constituent's background concentration ( $C_b$ ) is derived from the basin-wide YMS and SS criteria in OAC 252:730, Appendix F, as follows:  $C_b = 2 \times C_{YMS} - C_{SS}$ .

The results are shown in the table below.

**Background, YMS Criterion and SS Criterion**  
(concentration expressed in  $\text{mg/L}$ )

| Outfall                | Pollutant                    | $C_b$ | YMS | SS  |
|------------------------|------------------------------|-------|-----|-----|
| 001/002 <sup>(1)</sup> | Chlorides                    | 12    | 21  | 30  |
|                        | Sulfates                     | 35    | 59  | 83  |
|                        | Total Dissolved Solids (TDS) | 212   | 253 | 294 |

<sup>(1)</sup> Criteria and background based on segment average.

## b. Determination of Reasonable Potential and Wasteload Allocation

### (1) Reasonable Potential and WLA Equations

OAC 252:740-9-4(b) defines the reasonable potential equation for a pollutant's instream concentration  $C_d$  after complete mixing as follows:

$$C_d = \frac{(C_{95} Q^* + C_b)}{(1 + Q^*)}$$

YMS and SS wasteload allocations are calculated in accordance with OAC 252:606-6-83, as follows:

$$WLA_{YMS} = C_{YMS} + \frac{(C_{YMS} - C_b)}{Q^*}$$

$$WLA_{SS} = C_{SS} + \frac{(C_{SS} - C_b)}{Q^*}$$

### (2) Results of Reasonable Potential Screening

Results of the YMS and SS screens for Outfall 001, using  $Q_{e(30)}$  and  $Q_{e(LTA)}$  values in Section III.B.2,  $Q_{u(LTA)}$  and  $Q_{u(STA)}$  values in Section V.C.2.a,  $C_{95}$  values in Section V.C.2.c, and background levels and YMS and SS criteria reflected in Section V.D.3.a, are shown in the following tables. Any required OWQS WLAs are also shown. Where water quality-based permit limitations are required, results are shown in **bold face**.

**Results of YMS and SS Reasonable Potential Screens**  
 (concentrations in mg/L unless otherwise specified)

| Pollutant | Yearly Mean Standard |           |                  |             | Sample Standard |          |                 |            |
|-----------|----------------------|-----------|------------------|-------------|-----------------|----------|-----------------|------------|
|           | $C_d$                | $C_{YMS}$ | $C_d > C_{YMS}?$ | $WLA_{YMS}$ | $C_d$           | $C_{SS}$ | $C_d > C_{SS}?$ | $WLA_{SS}$ |
| Chlorides | 12.1                 | 21        | No               | N/A         | 12.1            | 30       | No              | N/A        |
| Sulfates  | 35.4                 | 59        | No               | N/A         | 35.6            | 83       | No              | N/A        |
| TDS       | 213.2                | 253       | No               | N/A         | 213.7           | 294      | No              | N/A        |

## c. Permit Limitations

Since the discharge did not demonstrate RP to exceed either YMS or SS criteria, no water quality-based limitations are required to protect the Agriculture use.

## 4. Protection of the Primary Body Contact Recreation Uses and the Public and Private Water Supply Use

As described in Section V.B, the Primary Body Contact Recreation (PBCR) and Public and Private Water Supply (PPWS) uses apply to the Neosho River at the physical Outfall.

OAC 252:730-5-16(a) states “Primary Body Contact Recreation involves direct body contact with the water where a possibility of ingestion exists. In these cases, the water 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.” The draft permit will contain a narrative stating the prohibition of these conditions for Outfalls 001 and 002.

**a. E. Coli – Primary Body Contact Recreation**

Per information provided in the permit application (Form 2C), the wastewater discharges at Outfalls 001 and 002 do not include sanitary wastewater. Therefore, it is BPJ of the permit writer that a limitation for bacteria (coliform bacteria, *Escherichia coli*, and *Enterococci*) is not required for the discharges from these outfalls.

**b. Total Coliform – Public and Private Water Supply Use**

In accordance with OAC 252:606-6-78, total coliform criteria for protection of the PPWS use are applied where a discharge is within five miles upstream of a public water supply intake or within five miles of such an intake in a lake.

Per information provided in the permit application, the wastewater discharges at Outfalls 001 and 002 do not include sanitary wastewater. Therefore, it is BPJ of the permit writer that limitations for total coliform shall not be required.

**5. Criteria for Protection of the Aesthetics Use**

**a. General**

Nutrient loading in Oklahoma’s surface waters, particularly of phosphorus, has become an area of concern. OAC 252:730-5-9(d) states, “Nutrients from point source discharges or other sources shall not cause excessive growth of periphyton, phytoplankton, or aquatic macrophyte communities which impairs any existing or designated beneficial use.” This narrative criteria is echoed in the State’s general antidegradation policy as applied to beneficial uses under OAC 252:730-3-2(d), which states, “[N]o water quality degradation which will interfere with the attainment or maintenance of an existing or designated beneficial use shall be allowed.”

**b. Nutrient Limitations and Monitoring Requirements**

The previous permit for this facility contained no nitrate or phosphorus limits or reporting requirements. The application indicated that neither nitrate nor phosphorus is expected to be present in the discharge from Outfall 001. It is the BPJ of the permit writer that effluent monitoring of nutrients is not warranted at this facility. The draft permit will, however, contain a narrative condition for control of solids to protect the Aesthetics use.

**E. MONITORING REQUIREMENTS**

**1. Effluent Monitoring Requirements**

**a. General**

In accordance with OAC 252:606-6-90, where reasonable potential to exceed an applicable criterion is not exhibited and there are fewer than 10 effluent data points to characterize the effluent, further effluent monitoring may be warranted based on use of the TSD method for computing  $C_{95(M)}$  (see

Section V.C.2.c). The TSD procedure accounts for the inherent uncertainty in characterizing an effluent distribution from a small data set.

**b. Applicability**

Water quality-based limitations are required for the following pollutants:

- For Outfalls 001 and 002: None

Effluent data sets comprised of 10 or more data points exist for the following pollutants:

- For Outfalls 001 and 002: None

All other pollutants detectable in the discharge which have state water quality criteria are screened for reasonable potential using  $C_{95(M)}$  in place of  $C_{95}$  to determine which of them may require additional effluent monitoring. The same reasonable potential equations as described in sections V.D.2 and V.D.3 are used.

**c. Results of Reasonable Potential Screening Using  $C_{95(M)}$**

Where  $C_d$ , calculated using  $C_{95(M)}$  in place of  $C_{95}$ , exceeds an applicable criterion for a pollutant, a short term effluent monitoring requirement (sufficient to collect a minimum of ten data points) is established in the permit for that pollutant in accordance with OAC 252:606-6-90. Reasonable potential may then be reassessed with the larger effluent data set and the permit reopened, if necessary, to add appropriate effluent limitations. Results of the reasonable potential screens using  $C_{95(M)}$  are shown in the following tables. Where additional effluent monitoring is required, results are shown in **bold face**.

**(1) Aquatic Toxicity Criteria**

None

**(2) Human Health/Fish Flesh Criteria**

**Results of OWQS Human Health/Fish Flesh RP Screens for Additional Effluent Monitoring Using  $C_{95(M)}$**   
 (concentrations in  $\mu\text{g/L}$  unless otherwise specified)

| Effluent Characteristic | $C_d$ | $C_{FF}$ | $C_d > C_{FF}?$ |
|-------------------------|-------|----------|-----------------|
| Phenols, total          | 0.04  | 860,000  | No              |

**(3) Raw Water Column and Human Health/Fish Flesh and Water Criteria**

**Results of Raw Water Column and Human Health/Fish Flesh and Water RP Screens**  
**for Additional Effluent Monitoring Using  $C_{95(M)}$**   
 (concentrations in  $\mu\text{g/L}$  unless otherwise specified)

| Effluent Characteristic | Raw Water Column Criteria |           |                  | Human Health/Fish Flesh and Water Criteria |           |                  |
|-------------------------|---------------------------|-----------|------------------|--------------------------------------------|-----------|------------------|
|                         | $C_d$                     | $C_{Raw}$ | $C_d > C_{Raw}?$ | $C_d$                                      | $C_{FFW}$ | $C_d > C_{FFW}?$ |
| Phenols, total          | ---                       | ---       | N/A              | 0.04                                       | 10,000    | No               |

#### (4) YMS and SS Agriculture Criteria

##### Results of Agriculture YMS and SS RP Screens for Additional Effluent Monitoring Using $C_{95(M)}$ (concentrations in mg/L unless otherwise specified)

| Effluent Characteristic | YMS Criteria |           |                  | SS Criteria |          |                 |
|-------------------------|--------------|-----------|------------------|-------------|----------|-----------------|
|                         | $C_d$        | $C_{YMS}$ | $C_d > C_{YMS}?$ | $C_d$       | $C_{SS}$ | $C_d > C_{SS}?$ |
| Chlorides               | 12.3         | 21        | No               | 12.4        | 30       | No              |
| Sulfates                | 36.2         | 59        | No               | 36.8        | 83       | No              |
| Total Dissolved Solids  | 215.7        | 253       | No               | 217.4       | 294      | No              |

Based on the results of these reasonable potential screens using  $C_{95(M)}$ , the draft permit will contain one year effluent monitoring requirements for the following pollutants:

For Outfalls 001 and 002: None

## 2. Background Monitoring Requirements

OAC 252:606-6-10 requires that, where available, background levels be included in reasonable potential assessments and in calculating wasteload allocations.

### a. Determination of Background Monitoring Requirements for Aquatic Toxicity, Human Health and Raw Water Column Criteria

Background levels are known for the following pollutants:

- For Outfalls 001 and 002: None

#### (1) Zero Background-Based Effluent Limits Required

Where zero background/water quality-based limits are established in a permit (derived from aquatic toxicity, human health and raw water column criteria only) for a pollutant based on an assumed zero background (or a partial background data set consisting of less than 10 data points), background monitoring for that pollutant is required. There are, however, two exceptions to this requirement, both of which exclude background concentration as a component in the wasteload allocation equation. These exceptions are as follows:

- where permit limits are based on a chronic toxicity criterion in an effluent-dominated discharge situation (i.e., where  $Q^* > 0.3333$ ), and
- where permit limits are based on a human health criterion (either fish flesh or fish flesh and water) and the associated wasteload allocation was set equal to that criterion because the discharge is in close proximity to a PWS intake.

#### (2) Sensitive BT/C (Background Trigger to Criterion) Ratio

Where permit limits for a pollutant are not required and the background is unknown (i.e., assumed zero), background monitoring may be justified for the purpose of reassessing whether there is reasonable potential to exceed an applicable criterion. In such cases, OAC 252:606-6-12 requires that a background trigger to criterion (BT/C) ratio be used to determine whether background monitoring is warranted for a pollutant. Effluent monitoring for the pollutant may or may not also

be required. The trigger background concentration for a given pollutant and water quality criterion is defined in OAC 252:606-1-2 as “the background concentration necessary to trigger reasonable potential for a substance to exceed an applicable criterion given a specified mean effluent concentration.” As described in Appendix P of OAC 252:606, the procedure involves calculating a BT/C ratio for each applicable criterion and comparing each such ratio with an associated threshold value,  $(BT/C)_{max}$ , which is a function of the magnitude of each criterion. Where the value of the BT/C ratio exceeds 1.0, the  $C_{95}$  concentration is less than the criterion and there is no possibility of the pollutant exhibiting reasonable potential to exceed that criterion at any background level less than or equal to the criterion. Where the  $BT/C \leq 1.0$ , the value of the  $C_{95}$  concentration is at least as great as the criterion and, depending on the magnitude of the criterion, background monitoring may be justified. If the  $BT/C \leq (BT/C)_{max}$  for any of the applicable criteria for a pollutant, then background monitoring for that pollutant is required. In order for  $(BT/C)_{max}$  to be appropriately more sensitive to criteria of smaller magnitude, at which a measurable background level of a pollutant may have a relatively greater impact in the determination of reasonable potential, the value of the  $(BT/C)_{max}$  threshold value function increases as the magnitude of a criterion decreases within the range of 1 to 1000  $\mu\text{g/L}$ .

**(a) Calculation of  $(BT/C)_{max}$**

The value of  $(BT/C)_{max}$  for each applicable criterion is an inverse function of the criterion’s magnitude with two break points (or “hinges”), one at 1  $\mu\text{g/L}$  and the other at 1000  $\mu\text{g/L}$ . It is calculated as follows:

$$(BT/C)_{max} = 1.0, \text{ where the criterion} \leq 1.0 \mu\text{g/L.}$$

$$(BT/C)_{max} = \frac{1}{2^{\log(\text{criterion})}}, \text{ where the criterion} > 1.0 \mu\text{g/L and} \leq 1000 \mu\text{g/L.}$$

$$(BT/C)_{max} = 0.125, \text{ where the criterion} > 1000 \mu\text{g/L.}$$

**(b) Calculation of BT/C Ratios**

Background trigger concentrations are first calculated for all applicable criteria and the BT/C concentration is then calculated by dividing the criterion-specific background trigger concentration by the applicable criterion. Values of  $Q_{e(30)}$ ,  $Q^*$ ,  $C_{95}$ ,  $C_A$ ,  $C_C$ ,  $C_{FF}$ ,  $C_{FFW}$ , and  $C_{Raw}$  are as previously defined.

**(i) Acute Toxicity Criteria**

$$BT/C_{Acute} = \frac{\left( \frac{64.63 C_A - Q_{e(30)} C_{95}}{64.63 - Q_{e(30)}} \right)}{C_A}, \text{ where } Q_{e(30)} < 64.63 \text{ MGD.}$$

$BT/C_{Acute}$  is not defined for values of  $Q_{e(30)} \geq 64.63$  MGD.

**(ii) Chronic Toxicity Criteria**

For discharges to streams, the following equations are used for values of  $Q^* < 0.3333$ :

$$BT/C_{\text{Chronic}} = \frac{\left( \frac{(1 + Q^*)C_C - 1.94 Q^* C_{95}}{1 - 0.94 Q^*} \right)}{C_C}, \text{ where } Q^* \leq 0.1823$$

$$BT/C_{\text{Chronic}} = \frac{\left( \frac{(6.17 - 15.51 Q^*)C_C - C_{95}}{5.17 - 15.51 Q^*} \right)}{C_C}, \text{ where } 0.1823 < Q^* < 0.3333$$

$BT/C_{\text{Chronic}}$  is not defined for  $Q^* \geq 0.3333$  (i.e., for effluent-dominated discharge situations), since  $C_b$  drops out as a component of the chronic toxicity reasonable potential equation at that point.

### (iii) Human Health/Fish Flesh Criteria

$$BT/C_{\text{FF}} = \frac{(1 + Q^*)C_{\text{FF}} - Q^* C_{95}}{C_{\text{FF}}}$$

### (iv) Raw Water Column Criteria

$$BT/C_{\text{Raw}} = \frac{(1 + Q^*)C_{\text{Raw}} - Q^* C_{95}}{C_{\text{Raw}}}$$

### (v) Human Health/Fish Flesh and Water Criteria

$$BT/C_{\text{FFW}} = \frac{(1 + Q^*)C_{\text{FFW}} - Q^* C_{95}}{C_{\text{FFW}}}$$

## (3) Summary of Background Monitoring Requirements

### Summary of Background Monitoring Requirements

| Effluent Characteristic | Effluent limit required? | Backgrd assumed zero? <sup>(1)</sup> | BT/C ratio procedure applicable? | BT/C Ratio Assessment |                           |                       |                                      | Backgrd monitoring required? |
|-------------------------|--------------------------|--------------------------------------|----------------------------------|-----------------------|---------------------------|-----------------------|--------------------------------------|------------------------------|
|                         |                          |                                      |                                  | Type Criterion        | BT/C Ratio <sup>(2)</sup> | (BT/C) <sub>max</sub> | BT/C ratio ≤ (BT/C) <sub>max</sub> ? |                              |
| Phenols, total          | No                       | Yes                                  | Yes                              | FFW                   | > 1                       | 0.125                 | No                                   | No                           |
|                         |                          |                                      |                                  | FF                    | > 1                       | 0.125                 | No                                   |                              |

<sup>(1)</sup> In addition to background levels calculated from complete data sets consisting of 10 or more data points, the use of background levels published in USGS, BUMP, USAP or TMDL reports will be considered equivalent to a complete background data set and are therefore considered “known.” In accordance with OAC 252:606-6-11(d), if only a partial background data set is available (less than 10 data points), it is considered the same as “background assumed zero” for purposes of calculating permit limits and determining whether additional background monitoring may be required.

<sup>(2)</sup> BT/C ratios ≤ 1 are shown rounded to 3 decimal places.

**b. Agriculture Criteria**

For chloride, sulfate and TDS, where site-specific background data is not available, the background concentration is calculated from historical YMS and SS data in Appendix F of OAC 252:730 (see Section V.D.3). Thus, use of the BT/C ratio is not appropriate for determining whether background monitoring of these three mineral constituents is warranted.

**F. 303(d) LIST**

**1. Water Quality Assessment and Causes of Impairment**

The 2022 edition of the state's 303(d) list indicates the following:

**Combined Outfalls 001 and 002**

The segment of the Neosho River to which the physical Outfall discharges (WBID 121600010280\_00) is listed as impaired. The listed cause is dissolved oxygen and Benthic Macroinvertebrates.

**2. 303(d) List-Related Permitting Actions**

**a. Permitting Actions**

Where causes of impairment are listed generically, i.e., as a class of pollutants rather than as a specific pollutant or pollutants, EPA Region 6 policy requires that the draft permit include monitoring and reporting requirements for constituent pollutants in each listed class of pollutants as well as a reopener clause to incorporate the results of the approved TMDL as permit conditions. The data collected as a result of this requirement would then be used to support TMDL development. The facility data that has been submitted indicated that it does not discharge any significant levels of DO-demanding substances. Therefore, no 303(d) list-related permitting actions are necessary.

**b. Reopener clause**

A reopener clause is provided in the permit for the purpose of incorporating provisions of the TMDL once completed and approved.

**3. Total Maximum Daily Load (TMDL)**

A TMDL for dissolved oxygen has not been completed for this segment of the Neosho River (WBID 121600010280\_00). A TMDL for this segment was scheduled, but has not been completed.

**G. ANTIDEGRADATION REQUIREMENTS**

As stated in Section V.B, no antidegradation restrictions apply to the segments of the Neosho River. Implementation of the state's antidegradation policy, as described at OAC 252:740, Subchapter 13, requires no further protection beyond the Tier 1 level (maintenance and protection of designated uses) for these receiving waters.

**H. PROTECTION OF ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT**

The segment of the Neosho River to which the Myall, LLC facility discharges is considered by the U.S. Fish and Wildlife Service (USFWS) to be a sensitive area for endangered or threatened species. DEQ has determined since there is a proposed increase in the facility's flow, the draft permit will be sent to the USFWS

for review, per the agreement between the USFWS and DEQ. No adverse impact on endangered or threatened species or their critical habitat is expected.

**I. 316(b) COOLING WATER INTAKE REQUIREMENTS**

This facility does not own or operate a cooling water intake structure, but instead obtains water from the OOWA WTP. Thus, the requirements of Section 316(b) of the CWA do not apply to this facility.

**VI. NON-DISCHARGE REQUIREMENTS**

**A. SURFACE IMPOUNDMENTS**

The facility does not use surface impoundments.

**B. LAND APPLICATION**

The facility does not use land application.

**C. SEPTIC TANK SYSTEM**

Not applicable as stated in the permit application.

**VII. DRAFT PERMIT EFFLUENT LIMITATIONS**

**A. GENERAL**

In accordance with 40 C.F.R. §§ 122.44(a), (d) and (l), pollutant limitations and monitoring requirements are established in the draft permit based on the more stringent of technology-based, water quality-based or previous permit requirements. Both concentration and mass (loading) limits are established unless it is impractical to specify loading limits because of the units in which concentration limits are expressed (e.g., standard units for pH or degrees for temperature). Such loading limitations are calculated for each affected outfall using that outfall's high 30-day average effluent flow,  $Q_{e(30)}$ , over the period of record (see Section III.B.1) according to the following equation:

$$\text{Mass loading limit (lb/day)} = \text{Concentration limit (mg/L)} \times Q_{e(30)} \text{ (MGD)} \times 8.34$$

## B. OUTFALLS 001 AND 002

The following are effluent limitations and monitoring requirements for Outfalls 001 and 002.

### 1. Limited Parameters

#### Limitations and Reporting Requirements (Outfalls 001 and 002)

| Effluent Characteristic <sup>(1)</sup> | Technology Based |            | Water Quality Standards Based |                   | Previous Permit |                   | Draft Permit |                   |
|----------------------------------------|------------------|------------|-------------------------------|-------------------|-----------------|-------------------|--------------|-------------------|
|                                        | Monthly Avg.     | Daily Max. | Monthly Avg.                  | Daily Max.        | Monthly Avg.    | Daily Max.        | Monthly Avg. | Daily Max.        |
| Flow (MGD)                             | ---              | ---        | Report                        | Report            | Report          | Report            | Report       | Report            |
| Free Available Chlorine                | 0.2              | 0.5        | ---                           | ---               | 0.2             | 0.5               | 0.2          | 0.5               |
| Total Residual Oxidants                | ---              | ---        | ---                           | ND <sup>(2)</sup> | ---             | ND <sup>(2)</sup> | ---          | ND <sup>(2)</sup> |
| pH (std. units)                        | 6.0 – 9.0        |            | 6.5 – 9.0                     |                   | 6.5 – 9.0       |                   | 6.5 – 9.0    |                   |

<sup>(1)</sup> Units are mg/L, unless otherwise specified.

<sup>(2)</sup> Not Detectable (ND) is defined as <0.10 mg/L instantaneous maximum for Total Residual Oxidant (TRO) as measured by approved EPA methods found in 40 C.F.R. Part 136 for Total Residual Chlorine (TRC). The <0.10 mg/L water quality-based limit for TRO will satisfy the intent of the narrative technology-based TRC effluent limitation found in 40 C.F.R. § 423.15(j)(2).

### 2. Monitoring Frequencies and Sample Types

#### a. Evaluation for Performance-Based Monitoring Frequency Reductions

Performance-based monitoring frequency reductions are considered in accordance with OAC 252:606-6-91 and Chapter 3 of the CPP. Where Significant Noncompliance (SNC) with permit limitations has been exhibited during the period of record, the facility is ineligible for any performance-based monitoring frequency reduction for the affected pollutant. Additionally, SNC violations for the affected pollutant will result in a monitoring frequency increase in accordance with OAC 252:606 Appendix O – Table I-2. If permittee has experienced no permit violations of any kind for a limited parameter during the permit cycle, then a performance-based monitoring frequency reduction may be granted upon request to DEQ by the permittee in accordance with OAC 252:606 Appendix O – Table I-1. None of the pollutants that are currently being monitored are eligible for evaluation to get a monitoring frequency reduction since the limitations are either not monthly average limitations or the monitoring frequency is already at the minimum of once per year. However, there were no violations of the permit limitations during the previous permit cycle, and thus there is no frequency increase needed for any of the effluent characteristics with limitations.

#### b. Monitoring Requirements and Sample Types

Based on monitoring requirements in OAC 252:606-6-90 through 6-91, and incorporating the results of the evaluation for performance-based monitoring frequency reductions in Section VII.B.2.a, monitoring requirements for Outfalls 001 and 002 beginning at the effective date of the permit are as follows.

**Monitoring Requirements and Sample Types – Outfalls 001 and 002**

| Effluent Characteristic | Previous OPDES Permit |             | Draft Permit          |             |
|-------------------------|-----------------------|-------------|-----------------------|-------------|
|                         | Measurement Frequency | Sample Type | Measurement Frequency | Sample Type |
| Flow                    | Continuous            | Record      | Continuous            | Record      |
| Free Available Chlorine | 1/year                | Grab        | 1/year                | Grab        |
| Total Residual Oxidant  | 1/week                | Grab        | 1/week                | Grab        |
| pH                      | 1/week                | Grab        | 1/week                | Grab        |

**C. COMPLIANCE SCHEDULE**

Not applicable.

**VIII. SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

No changes made.

**IX. ADMINISTRATIVE RECORD**

The following sources were used to prepare the draft permit and constitute part of its administrative record.

**A. APPLICATIONS**

OPDES Permit Application No. OK0100439 (Form 1 and Form 2C), received 12/27/24.

**B. CLEAN WATER ACT CITATIONS**

Sections 101, 301, 303(d), 305(b), 402(a) and 402(o).

**C. 40 C.F.R. CITATIONS**

40 C.F.R. Parts 122, 124, 136, and 423

**D. STATE LAW, STANDARDS, AND RULES AND REGULATIONS**

- Oklahoma Pollutant Discharge Elimination System (OPDES) Act, 27A O.S. § 2-6-201 *et seq.*
- OAC 252:606, Discharge Standards.
- OAC 252:730, Oklahoma Water Quality Standards.
- OAC 252:740, Implementation of Oklahoma's Water Quality Standards.
- Oklahoma Continuing Planning Process (CPP) Document.

**E. MISCELLANEOUS**

- 2022 Integrated Report, Appendix C (303(d) List) and Appendix E (completed TMDL's).
- Permit file, OPDES Permit No. OK0100439.
- Integrated Compliance Information System (ICIS) data retrieval, June 2020 through January 2025.
- USGS StreamStats® application.

## **X. REVIEW BY OTHER AGENCIES AND FINAL DETERMINATION**

A public notice that includes a link to the DEQ webpage where the draft permit may be viewed will be sent to various federal and state agencies upon posting the draft permit on the DEQ webpage. If comments are received from these agencies or other state or federal agencies with jurisdiction over fish, wildlife, or public health, the permit may be denied or additional conditions may be included in accordance with regulations promulgated at 40 C.F.R. § 124.59.

The public notice describes the procedures for the formulation of final determinations.