STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law (Chapter 644 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

MO-0131270
Randy & Robyn Combs, Dennis & Alisa Klein, Mike & Janet Hampton, and
Keith & Cathy Shurman
29564, 29566, and 29569 Inspiration Point, Rocky Mount, MO 65072
Same as above
Same as above
Inspiration Point Wastewater Treatment Facility
29569 Inspiration Point, Rocky Mount, MO 65072
Sec. 06, T40N, R16W, Morgan County
X= 522968, Y= 4234040
Lake of the Ozarks (L2)
Lake of the Ozarks (L2) (7205) 303(d) List
(10290109-0405)

authorizes activities pursuant to the terms and conditions of this permit in accordance with the Missouri Clean Water Law and/or the National Pollutant Discharge Elimination System; it does not apply to other regulated activities.

FACILITY DESCRIPTION

<u>Outfall #001</u> – Non-POTW Septic tanks / recirculating sand filter / chlorination / dechlorination / sludge disposal by contract hauler Design population equivalent is 41. Design flow is 3,050 gallons per day. Design sludge production is 0.27 dry tons/year.

January 1, 2024 Effective Date

John Hoke, Chief, Water Pollution Control Branch

December 31, 2028 Expiration Date OUTFALL #001

TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. The final effluent limitations in **Table A-1** shall become effective on **January 1**, 2024 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)UNITSDAILY MAXIMUMWEEKLY AVERAGEMONTHLY AVERAGEMEASUREMENT FREQUENCYSAMPLE TYPEeDMR Limit Set: Q**once/quarter****24 hr. estimateFlowMGD*3020once/quarter****grabBiochemical Oxygen Demandsmg/L3020once/quarter****grabTotal Suspended Solidsmg/L3020once/quarter****grabE. coli (Note 1)#/100mL630126once/quarter****grabAmmonia as Nmg/L12.112.1once/quarter****grabTotal Residual Chlorine (Note 2)µg/L<130once/quarter****grabEFFLUENT PARAMETER(S)UNITSMINIMUMMAXIMUMMEASUREMENT FREQUENCYSAMPLE TYPEpH = Units**SUL609.0once/quarter****grab		INTE	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
eDMR Limit Set: QFlowMGD**once/quarter****24 hr. estimateBiochemical Oxygen Demand5mg/L3020once/quarter****grabTotal Suspended Solidsmg/L3020once/quarter****grabE. coli (Note 1)#/100mL630126once/quarter****grabAmmonia as Nmg/L12.112.1once/quarter****grabTotal Residual Chlorine (Note 2)μg/L<130<<once/quarter****grabEFFLUENT PARAMETER(S)UNITSMINIMUMMAXIMUMMEASUREMENT FREQUENCYSAMPLE TYPE	EFFLUENT PAKAMETEK(S)	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
FlowMGD**once/quarter****24 hr. estimateBiochemical Oxygen Demand5mg/L3020once/quarter****grabTotal Suspended Solidsmg/L3020once/quarter****grab <i>E. coli</i> (Note 1)#/100mL630126once/quarter****grabAmmonia as Nmg/L12.112.1once/quarter****grabTotal Residual Chlorine (Note 2)μg/L<130<130once/quarter****grabEFFLUENT PARAMETER(S)UNITSMINIMUMMAXIMUMMEASUREMENT FREQUENCYSAMPLE TYPEnH - Units**SU6.09.0once/quarter****grab	eDMR Limit Set: Q	_			_		
Biochemical Oxygen Demandsmg/L3020once/quarter****grabTotal Suspended Solidsmg/L3020once/quarter****grabE. coli (Note 1)#/100mL630126once/quarter****grabAmmonia as Nmg/L12.112.1once/quarter****grabTotal Residual Chlorine (Note 2)µg/L<130	Flow	MGD	*		*	once/quarter****	24 hr. estimate
Total Suspended Solidsmg/L3020once/quarter****grabE. coli (Note 1)#/100mL630126once/quarter****grabAmmonia as Nmg/L12.112.1once/quarter****grabTotal Residual Chlorine (Note 2)µg/L<130	Biochemical Oxygen Demand ₅	mg/L		30	20	once/quarter****	grab
E. coli (Note 1)#/100mL630126once/quarter***grabAmmonia as Nmg/L12.112.1once/quarter***grabTotal Residual Chlorine (Note 2) μ g/L<130	Total Suspended Solids	mg/L		30	20	once/quarter****	grab
Ammonia as Nmg/L12.1once/quarter***grabTotal Residual Chlorine (Note 2)µg/L<130	E. coli (Note 1)	#/100mL	630		126	once/quarter****	grab
Total Residual Chlorine (Note 2) µg/L < 130 < 130 once/quarter**** grab EFFLUENT PARAMETER(S) UNITS MINIMUM MAXIMUM MEASUREMENT FREQUENCY SAMPLE TYPE pH = Units** SU 6.0 9.0 once/quarter**** grab	Ammonia as N	mg/L	12.1		12.1	once/quarter****	grab
EFFLUENT PARAMETER(S) UNITS MINIMUM MAXIMUM MEASUREMENT FREQUENCY SAMPLE TYPE pH - Units** SU 6.0 9.0 once/guarter**** grab	Total Residual Chlorine (Note 2)	μg/L	< 130		< 130	once/quarter****	grab
pH_Units** SU 60 90 once/quarter**** grab	EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
	pH – Units**	SU	6.0		9.0	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE <u>April 28, 2024</u>.

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged.

*** See table below for quarterly sampling.

Quarterly Minimum Sampling Requirements						
Quarter	Months	<i>E. coli</i> and Total Residual Chlorine (TRC)	All Other Parameters	Report is Due		
First	January, February, March	Not required to sample.	Sample at least once during any month of the quarter	April 28 th		
Second	April, May, June	Sample at least once during any month of the quarter	Sample at least once during any month of the quarter	July 28 th		
Third	July, August, September	Sample at least once during any month of the quarter	Sample at least once during any month of the quarter	October 28 th		
Fourth	October	Sample once during <u>October</u>	Sample at least once during	Lanuary 28th		
rourth	November & December	Not required to sample.	any month of the quarter	January 28		

- **Note 1** Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean.
- Note 2 This permit contains a Total Residual Chlorine (TRC) limit.
 - (a) The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be **19 \mug/L** (daily maximum limit) and **9 \mug/L** (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 μ g/L when using the DPD Colorimetric Method #4500 CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. Measured values greater than or equal to the minimum quantification level of 130 μ g/L will be considered to be in compliance with the permit limitation.

- (b) Disinfection is required during the recreational season from April 1 through October 31. <u>Do not chlorinate</u> during the non-recreational months and an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary.
- (c) Do not chemically de-chlorinate if it is not needed to meet the limits in your permit.
- (d) If no chlorine was used in a given sampling period, an actual analysis for TRC is not necessary. Simply report as "AG Conditional Monitoring Not Required This Period" for TRC in the eDMR system.

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached <u>Parts I and III</u> standard conditions dated <u>August 1, 2014 and August 1, 2019</u>, and hereby incorporated as though fully set forth herein. Annual reports required per Standard Conditions Part III Section K shall be submitted online to the Department via the Department's eDMR system as an attachment. This supersedes Standard Conditions Part III Section K #4. EPA reports shall continue to be submitted online via the Central Data Exchange system.

C. SPECIAL CONDITIONS

- <u>Electronic Discharge Monitoring Report (eDMR) Submission System</u>. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as "WET Test Chronic Outfall 002 Jan 2023," or "Outfall 004 Daily Data Mar 2025."
 - (a) eDMR Registration Requirements. The permittee must register with the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at <u>https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem</u>. Information about the eDMR system can be found at <u>https://dnr.mo.gov/water/business-industry-other-entities/reporting/electronic-discharge-monitoring-reporting-system-edmr</u>. The first user shall register as an Organization Official and the association to the facility must be approved by the Department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit unless a waiver is granted by the Department. See paragraph (c) below.
 - (b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <u>https://apps5.mo.gov/mogems/welcome.action</u>. If you experience difficulties with using the eDMR system you may contact <u>edmr@dnr.mo.gov</u> or call 855-789-3889 or 573-526-2082 for assistance.
 - (c) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <u>https://dnr.mo.gov/document-search/electronic-discharge-</u> <u>monitoring-report-waiver-request-form-mo-780-2692</u>. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days.
- 2. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
 - (a) To comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
- 3. All outfalls must be clearly marked in the field.
- 4. Report as no-discharge when a discharge does not occur during the report period.
- 5. Reporting of Non-Detects:
 - (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
 - (b) See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, No. 4 regarding proper testing and method minimum levels used for sample analysis.

- (c) The permittee shall not report a sample result as "Non-Detect" without also reporting the method minimum level of the test. Reporting as "Non Detect" without also including the method minimum level, will be considered failure to report, which is a violation of this permit.
- (d) The permittee shall provide the "Non-Detect" sample result using the less than symbol and the method minimum level (e.g., $<50 \ \mu g/L$, if the method minimum level for the parameter is $50 \ \mu g/L$).
- (e) Where the permit contains a Department determined Minimum Quantification Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
- (f) For the daily maximum, the facility shall report the highest value. If the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method minimum level.
- (g) For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.
- (h) For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.
- (i) When *E. coli* is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means.</p>
- (j) See the Fact Sheet Appendix Non-Detect Example Calculations for further guidance.
- 6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
- 7. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the Central Field Operations Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: <u>https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem</u> or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.
- 8. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
- 9. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.
- 10. An all-weather access road to the treatment facility shall be maintained.
- 11. The outfall sewer shall be protected and maintained against the effects of floodwater, ice, or other hazards as to reasonably ensure its structural stability, freedom from stoppage, and that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.
- 12. The media in the filter beds shall be properly maintained to prevent surface pooling, vegetative growth, and accumulation of leaf litter.

D. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission U.S. Post Office Building, Third Floor 131 West High Street, P.O. Box 1557 Jefferson City, MO 65102-1557 Phone: 573-751-2422 Fax: 573-751-5018 Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES FACT SHEET FOR THE PURPOSE OF RENEWAL OF MO-0131270 INSPIRATION POINT WWTF

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)2.], a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

Part I – Facility Information

Application Date:	02/01/2023
Expiration Date:	06/30/2023

Facility Type and Description: Non - POTW - Septic tanks / recirculating sand filter / chlorination / dechlorination / sludge disposal by contract hauler

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.005	Secondary	Domestic

Comments:

This permit transferred ownership and continuing authority to Randy & Robyn Combs, Dennis & Alisa Klein, Mike & Janet Hampton, and Keith & Cathy Shurman. 10 CSR 20-6.010(2)(B)(4) allows a "group of persons contractually obligated to collectively act as a wastewater collection and treatment service" to be the Continuing Authority. The homeowners connected to the system have a private contract that defines their shared ownership and responsibility for the facility. Changes in this permit for Outfall #001 include the revision of Ammonia parameters based on new ecoregional data. See Part II of the Fact Sheet for further information regarding the addition, revision, and removal of influent, instream, and effluent parameters. Special conditions were updated to include the revision of reporting of Non-detects and the Electronic Discharge Monitoring Report (eDMR) Submission System. Special conditions were further updated with the removal of the requirement to cease discharge and connect to a facility with an area-wide management plan due to the facility not currently being located within the jurisdiction of a higher continuing authority and the removal of special conditions requiring gates and warning signs, but the facility must remain sufficiently secured to restrict access per special condition 8.

Part II – Effluent Limitations and Monitoring Requirements

OUTFALL #001 - MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

OUTFALL #001 - RECEIVING STREAM INFORMATION

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Lake of the Ozarks	L2	7205	WWH, IND, IRR, LWP, SCR, WBC-A, HHP	10290109-0405	Direct Discharge

*As per 10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AHP = Aquatic Habitat Protection - To ensure the protection and propagation of fish, shellfish, and wildlife. AHP is further subcategorized as:

WWH = Warm Water Habitat;

CLH = Cool Water Habitat;

CDH= Cold Water Habitat;

EAH = Ephemeral Aquatic Habitat;

MAH = Modified Aquatic Habitat;

LAH = Limited Aquatic Habitat.

This permit uses Aquatic Life Protection effluent limitations in 10 CSR 20-7.031 Table A for all aquatic habitat designations unless otherwise specified.

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged. WBC is further subcategorized as:

WBC-A = Whole body contact recreation that supports swimming uses and has public access;

WBC-B = Whole body contact recreation that supports swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption;

LWP = Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife;

DWS = Drinking water supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation;

WHP = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses;

WHC = Hydrologic cycle maintenance.

10 CSR 20-7.031(6):

 $\mathbf{GRW} = \mathbf{Groundwater}$

MIXING CONSIDERATIONS

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(IV)(b)].

Mixing Zone:

Mixing Zone (MZ) Parameters: According to the USGS 1:24,000K Quadrangle, the lake cove width near the facility outfall location is approximately 280 feet (ft.). Using "normal" water levels of 280 ft. wide and one-quarter of this width equals 70 ft. Therefore, because 100 feet is more than 70 ft., MZ = 70 feet [10 CSR 20-7.031(5)(A)5.B.(IV)(a)].

Mixing Zone Volume: The flow volume approximates a triangular prism because of the slope of the lake bottom, where the formula is Volume = $L^*W^*(D^*0.5)$. Assuming that the width will be either side of the discharge (MZ) length (100 feet) to form the plume effect, the box dimensions are length (L) = 100 ft., width (W) = 70 ft., and depth (D) = 20 ft. Depth was obtained using mixing zone length projected 100 ft. from shoreline to the intersecting contour on 7.5' USGS topographic map.

Volume = $L^*W^*(D^*(0.5)) = (100')^*(70')^*(20'^*(0.5)) = 70,000 \text{ ft}^3$.

The flow volume of 70,000 ft³ is assumed as the daily mixing zone. Therefore; $30Q10 = (70,000 \text{ ft}^3/\text{day})*(1 \text{ day}/86,400 \text{ sec}) = 0.8102 \text{ ft}^3/\text{sec}.$

Receiving Water Body's Water Quality

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

- This facility discharges to a 303(d) listed lake. Lake of the Ozarks is listed on the 2022 Missouri 303(d) List for Chlorophyll-a (W).
 - It is unknown at this time if the facility is a source of the above listed pollutant or considered to contribute to the impairment 0 of Lake of the Ozarks. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.

CHANGES TO EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type *
Ammonia as N	mg/L	2, 3	12.1	12.1	12.1/4.6	1/quarter	quarterly	G

* - G = Grab

Basis for Limitations Codes:

- State or Federal Regulation/Law 1
- 2. Water Quality Standard (includes RPA) 3.
 - Water Quality Based Effluent Limits
- 4. Antidegradation Review
- Antidegradation Policy 5 6. Water Quality Model
- 7. Best Professional Judgment

8.

TMDL or Permit in lieu of TMDL

- 9 WET Test Policy
- 10. Multiple Discharger Variance
- 11. Nutrient Criteria Implementation Plan

- **OUTFALL #001 DERIVATION AND DISCUSSION OF LIMITS:**
- Flow. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- Biochemical Oxygen Demand (BOD₅). Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. Effluent limits were established in accordance with 10 CSR 20-7.015(3) for discharges to Lakes or Reservoirs.
- Total Suspended Solids (TSS). Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. Effluent limits were established in accordance with 10 CSR 20-7.015(3) for discharges to Lakes or Reservoirs.
- Escherichia coli (E. coli). Monthly average of 126 per 100 mL as a geometric mean and Daily Maximum of 630 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five E. coli samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100 mL.

<u>Total Ammonia Nitrogen</u>. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No Zone of Initial Dilution allowed [10 CSR 20-7.031(5)(A)4.B.(IV)(b)].

The Department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA's Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The Department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average. The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation:

 $Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)}$

.

Where C = downstream concentration Cs = upstream concentration Qs = upstream flow Ce = effluent concentration Qe = effluent flow

In the event that mixing considerations derive an AML less stringent than the MDL, the AML and MDL will be equal and based on the MDL.

Quarter	Temp (°C)*	pH (SU)*	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
1 st	9.0	7.8	3.1	12.1
2^{nd}	25.0	7.8	1.6	12.1
3 rd	28.0	7.8	1.3	12.1
4 th	18.0	7.8	2.5	12.1

* Ecoregion Data (Ozark Highlands)

<u>1st Quarter</u> Chronic WLA: / 0.005	Ce = ((0.005 + 0.8102)3.1 - (0.8102 * 0.01)) Ce = 536.5	<u>2nd Quarter</u> Chronic WLA: / 0.005	Ce = ((0.005 + 0.8102)1.6 - (0.8102 * 0.01)) Ce = 274.8
Acute WLA:	Ce = ((0.005 + 0)12.1 - (0 * 0.01)) / 0.005 Ce = 12.1	Acute WLA:	Ce = ((0.005 + 0)12.1 - (0 * 0.01)) / 0.005 Ce = 12.1
AML = WLAc = MDL = WLAa =	12.1 mg/L 12.1 mg/L	AML = WLAc = MDL = WLAa =	12.1 mg/L 12.1 mg/L
<u>3rd</u> <u>Quarter</u> Chronic WLA: 0.005	Ce = ((0.005 + 0.8102)1.3 - (0.8102 * 0.01) / Ce = 227.2	<u>4th Quarter</u> Chronic WLA: 0.005	Ce = ((0.005 + 0.8102)2.5 - (0.8102 * 0.01)) Ce = 429.4
<u>3rd Quarter</u> Chronic WLA: 0.005 Acute WLA:	Ce = ((0.005 + 0.8102)1.3 - (0.8102 * 0.01) / Ce = 227.2 $Ce = ((0.005 + 0)12.1 - (0 * 0.01)) / 0.005$ $Ce = 12.1$	<u>4th Quarter</u> Chronic WLA: 0.005 Acute WLA:	Ce = ((0.005 + 0.8102)2.5 - (0.8102 * 0.01)) / Ce = 429.4 $Ce = ((0.005 + 0)12.1 - (0 * 0.01)) / 0.005$ $Ce = 12.1$

Total Residual Chlorine (TRC). Warm-water Protection of Aquatic Life CCC = $11 \mu g/L$, CMC = $19 \mu g/L$ [10 CSR 20-7.031, Table A]. Background TRC = $0.0 \mu g/L$.

Chronic WLA: $C_e = ((0.005 + 0.203)11 - (0.203 * 0.0))/0.005 = 483.1 \ \mu g/L$

Acute WLA: $C_e = ((0.005 + 0.0)19 - (0.0 * 0.0))/0.005 = 19 \ \mu g/L$

 $\begin{array}{ll} LTA_c = 483.1 \ (0.527) = 254.8 \ \mu g/L & [CV = 0.6, \ 99^{th} \ Percentile] \\ LTA_a = 19 \ (0.321) = 6.1 \ \mu g/L & [CV = 0.6, \ 99^{th} \ Percentile] \end{array}$

Use most protective number of LTA_c or LTA_a.

$MDL = 6.1 (3.11) = 19 \ \mu g/L$	$[CV = 0.6, 99^{th} Percentile]$
$AML = 6.1 (1.55) = 9 \ \mu g/L$	$[CV = 0.6, 95^{th} Percentile, n = 4]$

The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be 19 μ g/L (daily maximum limit) and 9 μ g/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 μ g/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 μ g/L will be considered violations of the permit and values less than the minimum quantification level of 130 μ g/L will be considered to be in compliance with the permit limitation.

• <u>pH</u>. 6.0-9.0 SU. The permit writer has made a reasonable potential determination based the assimilative capacity of the receiving stream that the discharge will not cause or contribute to the excursion of the water quality standard for pH instream. Therefore, effluent limitations as required by 10 CSR 20-7.015 are substituted for the pH water quality criteria of 6.5-9.0 SU.

<u>Sampling Frequency Justification</u>: The Department has determined that previously established sampling and reporting frequency is sufficient to characterize the facility's effluent and be protective of water quality. Sampling for *E. coli* is set at quarterly per 10 CSR 20-7.015(9)(D)7.C.

Sampling Type Justification: As per 10 CSR 20-7.015, BOD₅ and TSS collected for media filters may be grab samples. Grab samples must be collected for pH, *E. coli*, and TRC in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

OUTFALL #001 - GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule or regulation promulgated by the commission.

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on February 9, 2022, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with the secondary treatment technology based effluent limits established in 40 CFR 133 and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

- (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.
- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.
- (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.
- (E) <u>Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state</u>. Please see (D) above as justification is the same.
- (F) <u>There shall be no significant human health hazard from incidental contact with the water</u>. Please see (D) above as justification is the same.
- (G) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.
- (H) <u>Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community</u>. Please see (A) above as justification is the same.
- (I) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

Part III – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

✓ The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)].

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(o); 40 CFR Part 122.44(1)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
 - Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
 - <u>Ammonia as N</u>. Effluent limitations were re-calculated for Ammonia using new DMR data and new ecoregional pH and Temperature data. The Department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA's Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The Department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average. The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation. The newly established limitations are still protective of water quality.

- The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
 - The previous permit indicated "There Shall Be No Discharge of Floating Solids or Visible Foam in Other Than Trace Amounts" under each table. The statement was not evaluated against actual site conditions therefore, this general criteria was re-assessed. It was determined that this facility does not discharge solids or foam in amounts which would indicate reasonable potential, therefore the statement was removed. Each general criteria was assessed for this facility.

ANTIDEGRADATION:

✓ No degradation was proposed in this permit action and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(2)(C)], an applicant may utilize a lower preference continuing authority when a higher level authority is available by submitting information as part of the application to the Department for review and approval, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

✓ Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler. If removal and disposal (landfill, land apply, haul to another permitted treatment facility, etc.) of sludge/biosolids is needed and that method is not listed in the current permit, the permittee must modify the operating permit to add any biosolids/sludge disposal method to the facility description of the operating permit. For time sensitive situations, the permittee may contact the Department to see about approval for a one-time removal and disposal of sludge/biosolids that are not identified in the facility description of the operating permit.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Facility Performance History:

- The facility is not currently under Water Protection Program enforcement action. This facility was last inspected on February 9, 2022. The inspection showed the following unsatisfactory features:
 - o Failure to identify the actual owner of the treatment facility
 - o Failure to apply for renewal at least 180 calendar days before the expiration date
 - Failure to pay fees and late penalties
 - Failure to submit an Annual Sludge Report and DMRs
 - Failure to place warning signs around the facility and mark the outfall in the field

CONTINUING AUTHORITY:

Each application for an operating permit shall identify the person, as that term is defined in section 644.016(15), RSMo, that is the owner of, operator of, or area-wide management authority for a water contaminant source, point source, wastewater treatment facility, or sewer collection system. This person shall be designated as the continuing authority and shall sign the application. By doing so, the person designated as the continuing authority acknowledges responsibility for compliance with all permit conditions.

10 CSR 20-6.010(2) establishes preferential levels for continuing authorities: Levels 1 through 5 (with Level 1 as the highest level), and generally requires permits to be issued to a higher preference continuing authority if available. A Level 3, 4, or 5 applicant may constitute a continuing authority by showing that Level 1 and Level 2 authorities are not available; do not have jurisdiction; are forbidden by state statute or local ordinance from providing service to the person; or that the Level 3, 4, or 5 applicant has met one of the requirements listed in paragraphs (2)(C)1.–7. of 10 CSR 20-6.010(2). The seven options in paragraphs (2)(C)1.–7. for a lower-level authority to demonstrate that it is the valid continuing authority are:

- 1. A waiver from the existing higher authority declining the offer to accept management of the additional wastewater or stormwater;
- 2. A written statement or a demonstration of non-response from the higher authority;
- 3. A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
- 4. A proposed connection or adoption charge by the higher authority that would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
- 5. A proposed service fee on the users of the system by the higher authority that is above what is affordable for existing homeowners in that area;
- 6. Terms for connection or adoption by the higher authority that would require more than two (2) years to achieve full sewer service; or
- 7. A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area.

Permit applicants that are Levels 3, 4, and 5 must, as part of their application, identify their method of compliance with this regulation. The following are the methods to comply.

- No higher level authorities are available to the facility;
- No higher level authorities have jurisdiction;
- Higher level authorities are forbidden by state statute or local ordinance from providing service to the person;
- The existing higher level authority is available to the facility, however the facility has proposed the use of a lower preference continuing authority and has submitted one of the following as part of their application provided it does not conflict with any area-wide management plan approved under section 208 of the Clean Water Act or by the Missouri Clean Water Commission. (See Fact Sheet Appendix Continuing Authority for more information on these options):
 - A waiver from the existing higher authority;
 - A written statement or a demonstration of non-response from the higher authority;
 - A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
 - Documentation that the proposed connection or adoption charge by the higher authority would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
 - Documentation that the proposed service fee on the users of the system by the higher authority is above what is affordable for existing homeowners in that area;
 - Documentation that the terms for connection or adoption by the higher authority would require more than two (2) years to achieve full sewer service;
 - A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area;
- ✓ The continuing authority listed on the application is a group of persons contractually obligated to share responsibility of the facility, and therefore a Level 4 Authority. There is no approved Clean Water Act Section 208 plan in Morgan County. The applicant has shown that:
 - A higher level authority is not available to the facility;

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online. In an effort to aid facilities in the reporting of applicable information electronically, the Department has created several new forms including operational control monitoring forms and an I&I location and reduction form. These forms are optional and can be provided upon request to the Department.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <u>https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692</u>. Each facility must make a request. If a single entity owns or operates more than one facility, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

✓ The permittee/facility is currently using the eDMR data reporting system.

NUMERIC LAKE NUTRIENT CRITERIA:

✓ This facility discharges into a lake watershed (Lake of the Ozarks) where numeric lake nutrient criteria are applicable; however, regulations established in 10 CSR 20-7.015 as well as the Department's lake nutrient criteria implementation plan do not require nutrient monitoring for facilities with design flows less than or equal to 0.1 MGD. Should the lake within this watershed be identified as impaired due to nutrient loading, the Department will conduct watershed modeling to determine if this facility has reasonable potential to cause or contribute to the impairment. Consequently, monitoring or effluent limitations may be established at a later date based on the modeling results. For more information, please see the Department's Nutrient Criteria Implementation Plan at: https://dnr.mo.gov/document-search/nutrient-criteria-implementation-plan-july-27-2018.

OPERATOR CERTIFICATION REQUIREMENTS:

✓ This facility is not required to have a certified operator as it doesn't have a PE greater than 200 and is not owned or operated by or for a municipality, public sewer district, county, public water supply district, private sewer company regulated by the PSC, state or federal agency.

OPERATIONAL CONTROL TESTING:

 \checkmark As per [10 CSR 20-9.010(4))], the facility is not required to conduct operational monitoring.

PRETREATMENT PROGRAM:

✓ The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL (RP):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] and State Regulation [10 CSR 20-7.015(9)(A)2] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

A reasonable potential analysis (RPA) is a numeric RP decision calculated using effluent data provided by the facility for parameters that have a numeric Water Quality Standard (WQS).

Reasonable potential determinations (RPD) are based on physical conditions of the site as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD using best professional judgement. An RPD consists of evaluating visual observations for compliance with narrative criteria, non-numeric information, or small amounts of numerical data (such as 3 data points supplied in the application). Narrative criteria with RP typically translate to a numeric WQS, so a parameter's establishment being based on narrative criteria does not necessarily make the decision an RPD vs RP—how the data is collected does, however. When insufficient data is received to make a determination on RP based on numeric effluent data, the RPD decisions are based on best professional judgment considering the sources of influent wastewater, type of treatment, and historical overall management of the site.

- ✓ Ammonia is a constituent of domestic wastewater. A RPD was made, that a potential to violate water quality standards exists. Please see Derivation and Discussion of Limits.
- ✓ A RPD was made for Total Residual Chlorine, that a potential to violate water quality standards exists. Please see Derivation and Discussion of Limits.

REMOVAL EFFICIENCY:

✓ Influent monitoring is not being required to determine percent removal.

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

✓ This permit does not contain an SOC.

VARIANCE:

✓ This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(86)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

✓ Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

 $\begin{array}{ll} \mbox{Where} & C = \mbox{downstream concentration} & Ce = \mbox{effluent concentration} \\ & Cs = \mbox{upstream concentration} & Qe = \mbox{effluent flow} \\ & Qs = \mbox{upstream flow} \end{array}$

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

✓ A WLA study was either not submitted or determined not applicable by Department staff.

WHOLE EFFLUENT TOXICITY (WET) TEST:

 \checkmark At this time, the permittee is not required to conduct WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

✓ This facility does not anticipate bypassing.

Part IV - Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a "finding of affordability" on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

✓ The Department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publicly-owned treatment works.

Part V – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

WATER QUALITY STANDARD REVISION:

This operating permit does not contain requirements for a water quality standard that has changed twenty-five percent or more since the previous operating permit.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

✓ The Public Notice period for this operating permit started October 20, 2023 and ended November 20, 2023. No comments were received.

DATE OF FACT SHEET: OCTOBER 2, 2023

COMPLETED BY:

ERIN STEVENS MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT (573) 522-1675 Erin.stevens@dnr.mo.gov

<u>Appendices</u> APPENDIX – Non-Detect Example Calculations:

Example: Permittee has four samples for Pollutant X which has a method minimum level of 5 mg/L and is to report a Daily Maximum and Monthly Average.

Week 1 = 11.4 mg/L Week 2 = Non-Detect or <5.0 mg/L Week 3 = 7.1 mg/L Week 4 = Non-Detect or <5.0 mg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

 $11.4 + 0 + 7.1 + 0 = 18.5 \div 4$ (number of samples) = 4.63 mg/L.

The Permittee reports a Monthly Average of 4.63 mg/L and a Daily maximum of 11.4 mg/L (Note the < symbol was dropped in the answers).

Example: Permittee has five samples for Pollutant Y that has a method minimum level of $9 \mu g/L$ and is to report a Daily Maximum and Monthly Average.

Day 1 = Non-Detect or $<9.0 \ \mu g/L$ Day 2 = Non-Detect or $<9.0 \ \mu g/L$ Day 3 = Non-Detect or $<9.0 \ \mu g/L$ Day 4 = Non-Detect or $<9.0 \ \mu g/L$ Day 5 = Non-Detect or $<9.0 \ \mu g/L$

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

 $(9 + 9 + 9 + 9 + 9) \div 5$ (number of samples) = $<9 \mu g/L$.

The Permittee reports a Monthly Average of $<9.0 \mu g/L$ (retain the 'less than' symbol) and a Daily Maximum of $<9.0 \mu g/L$.

Example: Permittee has four samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 μ g/L and the remaining two tests were conducted using a different method that has a method minimum level of <6 μ g/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or $<4.0 \ \mu g/L$ Week 2 = Non-Detect or $<4.0 \ \mu g/L$ Week 3 = Non-Detect or $<6.0 \ \mu g/L$ Week 4 = Non-Detect or $<6.0 \ \mu g/L$

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

 $(4+4+6+6) \div 4$ (number of samples) = $<5 \mu g/L$. (Monthly)

The facility reports a Monthly Average of $<5.0 \mu g/L$ and a Weekly Average of $<6.0 \mu g/L$.

APPENDIX – Non-Detect Example Calculations (Continued):

Example: Permittee has five samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 μ g/L and the remaining three tests were conducted using a different method that has a method minimum level of <6 μ g/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or $<4.0 \ \mu g/L$ Week 2 = Non-Detect or $<4.0 \ \mu g/L$ Week 2 = Non-Detect or $<6.0 \ \mu g/L$ Week 3 = Non-Detect or $<6.0 \ \mu g/L$ Week 4 = Non-Detect or $<6.0 \ \mu g/L$

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

 $(4 + 4 + 6 + 6 + 6) \div 5$ (number of samples) = $<5.2 \ \mu g/L$. (Monthly) $(4 + 6) \div 2$ (number of samples) = $<5 \ \mu g/L$. (Week 2)

The facility reports a Monthly Average of <5.2 µg/L and a Weekly Average of <6.0 µg/L (report highest Weekly Average value)

Example: Permittee has four samples for Pollutant Z where the tests were conducted using a method with a method minimum level of 10 μ g/L and is to report a Monthly Average and Daily Maximum. The permit lists that Pollutant Z has a Department determined Minimum Quantification Level (ML) of 130 μ g/L.

Week 1 = 12 μ g/L Week 2 = 52 μ g/L Week 3 = Non-Detect or <10 μ g/L Week 4 = 133 μ g/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

For this example, $(12 + 52 + 0 + 133) \div 4$ (number of samples) = $197 \div 4 = 49.3 \mu g/L$.

The facility reports a Monthly Average of 49.3 µg/L and a Daily Maximum of 133 µg/L.

Example: Permittee has five samples for *E. coli* which has a method minimum level of 1 #/100mL and is to report a Weekly Average (seven (7) day geometric mean) and a Monthly Average (thirty (30) day geometric mean).

Week 1 = 102 #/100mL Week 2 (Monday) = 400 #/100mL Week 2 (Friday) = Non-Detect or <1 #/100mL Week 3 = 15 #/100mL Week 4 = Non-Detect or <1 #/100mL

For this example, use subpart (i) - When E. coli is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means. The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected.

The Monthly Average (30 day Geometric Mean) = 5th root of (102)(400)(0.5)(15)(0.5) = 5th root of 153,000 = 10.9 #/100mL. The 7 day Geometric Mean = 2nd root of (400)(0.5) = 2nd root of 200 = 14.1 #/100mL. (Week 2)

The Permittee reports a Monthly Average (30 day Geometric Mean) of 10.9 #/100mL and a Weekly Average (7 day geometric mean) of 102 #/100mL (report highest Weekly Average value)