

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 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-GD00000

Owner:
Address:

Continuing Authority:
Address:

Facility Name:
Facility Address:

Legal Description:
UTM Coordinates:

Receiving Stream:
First Classified Stream and ID:
USGS Basin and Sub-watershed No.:

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

All Outfalls

- Non-Publicly Owned Treatment Works discharging $\leq 50,000$ gallons per day. See Applicability section for further details.
- The use or operation of this facility shall be in accordance with Operator Certification requirements [10 CSR 20-9.030].

This permit authorizes only domestic wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with RSMo Section 621.250, 640.013, and 644.051.6; 10 CSR 20-1.020 and 20-6.020 of the Law.

July 1, 2014
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

June 30, 2019
Expiration Date

John Madras, Director, Water Protection Program

APPLICABILITY

1. This Missouri State Operating Permit (permit) authorizes the operation of and discharge from non-Publicly Owned Treatment Works (non-POTW) with no industrial contributions.
2. The following facilities are excluded from this permit:
 - (a) Publicly Owned Treatment Works (POTW): state, municipal, federal, etc., as defined at 10 CSR 20-2.010(59);
 - (b) Facilities discharging domestic wastewater with industrial wastewater contribution;
 - (c) Facilities discharging greater than 50,000 gallons per day (gpd) of domestic wastewater;
 - (d) Non-POTWs with design flows of $\leq 50,000$ gpd which land apply wastewater (Require MO-G823 or a site-specific permit);
 - (e) Facilities employing direct reuse of treated wastewater; and
 - (f) Facilities that have undergone Antidegradation review and received preferred alternative limits that are lower in concentration than the limits provided in this permit.
3. This permit authorizes sludge handling via any of the methods contained in the attached Standard Conditions Part III, for which the permittee (facility) has received previous approval from the Missouri Department of Natural Resources (department). If a facility would like approval for another method of sludge disposal not previously approved, the facility shall submit a plan to the appropriate department regional office. The plan must demonstrate compliance with the requirements of Standard Conditions Part III. A map of department regional offices along with contact information is located on the department's website at www.dnr.mo.gov/regions/regions.htm.
4. This permit does not authorize discharges:
 - (a) To a metropolitan no-discharge stream;
 - (b) Within the watershed of lakes designated as L1 (public drinking water supply);
 - (c) Directly to a subsurface water either by irrigation or injection;
 - (d) Within 1,000 feet of a sinkhole or other direct conduit to groundwater;
 - (e) Within the watershed of an Outstanding National Resource Water¹, which includes the Ozark National Scenic Riverways and the Wild and Scenic Rivers System;
 - (f) Within 1,000 feet upstream of waters that have been identified as an Outstanding State Resource Water¹;
 - (g) To a designated cold water fishery¹;
 - (h) Within 2 miles upstream of biocriteria reference locations¹;
 - (i) Within 2 miles upstream of streams, lakes, or reservoirs identified as critical habitat for endangered species; or
 - (j) Within a watershed which has an approved Total Maximum Daily Load (TMDL) that includes wasteload allocations (WLAs) for oxygen demand, nitrogen, phosphorus, ammonia, or unknown impairments. Water bodies with approved TMDLs can be found at www.dnr.mo.gov/env/wpp/tmdl/.

¹ Identified or described in 10 CSR 20, Chapter 7. These regulations are available at many libraries and online at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp, or may be purchased from the department by calling the department's Water Protection Program.
5. The department may require any permittee (facility) authorized by a general permit to apply for a site-specific permit [10 CSR 20-6.010(13)(C)]. Cases where a site-specific permit may be required include, but are not limited to, the following:
 - (a) The discharge(s) is a significant contributor of pollution which impairs the beneficial uses of the receiving stream;
 - (b) The discharger is not in compliance with the conditions of the general permit; or
 - (c) A Total Maximum Daily Load (TMDL) containing requirements applicable to the discharge(s) is approved.
6. Facilities that are located within the watershed of a 303(d) listed impaired water or a watershed with an approved TMDL will need to be evaluated on a case-by-case basis for inclusion under this permit. Missouri's 303(d) listed impaired waters or waters with approved TMDLs can be found at www.dnr.mo.gov/env/wpp/waterquality/index.html. Facilities that are found to be discharging the listed pollutant(s) of concern for any impaired water may be required to obtain a site-specific permit.
7. If a facility covered under a current general permit desires to apply for a site-specific permit, the facility may do so by contacting the department for application requirements and procedures.
8. Facilities covered under a current site-specific permit who desire to apply for inclusion under this general permit may contact the department for application requirements and procedures.
9. The final effluent limitations and monitoring requirements section of this permit contains five tables. To determine which table applies to the permitted facility, refer to Missouri water quality standards 10 CSR 20-7.031, which can be found at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Table A-1 Applicability:
- Facilities with design flow $\leq 1,500$ gpd or actual flow that does not exceed 1,500 gpd; and
 - A flow totalizer installed; and
 - Discharges to a Class P stream; and
 - Discharges to a stream with a stream flow to design flow ratio of 10:1 or greater.

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	SAMPLING FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅	mg/L		45	30	once/quarter***	grab
Total Suspended Solids	mg/L		45	30	once/quarter***	grab
Ammonia as N	mg/L	*		*	once/quarter***	grab
<i>E. coli</i> (Note 1, Page 8)	#/100 mL	630		126	once/quarter***	grab
Flow	gpd	1500		*	daily	24 hr. total
pH – Units	SU	**		**	once/quarter***	grab
Total Residual Chlorine (Note 3, Page 8)	µg/L	17 (130 ML)		8 (130 ML)	once/quarter***	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	SAMPLING FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter***	grab
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE MONTH 28, 20XX . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. pH is limited to the range of 6.0-9.0 pH units. Technology based limits [10 CSR 20-7.015] are protective of the water quality standards [10 CSR 20-7.031(4)(E)], due to the buffering capacity of the mixing zone.

*** Quarterly sampling is required. If a discharge occurs during the reporting period, samples shall be collected and tested for the parameters listed in Table A-1. Report as no-discharge when a discharge does not occur during the reporting period. If the facility serves part-time or seasonal establishment/residence(s), then sampling shall occur while the treatment facility is operating and after a discharge begins. If multiple samples are collected and analyzed during a quarter, the multiple samples are not to be averaged. See Table B-1 on Page 8 for the quarterly sampling schedule.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

2. Table A-2 Applicability:
- Facilities with design flow \leq 1,500 gpd or actual flow that does not exceed 1,500 gpd; and
 - A flow totalizer installed; and
 - Discharges to a Class L2 or L3 lake or reservoir; or
 - Discharges to a receiving stream within one-half mile of a Class L2 or L3 lake or reservoir.

ALL OUTFALLS	TABLE A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
	The facility is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the facility as specified below:					
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	SAMPLING FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅	mg/L		30	20	once/quarter***	grab
Total Suspended Solids	mg/L		30	20	once/quarter***	grab
Ammonia as N	mg/L	*		*	once/quarter***	grab
<i>E. coli</i> (Note 1, Page 8)	#/100 mL	630		126	once/quarter***	grab
Flow	gpd	1500		*	daily	24 hr. total
pH – Units	SU	**		**	once/quarter***	grab
Total Phosphorus****	mg/L	*		0.5	once/quarter***	grab
Total Residual Chlorine (Note 3, Page 8)	µg/L	17 (130 ML)		8 (130 ML)	once/quarter***	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	SAMPLING FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter***	grab
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE <u>MONTH 28, 20XX</u> . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

- * Monitoring requirement only.
- ** pH is measured in pH units and is not to be averaged. pH is limited to the range of 6.0-9.0 pH units. Technology based limits [10 CSR 20-7.015] are protective of the water quality standards [10 CSR 20-7.031(4)(E)], due to the buffering capacity of the mixing zone.
- *** Quarterly sampling is required. If a discharge occurs during the reporting period, samples shall be collected and tested for the parameters listed in Table A-2. Report as no-discharge when a discharge does not occur during the reporting period. If the facility serves part-time or seasonal establishment/residence(s), then sampling shall occur while the treatment facility is operating and after a discharge begins. If multiple samples are collected and analyzed during a quarter, the multiple samples are not to be averaged. See Table B-1 on Page 8 for the quarterly sampling schedule.
- **** Facilities discharging to Table Rock Lake watershed (Hydrologic Units 11010001 and 11010002) and discharging to Lake Taneycomo and its tributaries between Table Rock Dam and Power Site Dam (Hydrologic Units 110100030101 – 110100030110) are required to monitor Total Phosphorus and report a daily maximum and meet a monthly average limit. The monthly average limit is not applicable to facilities discharging in the White River basin outside of the above designated areas; however these facilities are required to monitor Total Phosphorus and report a daily maximum and monthly average.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

3. Table A-3 Applicability:
- a. Facilities with design flow 1,501 gpd – 50,000 gpd; or
 - b. Facilities with actual flow ≤ 1,500 gpd that do not qualify for Table A-1; and
 - c. Discharges to a Class C, P, or U stream.

ALL OUTFALLS	TABLE A-3 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
	The facility is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the facility as specified below:					
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	SAMPLING FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅	mg/L		45	30	once/quarter***	grab
Total Suspended Solids	mg/L		45	30	once/quarter***	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	3.6 7.5		1.4 2.9	once/quarter***	grab
<i>E. coli</i> (Note 1, Page 8)	#/100 mL	630		126	once/quarter***	grab
Flow	gpd	*		*	once/quarter***	24 hr. estimate
pH – Units	SU	**		**	once/quarter***	grab
Total Residual Chlorine (Note 3, Page 8)	µg/L	17 (130 ML)		8 (130 ML)	once/quarter***	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	SAMPLING FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter***	grab
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE MONTH 28, 20XX . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. pH is limited to the range of 6.5-9.0 pH units. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the water quality standards [10 CSR 20-7.031(4)(E)], which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed, therefore the water quality standards must be met at the outfall due to (C, P, U, etc.) classification of the receiving stream.

*** Quarterly sampling is required. If a discharge occurs during the reporting period, samples shall be collected and tested for the parameters listed in Table A-3. Report as no-discharge when a discharge does not occur during the reporting period. If the facility serves part-time or seasonal establishment/residence(s), then sampling shall occur while the treatment facility is operating and after a discharge begins. If multiple samples are collected and analyzed during a quarter, the multiple samples are not to be averaged. See Table B-1 on Page 8 for the quarterly sampling schedule.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

4. Table A-4 Applicability:
- a. Facilities with design flow 1,501 gpd – 50,000 gpd; or
 - b. Facilities with actual flow ≤ 1,500 gpd that do not qualify for Table A-2; and
 - c. Discharges to a Class L2 or L3 lake or reservoir; or
 - d. Discharges to a receiving stream within one-half mile of a Class L2 or L3 lake or reservoir.

ALL OUTFALLS		TABLE A-4 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The facility is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the facility as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	SAMPLING FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅	mg/L		30	20	once/quarter***	grab
Total Suspended Solids	mg/L		30	20	once/quarter***	grab
Ammonia as N	mg/L	12.1		4.6	once/quarter***	grab
<i>E. coli</i> (Note 1, Page 8)	#/100 mL	630		126	once/quarter***	grab
Flow	gpd	*		*	once/quarter***	24 hr. estimate
pH – Units	SU	**		**	once/quarter***	grab
Total Phosphorus****	mg/L	*		0.5	once/quarter***	grab
Total Residual Chlorine (Note 3, Page 8)	µg/L	17 (130 ML)		8 (130 ML)	once/quarter***	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	SAMPLING FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter***	grab
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE <u>MONTH 28, 20XX</u> . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. pH is limited to the range of 6.0-9.0 pH units. Technology based limits [10 CSR 20-7.015] are protective of the water quality standards [10 CSR 20-7.031(4)(E)], due to the buffering capacity of the mixing zone.

*** Quarterly sampling is required. If a discharge occurs during the reporting period, samples shall be collected and tested for the parameters listed in Table A-4. Report as no-discharge when a discharge does not occur during the reporting period. If the facility serves part-time or seasonal establishment/residence(s), then sampling shall occur while the treatment facility is operating and after a discharge begins. If multiple samples are collected and analyzed during a quarter, the multiple samples are not to be averaged. See Table B-1 on Page 8 for the quarterly sampling schedule.

**** Facilities discharging to Table Rock Lake watershed (Hydrologic Units 11010001 and 11010002) and discharging to Lake Taneycomo and its tributaries between Table Rock Dam and Power Site Dam (Hydrologic Units 110100030101 – 110100030110) are required to monitor Total Phosphorus and report a daily maximum and meet a monthly average limit. The monthly average limit is not applicable to facilities discharging in the White River basin outside of the above designated areas; however these facilities are required to monitor Total Phosphorus and report a daily maximum and monthly average.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

5. Table A-5 Applicability:
a. Facilities with design flow \leq 50,000 gpd that discharge to a losing stream.

ALL OUTFALLS	TABLE A-5 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
	The facility is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the facility as specified below:					
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	SAMPLING FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅	mg/L		15	10	once/quarter***	grab
Total Suspended Solids	mg/L		20	15	once/quarter***	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	3.6 7.5		1.4 2.9	once/quarter***	grab
<i>E. coli</i> (Note 2, Page 8)	#/100 mL	126		126	once/quarter***	grab
Flow	gpd	*		*	once/quarter***	24 hr. estimate
pH – Units	SU	**		**	once/quarter***	grab
Total Residual Chlorine (Note 3, Page 8)	µg/L	17 (130 ML)		8 (130 ML)	once/quarter***	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	SAMPLING FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter***	grab
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> TO THE APPROPRIATE REGIONAL OFFICE. THE FIRST REPORT IS DUE MONTH 28, 20XX . IT IS A VIOLATION OF THIS PERMIT TO FAIL TO SAMPLE.						

* Monitoring requirement only

** pH is measured in pH units and is not to be averaged. pH is limited to the range of 6.5-9.0 pH units. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the water quality standards [10 CSR 20-7.031(4)(E)], which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed, therefore the water quality standards must be met at the outfall due to (C, P, U, etc.) classification of the receiving stream.

*** Quarterly sampling is required. If a discharge occurs during the reporting period, samples shall be collected and tested for the parameters listed in Table A-5. Report as no-discharge when a discharge does not occur during the reporting period. If the facility serves part-time or seasonal establishment/residence(s), then sampling shall occur while the treatment facility is operating and after a discharge begins. If multiple samples are collected and analyzed during a quarter, the multiple samples are not to be averaged. See Table B-2 on Page 8 for the quarterly sampling schedule.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Table B-1: Minimum Sampling Requirements (Discharge to Class C, P, and U streams; L2 and L3 lakes and reservoirs)				
Quarter	Months	<i>E. coli</i>, Total Residual Chlorine, and Dissolved Oxygen	All Other Parameters	Report 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, November, December	Sample once during October; no sample required in either November or December	Sample at least once during any month of the quarter	January 28 th

Table B-2: Minimum Sampling Requirements (Discharge to Losing Streams)			
Quarter	Months	Effluent Parameters	Report Due
First	January, February, March	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	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

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 - Effluent limits of 126 colony-forming units per 100 mL daily maximum and monthly average for *E. coli* are applicable year round when discharging to a losing stream. Discharges to losing streams shall not exceed 126 colony-forming units per 100 mL daily maximum and monthly average [10 CSR 20-7.031(5)(C)] except for the following: Discharges to a losing stream shall be considered in compliance so long as no more than 10% of samples exceed 126 colony-forming units per 100 mL daily maximum [10 CSR 20-7.015(9)(B)1.G.].

Note 3 - Facilities using ultraviolet disinfection are not required to sample for TRC if no chlorine is used.

- (a) This effluent limit is below the Minimum Quantification Level (ML) of the most common and practical U.S. Environmental Protection Agency (EPA) approved CLTRC methods. The department has determined the current acceptable ML for TRC to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G, from Standard Methods for the Examination of Waters and Wastewater. The facility will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the ML of 130 µg/L will be considered violations of the permit and values less than the ML of 130 µg/L will be considered to be in compliance with the permit limitation. The ML does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Do not chlorinate or chemically de-chlorinate if it is not needed to meet the limits in your permit. Facilities required to comply with Table A-1, A-2, A-3, or A-4 are not required to disinfect for *E. coli* during non-recreational months; do not chlorinate during non-recreational months.
- (c) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as 0 µg/L TRC.

STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Standard Conditions Parts I and III dated November 1, 2013, and March 1, 2014, and hereby incorporated as though fully set forth herein.

REQUIREMENTS

1. This permit establishes final ammonia limitations based on Missouri's current water quality standards. On August 22, 2013, the EPA published a notice in the Federal Register announcing the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013 is not a rule or automatically part of a state's water quality standards. States must adopt new ammonia criteria, consistent with EPA's published ammonia criteria, into their standards that protect the designated uses of the water bodies. The department intends to adopt the new ammonia criteria during the next water quality standards triennial review. Please refer to Section VI of this permit's fact sheet for further information. It is also recommended the facility view the department's 2013 EPA Criteria Fact Sheet located at www.dnr.mo.gov/pubs/pub2481.htm.
2. All outfalls must be clearly marked in the field.
3. Facilities will cease discharging by connecting to an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit [644.055 RSMo]. The fees table can be found at 10 CSR 20-6.011 Appendix A.
5. Wastewater treatment systems owned or operated by a private sewer company regulated by the Public Service Commission shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the facility as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the facility shall submit a written request to the department for review.
6. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the facility shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Conditions Part I, Section B, subsection 2.b. Bypasses are to be reported to the appropriate department regional office. A map of department regional offices along with contact information may be located on the department's website at www.dnr.mo.gov/regions/regions.htm.
7. The facility must be sufficiently secured by a fence to restrict entry by children, livestock, and unauthorized persons as well as to protect the facility from vandalism.
8. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain locked except when opened by the facility to perform operational monitoring, sampling, maintenance, mowing, or for inspections by the department.
9. At least one (1) warning sign shall be placed on each side of the facility enclosure in such a position as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY - KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment, or other suitable location.
10. An Operation and Maintenance (O and M) manual shall be maintained by the facility and made available to the operator. The O and M manual shall include key operating procedures and a brief summary of the operation of the facility.
11. An all-weather access road shall be provided to the treatment facility.
12. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall shall be protected against the effects of floodwater, ice, or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so 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.
13. Land application of biosolids shall be conducted in accordance with Standard Conditions III and a department approved biosolids management plan. Land application of biosolids during frozen, snow covered, or saturated soil conditions, in accordance with the additional requirements specified in Water Quality Guidesheet WQ426, shall occur only with prior notification to the appropriate department regional office.
14. A minimum of two (2) feet freeboard must be maintained in lagoon cell(s).

REQUIREMENTS (continued)

15. The berms of lagoon(s)/storage basin(s) shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.
16. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into lagoon(s)/storage basin(s) and to divert stormwater runoff around the lagoon and protect embankments from erosion.
17. Water Quality Standards
 - (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards [10 CSR 20-7.031], including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times, including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) 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;
 - (2) Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community;
 - (8) 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, RSMo.
18. Changes in Discharges of Toxic Substances

The facility shall notify the department as soon as it knows or has reason to believe:

 - (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,5-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (6) The notification level established by the department in accordance with 40 CFR 122.44(f).
 - (b) That the facility has begun or is expected to begin to use or manufacture as an intermediate product, by-product, final product, or waste product any toxic pollutant which was not reported in the permit application.
 - (c) Toxic pollutants shall consist of, but are not limited to pollutants listed in 10 CSR 20-7.031 Table A or 40 CFR 122.21 Appendix D.
19. This permit may be reopened and modified or alternatively revoked and reissued to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2)(A) and (B), and 307(a)(2) of the Clean Water Act (CWA), if the effluent standard or limitation issued or approved:
 - (1) Contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
 - (2) Controls any pollutant not limited in this permit.
 - (b) Incorporate new or modified effluent limitations or other conditions if the result of a wasteload allocation study, toxicity test, or other information indicates changes are necessary to assure compliance with Missouri water quality standards (10 CSR 20-7.031).
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, an effluent limit derived from a TMDL is developed for the receiving waters, which would then be included in a list of waters of the state not fully achieving Missouri water quality standards.

The permit, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

PERMIT TRANSFER

This permit may be transferred to a new owner by submitting an “Application for Transfer of Operating Permit” (www.dnr.missouri.gov/forms/780-1517-f.pdf) signed by the seller and buyer of the facility along with the appropriate modification fee.

PERMIT TERMINATION

In order to terminate this permit, the facility shall notify the department by submitting Form H, included with the Missouri State Operating Permit. The facility shall complete Form H (www.dnr.mo.gov/forms/780-1409-f.pdf) and mail it to the department at the address noted in the cover letter of this permit. Proper closure of any storage structure is required prior to permit termination. A closure plan shall be submitted to the department and approved prior to initiating closure activities.

PERMIT RENEWAL

Unless this permit is terminated, the facility shall submit an application (Form E) for the renewal of this permit (www.dnr.mo.gov/forms/780-1409-f.pdf) no later than thirty (30) days prior to the permit’s expiration date. Failure to apply for renewal may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

DUTY OF COMPLIANCE

The facility shall comply with all conditions of this permit. Any noncompliance with this permit constitutes a violation of Chapter 644, Missouri Clean Water Law, 10 CSR 20-6, and 10 CSR 20-7. Noncompliance may result in enforcement action, termination of this permit, or denial of the facility’s request for renewal.

Missouri Department of Natural Resources
Fact Sheet
MOGD, Non-POTW Discharging $\leq 50,000$ gallons per day

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 Public Law 92-500 as amended) established the National Pollution 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 CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (permit) are issued by the Missouri Department of Natural Resources (department) under an approved program, operating in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR Part 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)(2), a Fact Sheet 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 permit. A Fact Sheet is not an enforceable part of a permit.

This Fact Sheet is for a:

Master General Permit

Part I – Facility Information

Facility Type: Non-Publicly Owned Treatment Works (Non-POTW) - Domestic wastewater only

Facility Description: Non-POTW with a design flow of $\leq 50,000$ gallons per day (gpd) that is capable of complying with the effluent limits contained herein.

CLARIFICATION:

Cold Water Fisheries - The final effluent limitations for ammonia in this permit were not calculated using acute ammonia criteria for cold water fisheries [10 CSR 20-7.031 Table B1]. The acute ammonia criteria for cold water fisheries were considered too stringent for this general permit. As a result, this permit does not authorize discharges to a designated cold water fishery (Applicability 4g).

Class P, C, and U streams - Table A-1 in the final effluent limitations and monitoring requirements section applies to Class P streams only. It does not apply to Class C or U streams. Stream class definitions can be found at 10 CSR 20-7.031(1)(F). Class C streams may cease flow in dry periods and Class U streams are even less likely to flow. Table A-1 requires that the discharge must be to a stream with a stream flow to design flow ratio of 10:1 or greater. The default assumption is that C and U streams do not continually meet this standard, thus they are excluded in Table A-1.

Part II – Operator Certification Requirements

Per 10 CSR 9.020, requirements for operation by certified personnel shall apply to all wastewater treatment systems serving population equivalents greater than two hundred or with fifty or more service connections and owned or operated by private sewer companies regulated by the Public Service Commission. Minimum certification requirements can be found at 10 CSR 9.020.

Per 10 CSR 20-6.010(8), facilities shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with 10 CSR 20-9.020(2) and any other applicable state law or regulation.

Part III – Operational Monitoring

Per 10 CSR 9.010, operational monitoring requirements shall apply to all wastewater treatment systems owned or operated by private sewer companies regulated by the Public Service Commission, servicing population equivalents greater than two hundred or with twenty-five or more service connections. Minimum monitoring requirement can be found at 10 CSR 9.010.

Part IV – Receiving Stream Information

Per 10 CSR 20-7.031 Missouri water quality standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses". Limits set by this permit are intended to be protective of General Criteria (AQL, DWS, GRW, HHF, IND, IRR, LWW, SCR, and WBC).

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

Per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation and Discussion of Limits section. This permit only applies to facilities discharging to the following water body categories:

- Missouri or Mississippi River [10 CSR 20-7.015(2)]
- Lakes or Reservoirs [10 CSR 20-7.015(3)]
- Losing Streams [10 CSR 20-7.015(4)]
- All Other Waters [10 CSR 20-7.015(8)]

Part V – Rationale and Derivation of Effluent Limitations and Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

Per 10 CSR 20-7.015(4)(A), discharges to losing streams shall be permitted only after other alternatives, including land application, discharges to a gaining stream, and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

- Not Applicable; Alternative evaluations will occur during the construction permit process. All new or expanding facilities shall receive a construction permit prior to receiving this permit.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions. If this permit is not as stringent, then backsliding has occurred; however, the permit remains protective of water quality and adheres to water quality standards.

Previously, some permits required temperature monitoring in order to determine site-specific ammonia limitations based on effluent temperature and pH. This procedure has been discontinued given effluent temperature and pH are not representative of instream conditions. This general permit contains ammonia limits that were established using pH and temperature defaults from the Missouri Water Quality Standards. These default ammonia limits are protective of water quality across various stream conditions.

ANTIDegradation:

In accordance with Missouri water quality standards [10 CSR 20-7.031(3)], the department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge. Facilities that were constructed or expanded prior to August 30, 2008 are not subject to the requirements of Missouri's Antidegradation Implementation Procedure because these procedures were not promulgated and effective prior to that date.

- Not Applicable; Antidegradation reviews are performed at the time of construction. No degradation proposed 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 AND CONTINUING AUTHORITY:

Per 10 CSR 20-6.010(3)(B), an applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal CWA or any other regional sewage service and treatment plan approved for higher preference authority by the department.

BIOSOLIDS AND 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 residues 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 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. Additional information regarding biosolids and sludge is located at the following web address: extension.missouri.edu/main/DisplayCategory.aspx?C=74, Water Quality Guidesheets WQ420 through WQ449.

With prior approval from the department, facilities are authorized to land apply biosolids or utilize other methods of sludge disposal contained in Standard Conditions Part III.

CONSERVATIVE ASSUMPTIONS:

In order to facilitate efficient processing of permit applications, domestic wastewater treatment facilities $\leq 50,000$ can receive a general permit. If the facility would prefer to have additional reviews conducted, such as reasonable potential analysis or mixing considerations, a site-specific permit application must be submitted. The following conservative assumptions have been made regarding the facility:

- Ammonia is a constituent of domestic wastewater. Facilities with low flows ($<1,500$ gpd) that are entitled to a mixing zone have no reasonable potential to exceed water quality standards for ammonia. However, all larger flows can be assumed to have reasonable potential. Facilities that would like site-specific calculation of ammonia limits must apply for a site-specific permit.
- A Reasonable Potential Analysis [statistical analysis] using facility data was not conducted. Where reasonable potential is assumed, default multipliers from Environmental Protection Agency (EPA) guidance are utilized to calculate effluent limits.
- No degradation of ammonia has been calculated.
- Whole Body Contact Recreation must be protected for in all receiving water bodies.
- Only domestic wastewater is included in the influent to this facility. This facility was determined not to have other sources of wastewater which would introduce other pollutants.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW [40 CFR Part 403.3(q)].

Not Applicable; This permit does not apply to facilities that require a Pretreatment Program.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day and Total Suspended Solids for POTW/municipals.

Not Applicable; Influent monitoring is not required to determine percent removal.

SANITARY SEWER OVERFLOW (SSO) AND INFLOW AND INFILTRATION (I AND I):

SSOs are defined as an untreated or partially treated sewage release and are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSOs have a variety of causes including blockages, line breaks, and sewer defects that allow excess stormwater and groundwater to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSOs can also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Missouri RSMo §644.026.1 mandates that the department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

Not Applicable; 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.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

A SWPPP is a series of steps and activities to identify sources of pollution or contamination, then select and carry out actions which prevent or control the pollution of stormwater discharges. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Not Applicable; At this time, the facility is not required to develop and implement a SWPPP.

VARIANCE:

Per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule, or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable; This permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATION (WLA) FOR LIMITS:

Per 10 CSR 20-2.010(78), 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.

Applicable; WLA were calculated using water quality criteria or water quality model results and the dilution equation below:

$$C_e = \frac{(Q_e + Q_s)C - (C_s \times Q_s)}{(Q_e)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C_e = effluent concentration
 Q_e = effluent flow
 Q_s = upstream flow
 C = downstream concentration
 C_s = upstream concentration

Chronic WLA 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 WLA 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 (TSD) (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 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, targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring be used to determine the value of "n" for calculating the Average Monthly Limit (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 must use at a minimum, an assumed number of samples of "n=4". For Total Ammonia as Nitrogen, "n = 30" is used.

WASTELOAD ALLOCATION MODELING:

There are two general types of effluent limitations, technology-based effluent limitations (TBELs) and water quality-based effluent limitations (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBELs must be used.

Not Applicable; A WLA study was either not submitted or determined not applicable by the department.

WATER QUALITY STANDARDS:

Per 10 CSR 20-7.031(4), General Criteria shall be applicable to all waters of the state at all times, including mixing zones. Additionally, 40 CFR 122.44(d)(1) directs the department to include in each NPDES permit conditions to achieve water quality established under Section 303 of the CWA, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with, or through synergistic responses when mixed with receiving stream water.

Not Applicable; At this time, the facility is not required to conduct a WET test.

40 CFR 122.41(M) - BYPASSES:

The Federal CWA, Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of a wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a facility can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), and (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

Not Applicable; This facility does not anticipate bypassing. It is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state

303(d) LIST AND TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the Federal CWA 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 beneficial uses of water such as whole body contact, 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.

Not Applicable; This permit does not apply within a watershed for which an approved TMDL includes WLA for oxygen demand, nitrogen, phosphorus, ammonia or unknown impairment. These pollutants are discharged by domestic wastewater treatment facilities and therefore it may be necessary to apply a lower WLA than appears in this permit to any new or existing discharge in order to protect water quality. Facilities located within a watershed for which an approved TMDL includes a WLA for pollutants other than those listed above will be considered for this permit on a case-by-case basis.

Part VI –2013 Water Quality Criteria for Ammonia

Upcoming changes to the water quality standards for ammonia may require significant upgrades to wastewater treatment facilities. On August 22, 2013, the EPA finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri’s current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America’s mussel species, which are spread across the state. According to the Missouri Department of Conservation, nearly two-thirds of the mussel species in Missouri are considered to be “of conservation concern”. Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective of young mussels present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the water quality standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.) as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the NPDES. States are required to review their water quality standards every three years, and if new criteria have been developed, they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our water quality standards mirror those developed by the EPA. However, we will utilize any available flexibility based on species of mussels native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the facility. It is important that facilities discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The department encourages facilities to construct treatment technologies that can attain effluent quality that supports the EPA's new ammonia criteria.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the anticipated effluent limitations upon renewal of this permit are as follows:

- For facilities >1,500 gpd discharging to a stream:
Summer – 1.7 mg/L daily maximum, 0.6 mg/L monthly average;
Winter – 5.6 mg/L daily maximum, 2.1 mg/L monthly average;
- For facilities >1,500 gpd discharging to a classified lake:
Year Round – 8.1 mg/L daily maximum, 3.1 mg/L monthly average;

Operating permits for facilities in Missouri must be written based on current statutes and regulations. It is expected that the new water quality standards will be adopted in the next review of our water quality standards. Therefore this permit is written using existing effluent limitations. This advisory is added to the Fact Sheet to aid facilities in decision making. For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VII – Effluent Limits Determination (All Outfalls)

Facilities covered under this permit are only required to meet the limits that apply to the appropriate type of receiving water body.

EFFLUENT LIMITATIONS FOR TABLE A-1 RIVERS AND STREAMS:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Biochemical Oxygen Demand ₅	mg/L	1, 2		45	30
Total Suspended Solids	mg/L	1, 2		45	30
Ammonia as N	mg/L	2, 3, 4	*		*
<i>Escherichia coli</i>	***	1, 2, 3	630		126
Flow	gpd	1	1500		*
pH	SU	1, 2	6.0-9.0		
Total Residual Chlorine	µg/L	1, 3	17		8
Dissolved Oxygen**	mg/L	1	*		*

EFFLUENT LIMITATIONS FOR TABLE A-2 LAKES AND RESERVOIRS:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Biochemical Oxygen Demand ₅	mg/L	1, 2		30	20
Total Suspended Solids	mg/L	1, 2		30	20
Ammonia as N	mg/L	2, 3, 4	*		*
<i>Escherichia coli</i>	***	1, 2, 3	630		126
Flow	gpd	1	1500		*
pH	SU	1, 2	6.0-9.0		
Total Phosphorus	mg/L	1	*		0.5
Total Residual Chlorine	µg/L	1, 3	17		8
Dissolved Oxygen**	mg/L	1	*		*

EFFLUENT LIMITATIONS FOR TABLE A-3 RIVERS AND STREAMS:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Biochemical Oxygen Demand ₅	mg/L	1, 2		45	30
Total Suspended Solids	mg/L	1, 2		45	30
Ammonia as N	mg/L	2, 3, 4			
April 1 – Sept 30			3.6		1.4
Oct 1 - Mar 31			7.5		2.9
<i>Escherichia coli</i>	***	1, 2, 3	630		126
Flow	gpd	1	*		*
pH	SU	1, 2	6.5-9.0		
Total Residual Chlorine	µg/L	1, 3	17		8
Dissolved Oxygen**	mg/L	1	*		*

EFFLUENT LIMITATIONS FOR TABLE A-4 LAKES AND RESERVOIRS:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Biochemical Oxygen Demand ₅	mg/L	1, 2		30	20
Total Suspended Solids	mg/L	1, 2		30	20
Ammonia as N	mg/L	2, 3, 4	12.1		4.6
<i>Escherichia coli</i>	***	1, 2, 3	630		126
Flow	gpd	1	*		*
pH	SU	1, 2	6.0-9.0		
Total Phosphorus	mg/L	1	*		0.5
Total Residual Chlorine	µg/L	1, 3	17		8
Dissolved Oxygen**	mg/L	1	*		*

EFFLUENT LIMITATIONS FOR TABLE A-5 LOSING STREAMS:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Biochemical Oxygen Demand ₅	mg/L	1, 2		15	10
Total Suspended Solids	mg/L	1, 2		20	15
Ammonia as N	mg/L	2, 3, 4			
April 1 – Sept 30			3.6		1.4
Oct 1 - Mar 31			7.5		2.9
<i>Escherichia coli</i>	****	1, 2, 3	126		126
Flow	gpd	1	*		*
pH	SU	1, 2	6.5-9.0		
Total Residual Chlorine	µg/L	1, 3	17		8
Dissolved Oxygen**	mg/L	1	*		*

* Monitoring requirement only.

** For Dissolved Oxygen the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

*** # of colony forming units/100 mL; the Monthly Average Limit for *E. coli* is expressed as a geometric mean.

**** # of colony forming units/100 mL; *E. coli* shall not exceed 126 colonies per 100 mL in more than 10% of samples.

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standards
3. Water Quality Based Effluent Limits
4. Ammonia Policy

DERIVATION AND DISCUSSION OF LIMITS (ALL OUTFALLS):

- **Biochemical Oxygen Demand (BOD₅):** Effluent limits for each type of receiving water body were set according to 10 CSR 20-70.015(2)-(8).
- **Total Suspended Solids (TSS):** Effluent limits for each type of receiving water body were set according to 10 CSR 20-70.015(2)-(8).
- **Ammonia as N (Monitoring Only):** It is the permit writer's best professional judgment that facilities qualifying for the limits in Tables A-1 and A-2 do not have reasonable potential to exceed water quality standards for ammonia. These facilities cannot discharge in excess of 1,500 gpd and the receiving water body must provide mixing that allows for a 10:1 dilution of the discharge. Under these conditions there is no reasonable potential to exceed acute or chronic ammonia criteria in-stream. Ammonia monitoring is required to verify that the facility is not contributing to water quality exceedances.
- **Ammonia as N for Lakes:** Early Life Stages Present Total Ammonia Nitrogen criteria applies a default of pH 7.8 SU [10 CSR 20-7.031(5)(B)(7)(C) and 10 CSR 20-7.031(5) Table B3]. Because of mixing allowable in lakes, the acute ammonia criteria drive the WLA for ammonia. The WLA calculation below assumes a maximum flow of 50,000 gpd or 0.08cfs.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Acute WLA: $C_e = ((0.08 + 0.0)12.1 - (0.0 * 0.01))/0.08$
 $C_e = 12.1 \text{ mg/L}$

Long Term Average (LTA)_a = 12.1 mg/L (0.321) = 3.89 mg/L [CV =0.6, 99th Percentile]

Maximum Daily Limit (MDL) = 3.89 mg/L (3.11) = 12.1 mg/L [CV =0.6, 99th Percentile]
 Average Monthly Limit (AML) = 1.17 mg/L (1.19) = 1.4 mg/L [CV =0.6, 95th Percentile, n =30]

- **Ammonia as N for Rivers and Streams:** Early Life Stages Present Total Ammonia Nitrogen criteria applies a default of pH 7.8 SU [10 CSR 20-7.031(5)(B)(7)(C) and 10 CSR 20-7.031 Table B3]. No mixing considerations allowed; therefore, WLA = appropriate criterion. The WLA calculation below assumes a maximum flow of 50,000 gpd or 0.08 cubic feet second (cfs).

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.08 + 0.0)1.5 - (0.0 * 0.01))/0.08$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.08 + 0.0)12.1 - (0.0 * 0.01))/0.08$
 $C_e = 12.1 \text{ mg/L}$

Chronic LTA (LTA)_c = 1.5 mg/L (0.780) = 1.17 mg/L [CV =0.6, 99th Percentile, 30 day avg.]
 Acute LTA (LTA)_a = 12.1 mg/L (0.321) = 3.89 mg/L [CV =0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 1.17 mg/L (3.11) = 3.6 mg/L [CV =0.6, 99th Percentile]
 AML = 1.17 mg/L (1.19) = 1.4 mg/L [CV =0.6, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.08 + 0.0)3.1 - (0.0 * 0.01))/0.08$
 $C_e = 3.1 \text{ mg/L}$

$$\text{Acute WLA: } C_e = ((0.08 + 0.0)12.1 - (0.0 * 0.01))/0.08$$

$$C_e = 12.1 \text{ mg/L}$$

$$LTA_c = 3.1 \text{ mg/L (0.780)} = 2.42 \text{ mg/L}$$

[CV =0.6, 99th Percentile, 30 day avg.]

$$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.89 \text{ mg/L}$$

[CV =0.6, 99th Percentile]Use most protective number of LTA_c or LTA_a.

$$\text{MDL} = 2.42 \text{ mg/L (3.11)} = 7.5 \text{ mg/L}$$

[CV =0.6, 99th Percentile]

$$\text{AML} = 2.42 \text{ mg/L (1.19)} = 2.9 \text{ mg/L}$$

[CV =0.6, 95th Percentile, n =30]

- **Escherichia coli (E. coli):**

- Discharges to rivers/streams or lakes/reservoirs shall not exceed a monthly average of 126 per 100 mL as a geometric mean and Daily Maximum of 630 during the recreational season (April 1 – October 31) to protect Whole Body Contact Recreation designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C).

- Discharges to losing streams shall not exceed 126 colony-forming units per 100 mL daily maximum and monthly average [10 CSR 20-7.031(5)(C)] except for the following: Discharges to a losing stream shall be considered in compliance so long as no more than 10% of samples exceed 126 colony-forming units per 100 mL daily maximum [10 CSR 20-7.015(9)(B)1.G.].

- **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 facility is unable to obtain effluent flow, then it is the responsibility of the facility to inform the department, which may require the submittal of a permit modification.

- **pH:** pH is measured in pH units and is not to be averaged. For facilities that meet the requirements of Tables A-1, A-2, and A-4, pH is limited to the range of 6.0-9.0 pH units. Technology based limits [10 CSR 20-7.015] are protective of the water quality standards [10 CSR 20-7.031(4)(E)], due to the buffering capacity of the mixing zone. For facilities that meet the requirements of Table A-3 and A-5, pH is limited to the range of 6.5-9.0 pH units. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the water quality standards [10 CSR 20-7.031(4)(E)], which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed, therefore the water quality standards must be met at the outfall due to (U, C, P, etc.) classification of the receiving stream.

- **Total Phosphorus:** Effluent limits for each type of receiving water body were set according to 10 CSR 20-70.015(2)-(8).

- **Total Residual Chlorine (TRC):** Warm-water Protection of Aquatic Life CCC (criteria continuous concentration) = 10µg/L, CMC (criteria maximum concentration) = 19µg/L [10 CSR 20-7.031 Table A]. Background TRC = 0.0µg/L.

$$\text{Chronic WLA: } C_e = ((0.08 + 0.0)10 - (0.0 * 0.0))/0.08$$

$$C_e = 10\mu\text{g/L}$$

$$\text{Acute WLA: } C_e = ((0.08 + 0.0)19 - (0.0 * 0.0))/0.08$$

$$C_e = 19\mu\text{g/L}$$

$$LTA_c = 10 (0.527) = 5.3\mu\text{g/L}$$

[CV = 0.6, 99th Percentile]

$$LTA_a = 19 (0.321) = 6.1\mu\text{g/L}$$

[CV = 0.6, 99th Percentile]Use most protective number of LTA_c or LTA_a.

$$\text{MDL} = 5.3 (3.11) = 17\mu\text{g/L}$$

[CV = 0.6, 99th Percentile]

$$\text{AML} = 5.3 (1.55) = 8\mu\text{g/L}$$

[CV = 0.6, 95th Percentile, n = 4]

- **Dissolved Oxygen:** Monitoring is required to determine if a facility has the potential to deplete oxygen to an extent that can be detrimental to aquatic life in the receiving water body.

Part VIII – Finding of Affordability

Pursuant to Section 644.145 RSMo., the department is required to determine whether a permit or decision is affordable and make a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or POTWs.

- Not Applicable; The department is not required to determine findings of affordability because the facility is not a combined or separate sanitary sewer system or a POTW.

Part IX – 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 permit. The proposed determinations are tentative pending public comment.

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 or because of 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 facility must be notified of the denial in writing.

The department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than 30 days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this permit was from February 21, 2014, through March 21, 2014. Two letters were received during the 30 day public notice period.

The comments from the letters and the departments' response to the comments are below:

Comment 1: I submit that the 1,500 gpd or less cutoff be changed to 12,000 gpd or less to be more reflective of what actually constitutes a small discharging system.

Comment 2: We believe that table A-1 should be applicable to all facilities with design flow less than or equal to 10,000 gpd.

Response: The Department has considered the request and determined that the design flow limit of $\leq 1,500$ gpd will remain in the permit. While the department does not disagree that 12,000 gpd is a "small flow" discharge, Missouri water quality standards must be considered when making this flow limitation decision. Ammonia is a constituent of domestic wastewater and is an important pollutant of concern. When making the decision to limit flow, consideration of the toxicity of ammonia at typical discharging volumes and stream flows was the basis. The volume of $\leq 1,500$ gpd was chosen given the Department could be reasonably certain that toxicity would be avoided via dilution of the receiving stream. Increasing the discharge flow would prohibit receiving stream dilution from assimilating the ammonia toxicity. Facilities that would like site-specific consideration of ammonia limits may apply for a site-specific permit.

DATE OF FACT SHEET: JANUARY 30, 2014

COMPLETED BY:

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