

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,

Permit No. MO-0138631

Owner: Cape Girardeau County Reorganized Common Sewer District
Address: 3054 State Highway FF, Jackson, MO 63755

Continuing Authority: Same as above
Address: Same as above

Facility Name: CGCRCS D, Fruitland WWTF
Facility Address: 3054 State Hwy FF, Jackson, MO 63755

Legal Description: Sec. 18, T 32N, R 13E, Cape Girardeau County
UTM Coordinates: X = 796643, Y = 4149700

Receiving Stream: Presumed-Use Stream (C) (5031) (losing)
First Classified Stream and ID: Presumed-Use Stream (C) (5031) (losing)
USGS Basin & Sub-watershed No.: Whitewater Basin; (07140107-0508)

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

Outfall #001 – POTW

The use or operation of this facility shall be by or under the supervision of a Certified “C” Operator.

Influent pump station / influent screening / Sequencing Batch Reactor / post-equalization basin / UV disinfection / aerobic digestion / storage basins / biosolids are land applied by contract hauler.

Design population equivalent is 5,684.

Design flow is 425,000 gallons per day.

Actual flow is 104,000 gallons per day.

Design sludge production is 135 dry tons/year.

Permitted Feature INF – Influent Monitoring Location – Headworks

UTM Coordinates: X = 796641, Y = 4149710

July 1, 2023

Effective Date

December 31, 2027

Expiration Date

A handwritten signature in black ink, appearing to read "John Hoke".

John Hoke, Director, Water Protection Program

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 <u>July 1, 2023</u> . Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Flow	MGD	*		*	once/weekday***	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		15	10	once/month	composite**
Total Suspended Solids	mg/L		15	10	once/month	composite**
<i>E. coli</i> (Note 1)	#/100mL	126		*	once/week	grab
Ammonia as N (Apr 1 – Sep 30)	mg/L	2.1		0.6	once/month	composite**
Ammonia as N (Oct 1 – Oct 31)	mg/L	5.6		1.8	once/month	composite**
Ammonia as N (Nov 1 – Mar 31)	mg/L	5.6		2.1	once/month	composite**
Oil & Grease	mg/L	15		10	once/month	grab
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units****	SU	6.5		9.0	once/month	grab
EFFLUENT PARAMETER(S)			UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅ – Percent Removal (Note 2)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (Note 2)			%	85	once/month	calculated
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2023</u> .						

* Monitoring requirement only.

**A 24-hour composite sample is composed of at least 24 aliquots (subsamples) by an automatic sampler calibrated to a flow metering device that takes a minimum of one aliquot per batch discharge from each reactor basin. In the event this sampling method is unavailable, a 24-hour composite sample is to be composed of 48 aliquots collected at 30 minute intervals by an automatic sampling device.

*** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.

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

Note 1 – Effluent limits of 126 #/100 mL daily maximum and monitoring only for monthly average for *E. coli* are applicable year round due to losing stream designation. No more than 10% of samples over the course of a calendar year shall exceed the 126 #/100 mL daily maximum.

Note 2 – Influent sampling for BOD₅ and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent – Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample is composed of at least 24 aliquots (subsamples) by an automatic sampler calibrated to a flow metering device that takes a minimum of one aliquot per batch discharge from each reactor basin. In the event this sampling method is unavailable, a 24-hour composite sample is to be composed of 48 aliquots collected at 30 minute intervals by an automatic sampling device.

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: Q						
Total Phosphorus	mg/L	*		*	once/quarter***	composite**
Total Kjeldahl Nitrogen (Note 3)	mg/L	*		*	once/quarter***	calculated
Nitrite + Nitrate	mg/L	*		*	once/quarter***	composite**
Total Nitrogen	mg/L	*		*	once/quarter***	composite**
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE OCTOBER 28, 2023 .						

* Monitoring requirement only.

**A 24-hour composite sample is composed of at least 24 aliquots (subsamples) by an automatic sampler calibrated to a flow metering device that takes a minimum of one aliquot per batch discharge from each reactor basin. In the event this sampling method is unavailable, a 24-hour composite sample is to be composed of 48 aliquots collected at 30 minute intervals by an automatic sampling device.

*** See table below for quarterly sampling requirements.

Note 3 –As Total Kjeldahl Nitrogen produces hazardous waste as a result of analysis, Total Kjeldahl Nitrogen will be calculated through the following equation: Total Nitrogen – (Nitrite + Nitrate) = Total Kjeldahl Nitrogen.

Quarterly Minimum Sampling Requirements			
Quarter	Months	Quarterly Effluent Parameters	Report is 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

OUTFALL #001	TABLE A-3. WHOLE EFFLUENT TOXICITY 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-3 shall become effective on July 1, 2023 . Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
	EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
DAILY MAXIMUM			WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE	
eDMR Limit Set: WA							
Acute Whole Effluent Toxicity (Note 4)	TU _a	*			once/permit cycle	composite**	
ACUTE WET TEST MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>JUNE 28, 2027</u> .							

* Monitoring requirement only.

**A 24-hour composite sample is composed of at least 24 aliquots (subsamples) by an automatic sampler calibrated to a flow metering device that takes a minimum of one aliquot per batch discharge from each reactor basin. In the event this sampling method is unavailable, a 24-hour composite sample is to be composed of 48 aliquots collected at 30 minute intervals by an automatic sampling device.

Note 4 – See Special Condition #14 for additional requirements.

PERMITTED FEATURE <u>INF</u>	TABLE B-1. INFLUENT MONITORING REQUIREMENTS					
	PARAMETER(S)	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY
The monitoring requirements in Table B-1 shall become effective on July 1, 2023 . The influent wastewater shall be monitored by the permittee as specified below:						
eDMR Limit Set: IM						
Biochemical Oxygen Demand ₅ (Note 2)	mg/L			*	once/month	composite**
Total Suspended Solids (Note 2)	mg/L			*	once/month	composite**
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY ; THE FIRST REPORT IS DUE AUGUST 28, 2023 .						
eDMR Limit Set: IQ						
Ammonia as N	mg/L	*		*	once/quarter***	composite**
Total Phosphorus	mg/L	*		*	once/quarter***	composite**
Total Kjeldahl Nitrogen (Note 3)	mg/L	*		*	once/quarter***	calculated
Nitrite + Nitrate	mg/L	*		*	once/quarter***	composite**
Total Nitrogen	mg/L	*		*	once/quarter***	composite**
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE OCTOBER 28, 2023 .						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

*** See table below for quarterly sampling requirements.

Note 2 – Influent sampling for BOD₅ and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent – Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample is composed of at least 24 aliquots (subsamples) by an automatic sampler calibrated to a flow metering device that takes a minimum of one aliquot per batch discharge from each reactor basin. In the event this sampling method is unavailable, a 24-hour composite sample is to be composed of 48 aliquots collected at 30 minute intervals by an automatic sampling device.

Note 3 –As Total Kjeldahl Nitrogen produces hazardous waste as a result of analysis, Total Kjeldahl Nitrogen will be calculated through the following equation: Total Nitrogen – (Nitrite + Nitrate) = Total Kjeldahl Nitrogen.

Quarterly Minimum Sampling Requirements			
Quarter	Months	Quarterly Influent Parameters	Report is 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

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and August 1, 2019, 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.

D. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. 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 <https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem>. Information about the eDMR system can be found at <https://dnr.mo.gov/water/business-industry-other-entities/reporting/electronic-discharge-monitoring-reporting-system-edmr>. 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: <https://apps5.mo.gov/mogems/welcome.action>. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov 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: <https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692>. 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.
 - (b) To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.
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 µg/L, if the method minimum level for the parameter is 50 µg/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.
 - (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. The permittee 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 permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. To request a modification of the operational control testing requirements listed in 10 CSR 20-9, the permittee shall submit a permit modification application and fee to the Department requesting a deviation from the operational control monitoring requirements. Upon approval of the request, the Department will modify the permit.
8. The permittee shall continue to implement and update if necessary, the program for maintenance and repair of its collection system. The permittee may compare collection system performance results and other data with the benchmarks used in the Departments' Capacity, Management, Operation, And Maintenance (CMOM) Model, located at <https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template>. Additional information regarding the Departments' CMOM Model is available at <https://dnr.mo.gov/print/document-search/pub2574>.
- The permittee shall also submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually, by January 28th, for the previous calendar year. The report shall contain the following information:
- (a) A summary of the efforts to locate and eliminate specific sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
 - (b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
 - (c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.
9. 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 Southeast Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: <https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem> 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.
10. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
11. 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.
12. An all-weather access road to the treatment facility shall be maintained.
13. 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.

14. **Acute Whole Effluent Toxicity (WET)** tests shall be conducted as follows:
- (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
 - i. The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
 - ii. The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
 - (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The laboratory shall not chemically dechlorinate the sample.
 - (e) The Allowable Effluent Concentration (AEC) is 100%; the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
 - (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

E. 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-0138631
 CGCRCSD, FRUITLAND 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: 01/12/2023
 Expiration Date: 06/30/2023

Facility Type and Description: POTW

Influent pump station / influent screening / Sequencing Batch Reactor / post-equalization basin / UV disinfection / aerobic digestion / storage basins / biosolids are land applied by contract hauler.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.65875	Secondary	Domestic

Comments:

Effluent limits were generally established in accordance with the Antidegradation Review sheet; however, the calculated WQBEL for Ammonia as N for October's monthly average was more stringent than the Preferred Effluent Limitations in the Antidegradation Review sheet, and thus Ammonia as N values for this parameter have changed from the most previous permit. See Part II of the Fact Sheet for additional information on effluent limitation derivation.

Special conditions were updated to include the reporting of non-detects and the Electronic Discharge Monitoring Report (eDMR) Submission System. A special condition related to connection to a higher preference authority was removed as CGCRCSD is the highest preference authority in the area. Special conditions related to design requirements established in 10 CSR 20-8, such as for gates and signage, were removed, as this regulation is self-implementing and required to be met prior to the first permit's issuance, and this facility has had no issue demonstrating compliance with these conditions in the past.

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)
Presumed-Use Stream	C	5031	AHP (WWH), WBC-B, SCR, HHP, IRR, LWP	07140107-0508	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):

GRW = Groundwater

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM	LOW-FLOW VALUES (CFS)*		
	1Q10	7Q10	30Q10
Presumed-Use Stream	0.000521	0.000838	0.00129

* Low flow values obtained from USGS StreamStats. <https://streamstats.usgs.gov/ss/>. See **APPENDIX: RECEIVING STREAM LOW-FLOW VALUES.**

MIXING CONSIDERATIONS

Mixing Zone: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

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

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 does not discharge to a 303(d) listed stream or to a stream with an EPA approved TMDL.
- ✓ The Department has not conducted a stream survey for this waterbody. When a stream survey is conducted, more information may be available about the receiving stream.

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)**. This permit maintains the limits set in the most recent permit for BOD₅ as appropriate for the receiving stream designation of “losing” and the Antidegradation Review. 15 mg/L as a Weekly Average and 10 mg/L as a Monthly Average. Please see attached Antidegradation Review Sheet.
- **Total Suspended Solids (TSS)**. This permit maintains the limits set in the most recent permit for BOD₅ as appropriate for the receiving stream designation of “losing” and the Antidegradation Review. 15 mg/L as a Weekly Average and 10 mg/L as a Monthly Average. Please see attached Antidegradation Review Sheet.
- **Escherichia coli (E. coli)**. Discharges to losing streams shall not exceed 126 per 100 mL as a Daily Maximum at any time, as per 10 CSR 20-7.031(5)(C). Monitoring only for a monthly average. No more than 10% of samples over the course of the calendar year shall exceed 126 #/100 mL daily maximum as per 10 CSR 20-7.015(9)(B)1.G.
- **Total Ammonia Nitrogen**. 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 mixing considerations allowed; therefore, WLA = appropriate criterion.

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:

$$C_e = \frac{(Q_e + Q_s)C - (Q_s \times C_s)}{(Q_e)}$$

Where C = downstream concentration C_e = effluent concentration
Cs = upstream concentration Q_e = effluent flow
Q_s = upstream 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.

Month	Temp (°C)*	pH (SU)*	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
January	2.8	7.8	3.1	12.1
February	4.4	7.8	3.1	12.1
March	9.4	7.9	2.7	10.1
April	16.1	8.0	2.1	8.4
May	21.0	7.8	2.1	12.1
June	26.0	7.9	1.3	10.1
July	29.4	8.0	0.9	8.4
August	29.3	8.0	0.9	8.4
September	25.6	8.0	1.2	8.4
October	19.0	8.0	1.8	8.4
November	12.0	8.0	2.4	8.4
December	6.9	7.9	2.7	10.1

* Ecoregion data (Interior River Valleys and Hills)

January

Chronic WLA:

$$C_e = ((0.65875 + 0.0)3.1 - (0.0 * 0.01))/0.65875 = 3.1 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)12.1 - (0.0 * 0.01))/0.65875 = 12.1 \text{ mg/L}$$

Chronic WLA = AML = **3.1** mg/L

Acute WLA = MDL = **12.1** mg/L

March

Chronic WLA:

$$C_e = ((0.65875 + 0.0)2.7 - (0.0 * 0.01))/0.65875 = 2.7 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)10.1 - (0.0 * 0.01))/0.65875 = 10.1 \text{ mg/L}$$

Chronic WLA = AML = **2.7** mg/L

Acute WLA = MDL = **10.1** mg/L

May

Chronic WLA:

$$C_e = ((0.65875 + 0.0)2.1 - (0.0 * 0.01))/0.65875 = 2.1 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)12.1 - (0.0 * 0.01))/0.65875 = 12.1 \text{ mg/L}$$

Chronic WLA = AML = **2.1** mg/L

Acute WLA = MDL = **12.1** mg/L

July

Chronic WLA:

$$C_e = ((0.65875 + 0.0)0.9 - (0.0 * 0.01))/0.65875 = 0.9 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)8.4 - (0.0 * 0.01))/0.65875 = 8.4 \text{ mg/L}$$

Chronic WLA = AML = **0.9** mg/L

Acute WLA = MDL = **8.4** mg/L

September

Chronic WLA:

February

Chronic WLA:

$$C_e = ((0.65875 + 0.0)3.1 - (0.0 * 0.01))/0.65875 = 3.1 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)12.1 - (0.0 * 0.01))/0.65875 = 12.1 \text{ mg/L}$$

Chronic WLA = AML = **3.1** mg/L

Acute WLA = MDL = **12.1** mg/L

April

Chronic WLA:

$$C_e = ((0.65875 + 0.0)2.1 - (0.0 * 0.01))/0.65875 = 2.1 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)8.4 - (0.0 * 0.01))/0.65875 = 8.4 \text{ mg/L}$$

Chronic WLA = AML = **2.1** mg/L

Acute WLA = MDL = **8.4** mg/L

June

Chronic WLA:

$$C_e = ((0.65875 + 0.0)1.3 - (0.0 * 0.01))/0.65875 = 1.3 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)10.1 - (0.0 * 0.01))/0.65875 = 10.1 \text{ mg/L}$$

Chronic WLA = AML = **1.3** mg/L

Acute WLA = MDL = **10.1** mg/L

August

Chronic WLA:

$$C_e = ((0.65875 + 0.0)0.9 - (0.0 * 0.01))/0.65875 = 0.9 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)8.4 - (0.0 * 0.01))/0.65875 = 8.4 \text{ mg/L}$$

Chronic WLA = AML = **0.9** mg/L

Acute WLA = MDL = **8.4** mg/L

October

Chronic WLA:

$$C_e = ((0.65875 + 0.0)1.2 - (0.0 * 0.01))/0.65875 = 1.2 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)8.4 - (0.0 * 0.01))/0.65875 = 8.4 \text{ mg/L}$$

Chronic WLA = AML = **1.2** mg/L

Acute WLA = MDL = **8.4** mg/L

November

Chronic WLA:

$$C_e = ((0.65875 + 0.0)2.4 - (0.0 * 0.01))/0.65875 = 2.4 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)8.4 - (0.0 * 0.01))/0.65875 = 8.4 \text{ mg/L}$$

Chronic WLA = AML = **2.4** mg/L

Acute WLA = MDL = **8.4** mg/L

$$C_e = ((0.65875 + 0.0)1.8 - (0.0 * 0.01))/0.65875 = 1.8 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)8.4 - (0.0 * 0.01))/0.65875 = 8.4 \text{ mg/L}$$

Chronic WLA = AML = **1.8** mg/L

Acute WLA = MDL = **8.4** mg/L

December

Chronic WLA:

$$C_e = ((0.65875 + 0.0)2.7 - (0.0 * 0.01))/0.65875 = 2.7 \text{ mg/L}$$

Acute WLA:

$$C_e = ((0.65875 + 0.0)10.1 - (0.0 * 0.01))/0.65875 = 10.1 \text{ mg/L}$$

Chronic WLA = AML = **2.7** mg/L

Acute WLA = MDL = **10.1** mg/L

Applicant supplied an alternative analysis-based preferred alternative effluent limit of 0.6 mg/L (AML) for summer and 2.1 mg/L (AML) for winter for preferred alternative treatment (see Antidegradation Review in the Appendix). A daily maximum of 1.7 mg/L for summer and 5.6 mg/L for winter were used based on 2013 ammonia criteria. Proposed effluent limits are more stringent than water quality based effluent limits calculated below for each month outside of October's monthly average. As the calculated WQBEL for October's monthly average is the only value more stringent than the values established in the Antidegradation Review, the Antidegradation Review's Preferred Effluent Limits have been applied for all months outside of October. October's daily maximum will be established based on the Preferred Effluent Limits, while the monthly average will be based on the derived WQBEL.

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **pH.** 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU.
- **Biochemical Oxygen Demand (BOD₅) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD₅ and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for BOD₅.
- **Total Suspended Solids (TSS) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD₅ and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity.** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards as the facility failed to report on this parameter during the previous permit cycle.
 - ✓ Acute Allowable Effluent Concentrations (AECs) for facilities that discharge to Class C streams [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Sampling Frequency Justification: 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 weekly per 10 CSR 20-7.015(9)(D)7.C.

WET Test Sampling Frequency Justification. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Acute Whole Effluent Toxicity

- ✓ No less than ONCE/PERMIT CYCLE:
 - Municipality with a design flow $\geq 22,500$ gpd, but less than 1.0 MGD.

Sampling Type Justification: As per 10 CSR 20-7.015, samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, *E. coli*, and Oil & Grease in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

PERMITTED FEATURE INF – INFLUENT MONITORING

The monitoring requirements established in the below Monitoring Requirements 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 the monitoring requirements listed in this table.

Influent Parameters

- **Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS).** An influent sample is required to determine the removal efficiency. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD₅ and TSS for Publicly Owned Treatment Works (POTWs)/municipals.
- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia.** Influent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia required per 10 CSR 20-7.015(9)(D)8.

Sampling Frequency Justification: The sampling and reporting frequencies for Total Phosphorus and Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia parameters were established to match the required sampling frequency of these parameters in the effluent, per 10 CSR 20-7.015(9)(D)8. The sampling and reporting frequencies for influent BOD₅ and TSS have been established to match the required sampling frequency of these parameters in the effluent.

Sampling Type Justification: Sample types for influent parameters were established to match the required sampling type of these parameters in the effluent. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

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. This facility has never before been inspected; however, 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) Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state. Please see (D) above as justification is the same.
- (F) There shall be no significant human health hazard from incidental contact with the water. 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) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. 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:

As 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.

- ✓ The facility discharges to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)], and is an existing facility. The facility underwent an alternative evaluation during the approval of construction which determined alternative options to be unacceptable for environmental and/or economic reasons.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(o); 40 CFR Part 122.44(l)] 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.
 - 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:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], for domestic wastewater discharge with new, altered, or expanding discharges, the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See <https://dnr.mo.gov/document-search/antidegradation-implementation-procedure>.

- ✓ 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. An antidegradation review was previously conducted in 2017. See the Antidegradation Review section of the Appendix for additional information.

For stormwater discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ The facility does not have stormwater discharges or the stormwater outfalls onsite have no industrial exposure.

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 has not yet been inspected, so instead this discussion focuses on DMR exceedances. There were several exceedances of the *E. coli* parameter over the previous permit cycle, however the facility has been working closely with Department staff to fix the exceedance issue, as this is a relatively new facility that will require some troubleshooting to optimize. There was one exceedance of TSS and BOD₅ in November 2022. The facility failed to report an Acute WET test value within the permit cycle.

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 municipality per section 502(4) of the Clean Water Act, and therefore a Level 3 Authority. There is no approved Clean Water Act Section 208 plan in Cape Girardeau County. The applicant has shown that:
 - A higher level authority is not available to the facility as there are no Level 1 or 2 continuing authorities in the area.

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: <https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692>. 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 does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

OPERATOR CERTIFICATION REQUIREMENTS:

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems with population equivalents greater than 200 and are owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and state or federal agencies.

- ✓ This facility is required to have a certified operator as it has a population equivalent greater than 200 and is 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.

This facility currently requires a chief operator with a C Certification Level. Please see **Appendix - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Brian Strickland
 Certification Number: 10147
 Certification Level: WW-A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

OPERATIONAL CONTROL TESTING:

Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publicly owned treatment works and privately owned facilities regulated by the Public Service Commission to conduct internal operational control monitoring to further ensure proper operation of the facility and to be a safeguard or early warning for potential plant upsets that could affect effluent quality. This requirement is only applicable if the publicly owned treatment works and privately owned facilities regulated by the Public Service Commission has a calculated Population Equivalent greater than two hundred (200).

10 CSR 20-9.010(3) allows the Department to modify the monitoring frequency required in the rule based upon the Department's judgement of monitoring needs for process control at the specified facility.

- ✓ As per [10 CSR 20-9.010(4)], the facility is required to conduct operational monitoring. These operational monitoring reports are to be submitted to the Department along with the MSOP discharge monitoring reports.
 - The facility is a mechanical plant and is required to conduct operational control monitoring as follows:

Operational Monitoring Parameter	Frequency
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)
Temperature – Mixed Liquor (sample contact and reaeration basins for contact stabilization)	Daily (M-F)
Dissolved Oxygen – Aerobic Digester	Daily (M-F)
UV disinfection	Daily (M-F)

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 Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

✓ 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.

✓ An RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS**. The only value derived from the RPA that is being applied to this permit is the monthly average value for October, as the Preferred Effluent Limitations established in the Antidegradation Review are more stringent than WQBELs for all daily maxes and all monthly averages outside of October's monthly average.

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 (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

- ✓ Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

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

Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(12)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

- ✓ At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at <https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template>. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at <https://dnr.mo.gov/print/document-search/pub2574>. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study that may result in site-specific criteria or alternative effluent limits. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015 the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

✓ This permit does not contain an SOC.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:

In accordance with [10 CSR 20-6.010(6)(A)], the Department may grant approval of a permittee's Sewer Extension Authority Supervised Program. These approved permittees regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility. The permittee shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. See <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater/construction-engineering>.

✓ The permittee does not have a Department approved Sewer Extension Authority Supervised Program.

VARIANCE:

As 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.

✓ 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:

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

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

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:

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

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

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.

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A) and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(J)2.A & B are being met. Under [10 CSR 20-6.010(8)(B)], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility that exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

✓ The permittee is required to conduct WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (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 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, 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 permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (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.

✓ 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 determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

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:

In accordance with section 644.058, RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

- ✓ 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 April 28, 2023 and ended May 29, 2023. One comment was received which warranted the removal of a special condition requiring expanded effluent testing, as expanded effluent testing is only required for facilities with a design flow of greater than 1 MGD.

DATE OF FACT SHEET: MARCH 14, 2023

COMPLETED BY:

**JESSICA VITALE, ENVIRONMENTAL PROGRAM ANALYST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 522-2575
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

Item	Points Possible	Points Assigned
Maximum Population Equivalent (P.E.) served , peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	
Effluent Discharge		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, lake or reservoir area supporting whole body contact recreation	3	3
Direct reuse or recycle of effluent	6	
Land Application/Irrigation		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
Variation in Raw Wastes (highest level only)		
Variations do not exceed those normally or typically expected	0	0
Reoccurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2	
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	
Plant pumping of main flow	3	3
Flow equalization	5	
Primary Treatment		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	4	
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	
Activated sludge (including aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film	10	
Biological, physical, or chemical	12	
Carbon regeneration	4	
Total from page ONE (1)	----	24

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	
Disinfection		
Chlorination or comparable	5	
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	
UV light	4	4
Required Laboratory Control Performed by Plant Personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	3
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page TWO (2)	----	13
Total from page ONE (1)	---	24
Grand Total	---	37

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Ammonia as N – Summer (mg/L)	8.4	1.90	1.0	1.90	6.00	0.5/0.0299999993294477	0.60	3.80	YES
Ammonia as N – Winter (mg/L)	8.4	2.77	2.2	2.77	4.00	0.589999973773956/0.0299999993294477	0.60	4.70	YES

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

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.

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

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 µg/L and is to report a Daily Maximum and Monthly Average.

Day 1 = Non-Detect or <9.0 µg/L
Day 2 = Non-Detect or <9.0 µg/L
Day 3 = Non-Detect or <9.0 µg/L
Day 4 = Non-Detect or <9.0 µg/L
Day 5 = Non-Detect or <9.0 µg/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.

$$(9 + 9 + 9 + 9 + 9) \div 5 \text{ (number of samples)} = <9 \text{ µg/L.}$$

The Permittee reports a Monthly Average of <9.0 µg/L (retain the ‘less than’ symbol) and a Daily Maximum of <9.0 µg/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 µg/L and the remaining two tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/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.

$$(4 + 4 + 6 + 6) \div 4 \text{ (number of samples)} = <5 \text{ µg/L. (Monthly)}$$

The facility reports a Monthly Average of <5.0 µg/L and a Weekly Average of <6.0 µg/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 µg/L and the remaining three tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <6.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/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 µg/L. (Monthly)
 $(4 + 6) \div 2$ (number of samples) = <5 µg/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 µg/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 µg/L.

Week 1 = 12 µg/L
Week 2 = 52 µg/L
Week 3 = Non-Detect or <10 µg/L
Week 4 = 133 µg/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) = $197 \div 4 = 49.3$ µg/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 $(102)(400)(0.5)(15)(0.5) = 5$ th root of 153,000 = 10.9 #/100mL.
The 7 day Geometric Mean = 2nd root of $(400)(0.5) = 2$ nd 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)

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
Engineering Section

Water Quality and Antidegradation Review

*For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
Tributary of Cane Creek*

by

***Cape Girardeau County Reorganized Common Sewer District
(CGCRCSD), Fruitland Wastewater Treatment Facility***



January 2017

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1. FACILITY INFORMATION

FACILITY NAME: CGCRCSD Fruitland Wastewater Treatment Facility NPDES #: NEW FACILITY

FACILITY TYPE: POTW – Residential Subdivision and Commercial Property

FACILITY DESCRIPTION: The CGCRCSD Fruitland WWTF will combine over 500 individual sites as well as 27 facilities to serve approximately 817 existing residences, 38 businesses, two schools within the district, and projected population growth for Cape Girardeau County. As a result of the submitted alternative analysis, the applicant's preferred alternative is a sequencing batch reactor (SBR) process requiring a network of gravity and force mains with lift stations, influent screening, multiple redundant treatment basins for equalizing wet weather flow, effluent UV disinfection, and waste sludge lagoons for aerobic digestion. The design flow will be 0.425 MGD.

COUNTY: Cape Girardeau UTM COORDINATES: X=796654 / Y=4149699
 12- DIGIT HUC: 07140107-0508 LEGAL DESCRIPTION: SW¼, SE ¼, Section 18, T 32N, R 13E
Ozark/Upper St.
 EDU*: Francis/Castor ECOREGION: Ozark Border

* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised July 13, 2016, a facility is required to use *Missouri's Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

No history for this facility or enforcement information. Fruitland Meat, LLC is currently under enforcement for discharging while being a no discharge facility. No receiving water information. This facility does not discharge to a 303(d) or 305(b) listed waterbody.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.66	Secondary	Tributary to Cane Creek (losing)	0.0

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Tributary to Cane Creek (losing) (8-20-13 MUDD V1.0)	C	3960	0.0	0.0	0.1	AQL, IRR, LWV, WBC(B), HHP,SCR, General Criteria

** Irrigation (IRR), Livestock & Wildlife Protection (LWP), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

RECEIVING WATER BODY SEGMENT #1: Tributary to Cane Creek (losing)
 Upper end segment* UTM coordinates: X=796654/ Y=4149699 (Outfall)
 Lower end segment* UTM coordinates: X= 795799/ Y=4149371 (Confluence with Cane Creek)

*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. GENERAL COMMENTS

Horner & Shifrin, Inc. prepared, on behalf of Cape Girardeau County Reorganized Common Sewer District (CGCRCSD), the *Antidegradation Report Proposed Fruitland Wastewater Treatment Facility for Cape Girardeau County Reorganized Common Sewer District* dated July 25, 2016. Applicant elected to assume that all pollutants of concern (POC) are significantly degrading the

receiving stream in the absence of existing water quality data. An alternative analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix D was used to develop this review document.

A Geohydrological Evaluation was submitted with the request and the receiving stream is losing for discharge purposes (Appendix A: Map).

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; Indiana bats (*Myotis Sodalis*, federal- and state-listed endangered) and Northern long-eared bats (*Myotis septentrionalis*, federal-listed threatened hibernate near the project location (Appendix B). The project location is also within range of the Gray Bat (*Myotis grisescens*, federal- and state-listed endangered). The applicant should follow recommendations given in the Natural Heritage Review (Appendix B) and if any trees need to be removed should contact the U.S. Fish and Wildlife Service for further coordination under the Endangered Species Act.

5. ANTIDegradation REVIEW INFORMATION

The following is a review of the *Antidegradation Report Proposed Fruitland Wastewater Treatment Facility for Cape Girardeau County Reorganized Common Sewer District* dated July 25, 2016.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix C), Pollutants of concern are defined as those pollutants “proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge.” (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix C).

Table 1. Pollutants of Concern and Tier Determination

POLLUTANTS OF CONCERN	TIER*	DEGRADATION	COMMENT
BOD ₅ /DO	2	Significant	
Total Suspended Solids (TSS)	**	Significant	
pH	***	Significant	Permit Limits Applied
<i>Escherichia coli</i> (<i>E. coli</i>)	2	Significant	
Oil and Grease	2	Significant	Permit Limits Applied
Ammonia as N	2	Significant	
Total Nitrogen	**		
Total Phosphorus	**		

*Tier assumed.

** Tier determination not possible. No in-stream standards for these parameters.

*** Standards for these parameters are ranges

The following Antidegradation Review Summary attachments in Appendix C were used by the applicant:

For pollutants of concern, the attachments are:

Attachment A, Tier 2 with significant degradation.

5.2. EXISTING WATER QUALITY

No existing water quality data was submitted. All POCs with in-stream standards were considered to be Tier 2 and significantly degrading in the absence of existing water quality.

5.3. NO DISCHARGE EVALUATION

According to 10 CSR 20-6.010 (4)(D), reports for the purpose of constructing a wastewater treatment facility shall consider the feasibility of constructing and operating a no discharge facility. Because Missouri’s antidegradation implementation procedures specify that if the proposed activity results in significant degradation, then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Part of that analysis as shown below is the non-degrading or no discharge evaluation. See Section 5.4.1 discussion for the regionalization alternative.

The first non-discharging alternative was optimization of the current decentralized system. This option does not address the current problems with the existing on-site septic systems. Three systems the District owns and two more within the District have compliance schedules; more systems are expected to be placed on compliance schedules within the next few years which could cost the District up

to five million dollars to upgrade. Additionally, there is very little land around the existing treatment plants for upgrades. With the cost of a centralized system that eliminated the on-site septic systems being closer to 2.6 million dollars, the option of optimizing the decentralized system is deemed infeasible.

The second non-discharging alternative was land application. This option would include building a non-discharge retention basin. The worst-case scenario would require 295 acres for land application and multiple landowners, which complicates this alternative. The most likely scenario would involve buying the land for land application, and land is being sold in the area at \$7,500/acre up to \$10,000/acre. This option is deemed infeasible due to poor economic feasibility.

See the example calculation that has been provided in a review.

5.4. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required.

Six alternatives from non-degrading to less degrading to degrading alternatives were evaluated. The non-degrading alternatives included optimization of the decentralized systems currently existing within the District, land application, and regional treatment. All non-degrading alternatives were eliminated as impracticable. See section 5.3 for the discussion of non-discharging options. The regionalization treatment option was also eliminated. See section 5.4.1 for discussion of the regional treatment option.

The first degrading alternative, the Aeromod Activated Sludge process includes a typical nitrification/denitrification process that combines secondary treatment, clarification, and aerobic digestion.

The second degrading alternative, the Sequencing Batch Reactor (SBR) process, includes the construction of a new collection system along with the new treatment facility. This option will require a network of gravity and force mains with lift stations, influent screening, multiple redundant treatment basins capable of equalizing wet weather flow, effluent UV disinfection, and waste sludge lagoons equipped with mechanical surface aerators for aerobic digestion. The treatment basins to be used for equalization will be sloped bottom concrete basins. The SBR will meet effluents limits for all pollutants of concern. It will be capable of handling population growth. This is a technology that is established, and this is the community's preferred treatment option.

The third degrading alternative is the Advanced SBR and Tertiary Treatment, which provides advanced biological nutrient removal to significantly reduce the total nitrogen and phosphorus levels. Additional ORP, ammonia, nitrate, and phosphate sensors as well as a more advanced control system are added to the SBR process. Tertiary treatment can be used to reduce TSS, BOD and TP effluent levels by use of a tertiary disk filter.

Only those alternatives that were considered practicable were included in the economic efficiency analysis. This analysis showed that the return on environmental benefits with increasing cost of treatment did not justify more expenditure beyond the base case treatment alternative (see Appendix C, Attachment A). The Sequencing Batch Reactor treatment plant was the preferred alternative based on this analysis.

TABLE 2: ALTERNATIVES ANALYSIS COMPARISON

	Alternative 1- Aeromod Activated Sludge	Alternative 2- Sequencing Batch Reactor Treatment Plant	Alternative 3- Advanced SBR with Tertiary Treatment
BOD (mg/L)	10	10	5
TSS (mg/L)	15	15	5
Ammonia (s/w) (mg/L)	0.6/2.1	0.6 / 2.1	0.6/2.1
<i>E. Coli</i>	126#/100 mL	126#/100 mL	126#/100 mL
Practical	Y	Y	Y
Economical	Y	Y	N
Life Cycle Cost*	\$13,304,000	\$13,304,000	\$15,795,000
Ratio	100%	100%	119%

* Life cycle cost at 33 year design life and 1.4% interest

5.4.1 REGIONALIZATION ALTERNATIVE

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional waste water collection system is mentioned. The applicant provided discussion of this alternative. The alternative analysis mentions the City of Jackson as the regional authority.

CGCRCSD discussed regionalization with the City of Jackson; however, the City of Jackson opted not to take the discharge from the new facility due to it being outside of city limits (see Appendix D).

NEEDS A WAIVER TO PREVENT CONFLICT WITH AREA WIDE MANAGEMENT PLAN APPROVED UNDER SECTION 208 OF THE CLEAN WATER ACT AND/OR UNDER 10 CSR 20-6.010(3) (B) 1 OR 2 CONTINUING AUTHORITIES? (Y OR N) N

5.4.2 LOSING STREAM ALTERNATIVE DISCHARGE LOCATION

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

The discharge is received by a losing stream segment of the Tributary to Cane Creek. The Tributary to Cane Creek becomes gaining 1000 feet downstream of the discharge point. CGCRCSD Fruitland facility has also considered Tributary to Hubble Creek as an alternative discharge point. The Tributary to Hubble Creek does not have losing segments within two miles and would be a potential discharge point for the CGCRCSD Fruitland WWTF. However, the current discharge location was chosen based on the centralized location and favorable hydraulics. Relocating the discharge or facility itself to a gaining stream segment would minimize hydraulic favorability of the collection system and treatment facility as well as increase the cost for tunneling underneath interstate highway I-55. Therefore, relocation of the facility or discharge location has been deemed infeasible.

5.4.3 SOCIAL AND ECONOMIC IMPORTANCE EVALUATION

The applicant first identified the community that will be affected by the proposed degradation of water quality. The affected community is likely within an 8-mile radius from the discharge site. Secondly, a number of relevant factors were identified including affordable housing, needed growth, increased land value and tax base, and environmental factors. Within a Social and Economic Benefits section each factor was evaluated. Appendix C, Attachment A: Tier 2 with Significant Degradation form contains a summary of this information.

The project that the Cape Girardeau County reorganized Common Sewer District proposes will be a benefit to its community. This proposal will be removing 500 plus individual sites and 20 smaller existing facilities, which will eliminate the maintenance for those systems and reduce environmental impacts from those sites. The project will be reducing loads on streams into which existing facilities are discharging. There is very little room around existing facilities for major upgrades or expansions. This project will prevent the need to locate new equipment off site from the existing facilities due to upgrades. The new centralized system will reduce the number of operators required and result in a significantly smaller operational cost. The centralization of these systems will reduce the number of systems in non-compliance by five, three of which the district currently owns. The proposed system will be able to handle the projected population growth for Cape Girardeau County and its potential discharges. There is a severe geologic limitations rating and a moderate collapse potential rating compelling CGCRCSD to use concrete basins for the flow equalization basins for the centralized system.

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a

comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

7. MIXING CONSIDERATIONS

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

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

$$A.E.C. \% = \left(\frac{DesignFlow + ZIDFlow}{DesignFlow} \right) \times 100 = \left(\frac{0.425 + 0.0}{0.425} \right) \times 100 = 100\%$$

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION
STUDY CONDUCTED (Y OR N):

 N

USE ATTAINABILITY
ANALYSIS CONDUCTED (Y OR N):

 Y

WHOLE BODY CONTACT
USE RETAINED (Y OR N):

 Y

OUTFALL #001

WET TEST (Y OR N): Y

FREQUENCY: ONCE/PERMIT CYCLE AEC: 100% METHOD: MULTIPLE

TABLE 3. EFFLUENT LIMITS OUTFALL 001

PARAMETER	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	BASIS FOR LIMIT (NOTE 2)	MONITORING FREQUENCY
FLOW	MGD	*		*	FSR	ONCE/WEEK
BIOCHEMICAL OXYGEN DEMAND ₅ ***	MG/L	15		10	FSR	ONCE/MONTH
TOTAL SUSPENDED SOLIDS	MG/L	15		10	PEL	ONCE/MONTH
PH	SU	6.5–9.0		6.5–9.0	FSR	ONCE/MONTH
AMMONIA AS N (APR 1 – SEPT 30)	MG/L	1.7		0.6	PEL	ONCE/MONTH
AMMONIA AS N (OCT 1 – MAR 31)	MG/L	5.6		2.1	PEL	ONCE/MONTH
<i>ESCHERICHIA COLIFORM (E. COLI)</i>	NOTE 1	126**		126**	FSR	ONCE/WEEK
WET TESTING	TU	*			FSR	ONCE/PERMIT CYCLE
OIL AND GREASE	MG/L	15		10	FSR	ONCE/MONTH
TOTAL NITROGEN	MG/L	*		*	FSR	ONCE/QUARTER
TOTAL PHOSPHORUS	MG/L	*		*	FSR	ONCE/QUARTER

NOTE 1 – COLONIES/100 ML

NOTE 2– WATER QUALITY-BASED EFFLUENT LIMITATION – WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT –MDEL; OR PREFERRED ALTERNATIVE EFFLUENT LIMIT – PEL; OR TECHNOLOGY-BASED EFFLUENT LIMIT – TBEL; OR NO DEGRADATION EFFLUENT LIMIT – NDEL; OR FEDERAL/STATE REGULATION – FSR; OR NOT APPLICABLE – N/A. ALSO, PLEASE SEE SECTION 6.

GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.

* Monitoring requirements only.

** The Monthly Average for *E. coli* shall be reported as a Geometric Mean.

*** This facility is required to meet a removal efficiency of 85% or more for BOD₅ and TSS. Influent BOD₅ and TSS data should be reported to ensure removal efficiency requirements are met.

9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

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

Where C = downstream concentration

C_s = upstream concentration

Q_s = upstream flow

C_e = effluent concentration

Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

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).

2) Alternative Analysis-based – Using the preferred alternative’s treatment capacity for conventional pollutants such as BOD₅ and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA’s “Technical Support Document For Water Quality-based Toxics Control” (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅

and TSS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and TSS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. LIMIT DERIVATION

- **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).** For losing streams, 15 mg/L Weekly Average and 10 mg/L Monthly Average effluent BOD₅ limitations, as per [10 CSR 20-7.015].

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** 15 mg/L Weekly Average and 10 mg/L monthly average. According to EPA, because TSS and BOD are closely correlated, we apply the same limits for TSS as BOD. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **pH.** – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, 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 due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.
- **Total Ammonia Nitrogen.** Applicant supplied an alternative analysis-based preferred alternative effluent limit of 0.6 mg/L (AML) for summer and 2.1 mg/L (AML) for winter for preferred alternative treatment (see Appendix C). A daily maximum of 1.7 mg/L for summer and 5.6 mg/L for winter were used based on 2013 ammonia criteria. Proposed effluent limits are more stringent than water quality based effluent limits calculated below. See Notice to Permittee below.

2013 WATER QUALITY CRITERIA FOR AMMONIA

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails.

2013 EPA Ammonia Criteria:

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this that discharges to a receiving stream with no mixing will be:

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	0.7	3.4
Winter	6	7.8	2.3	13

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.66 + 0.0)0.7 - (0.0 * 0.01))/0.66$
 $C_e = 0.7 \text{ mg/L}$

Acute WLA: $C_e = ((0.66 + 0.0)3.4 - (0.0 * 0.01))/0.66$
 $C_e = 3.4 \text{ mg/L}$

$LTA_c = 0.7 \text{ mg/L} (0.780) = 0.55 \text{ mg/L}$
 $LTA_a = 3.4 \text{ mg/L} (0.321) = 1.09 \text{ mg/L}$

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

Use most protective number of LTA_c or LTA_a .

$MDL = 0.55 \text{ mg/L} (3.11) = 1.7 \text{ mg/L}$
 $AML = 0.55 \text{ mg/L} (1.19) = 0.6 \text{ mg/L}$

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.66 + 0.0)2.3 - (0.0 * 0.01))/0.66$
 $C_e = 2.3 \text{ mg/L}$

Acute WLA: $C_e = ((0.66 + 0.0)13 - (0.0 * 0.01))/0.66$
 $C_e = 13 \text{ mg/L}$

$LTA_c = 2.3 \text{ mg/L} (0.780) = 1.79 \text{ mg/L}$
 $LTA_a = 13 \text{ mg/L} (0.321) = 4.17 \text{ mg/L}$

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

Use most protective number of LTA_c or LTA_a .

$MDL = 1.79 \text{ mg/L} (3.11) = 5.6 \text{ mg/L}$
 $AML = 1.79 \text{ mg/L} (1.19) = 2.1 \text{ mg/L}$

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n =30]

Water Quality Based Effluent Limits:

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 mixing considerations allowed; therefore, WLA = appropriate criterion.

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: $C_e = ((0.66 + 0.0)1.5 - (0.0 * 0.01))/0.66$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.66 + 0.0)12.1 - (0.0 * 0.01))/0.66$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = 1.17 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

[CV = 0.6, 99th Percentile, 30 day avg.]
 [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
 AML = 1.17 mg/L (1.19) = 1.4 mg/L

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n=30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.66 + 0.0)3.1 - (0.0 * 0.01))/0.66$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.66 + 0.0)12.1 - (0.0 * 0.01))/0.66$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.780) = 2.42 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

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

Use most protective number of LTA_c or LTA_a .

MDL = 2.42 mg/L (3.11) = 7.5 mg/L
 AML = 2.42 mg/L (1.19) = 2.9 mg/L

[CV = 0.6, 99th Percentile]
 [CV = 0.6, 95th Percentile, n=30]

Season	Summer		Winter	
	Maximum Daily Limit (mg/L)	Monthly Average (mg/L)	Maximum Daily Limit (mg/L)	Monthly Average (mg/L)
2013 EPA Criteria*	1.7	0.6	5.6	2.1
Existing WQBEL	3.6	1.4	7.5	2.9

*Preferred alternative effluent limits

Notice to Permittee: On August 22, 2013, the Environmental Protection Agency (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, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect aquatic life in water.

The Water Protection Program (WPP) is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The Department has begun discussions about how these new criteria will be implemented. WPP is suggesting that all permittees consider the lower ammonia criteria and adjust the alternative analysis or proposed alternative's treatment design, if they so choose. Consideration of the future ammonia criteria at this time could avoid a

near-future upgrade. More information about the new ammonia criteria for aquatic life protection may be found at: <http://dnr.mo.gov/pubs/pub2481.htm>.

The facility selected a treatment technology that meets the economic efficiency and practicability evaluations under the alternatives analysis. In addition, the selected technology could meet the proposed 2013 EPA Ammonia criteria (see Notice to Permittee below). The facility elected to build a treatment plant that meets the expected criteria and that provides a high level of treatment to potentially reduce the need to upgrade in the near future. See Appendix C for the preferred alternative effluent limits.

- ***Escherichia coli (E. coli)***. Discharges to losing streams shall not exceed 126 per 100 mL as a Daily Maximum at any time, as per 10 CSR 20-7.031(5)(C). Monitoring only for a monthly average. No more than 10% of samples over the course of the calendar year shall exceed 126#/100 mL Daily Maximum as per CSR 20-7.015(9)(B)1.G. Additional information is not applicable.

For losing streams with a design flow capacity of greater than 100,000 gpd, effluent limitations for losing streams are 126 colonies per 100 ml monthly average and 126 colonies per 100 ml maximum daily.

Weekly monitoring is required at all times with compliance to be determined by *E. coli* water quality standards established in section (5)(C.) of 10 CSR 7.031 and the effluent rule short time limits in 10 CSR 20-7.015 (9)(B)1.E. Please see Section 6. GENERAL ASSUMPTIONS OF THE WQAR #7.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity**. Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.
- **Oil & Grease**. Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

NUTRIENTS

- **Total Phosphorus and Total Nitrogen**. Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Once per quarter sampling for one permit cycle or up to 5 years if permit cycle is less than 5 years.

11. ANTIDegradation REVIEW PRELIMINARY DETERMINATION

The proposed new facility discharge, CGCRCSD WWTF, 0.425 MGD is assumed to result in significant degradation of the segment identified in Tributary to Cane Creek. The Aeromod Activated Sludge and standard Sequencing Batch Reactor alternatives were determined to be the base case technologies (lowest cost alternative that meets technology limitations). The cost effectiveness of the other technologies were evaluated, and the new centralized wastewater collection system with a standard Sequencing Batch Reactor treatment facility was found to be cost effective and was determined to be the preferred alternative.

It has also been determined that the other treatment options presented (Aeromod Activated Sludge, land application, and regionalization) may also be considered reasonable alternatives provided that the Aeromod Activated Sludge alternative is designed to be capable of meeting the effluent limitations developed based on the preferred alternative. If any of these options are selected, you may proceed with the appropriate facility plan, construction permit application, or other future submittals without the need to modify this Antidegradation review document.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Sonali Siriwardana
Date: 01/2017
Unit Chief: John Rustige, P.E.

Appendix A: Map of Discharge Location: CGCRCSD Fruitland WWTF



Appendix B: Natural Heritage Review

The endangered species nearby the Cape Girardeau County Reorganized Common Sewer District are bats (Gray Myotis), but no caves are near or on the project site.



Missouri Department of Conservation

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

Natural Heritage Review Level Two Report: State Listed Endangered Species and/or Missouri Species/Natural Communities of Conservation Concern

There are records for state-listed Endangered Species, or Missouri Species or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Cape County Reorganized Sewer Antideg #831

User Project Number: 1407110

Project Description: 18N 265894, 4147707, Cane Creek, Cape Girardeau County

Project Type: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Effluent Discharge, New outfall/discharge (e.g., NPDES) to stream

Contact Person: Sean Mickey

Contact Information: scmickey@hornershifrin.com or (314) 335-8867

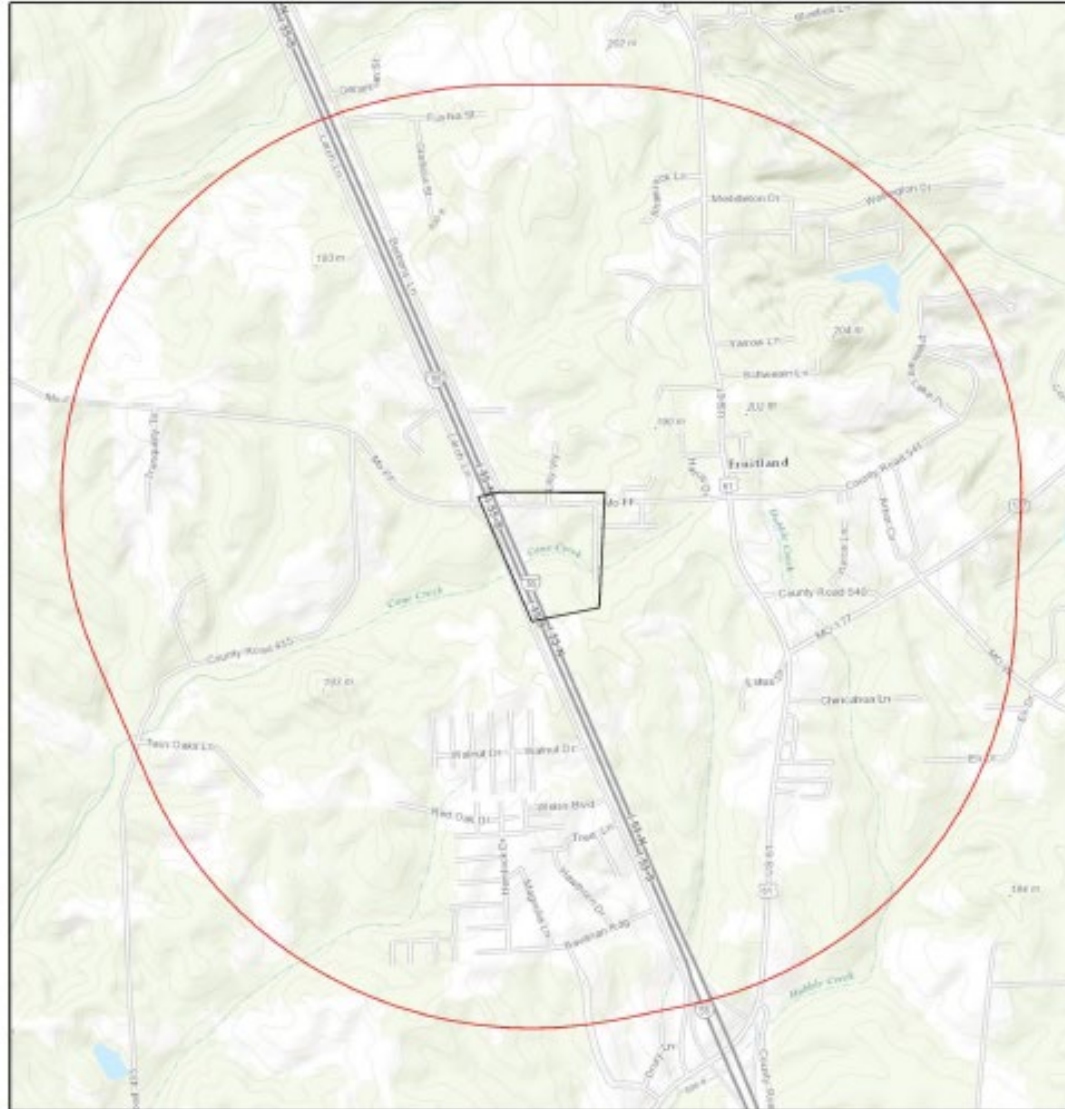
Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

The Natural Heritage Report is not a site clearance letter for the project. It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at <https://ecos.fws.gov/ipac/> for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

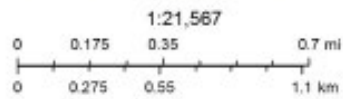
Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-528-4778 or www.modot.mo.gov/ehp/index.htm for additional information on recommendations.

Cape County Reorganized Sewer Antideg



April 19, 2016

- Project Boundary
- Buffered Project Boundary



Source: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox, © OpenStreetMap contributors, and the GIS User Community

Species or Communities of Conservation Concern within the Area:

There are records for state-listed Endangered Species, or Missouri Species or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the Missouri Department of Conservation for further coordination.

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182
NaturalHeritageReview@mdc.mo.gov

Other Special Search Results:

No results have been identified for this project location.

Project Type Recommendations:

Waste Transfer, Treatment, and Disposal - Liquid Effluent Discharge - New or Renewal of Permit. Recommendations to help avoid and minimize impacts to fish, forest and wildlife resources are under development.

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats (*Myotis sodalis*, federal- and state-listed endangered) and Northern long-eared bats (*Myotis septentrionalis*, federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats, especially from September to April. If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132) for further coordination.

The project location submitted and evaluated is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. See <http://mdc.mo.gov/104> for best management recommendations.

Appendix C: Antidegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, Cape Girardeau County Reorganized Common Sewer District.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY FOR PUBLIC NOTICE
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY			
NAME CGCRCSD, Fruitland Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE (573) 837-0588	
ADDRESS (PHYSICAL) Highway FF and I-55	CITY Fruitland	STATE MO	ZIP CODE 63755
2. OWNER			
NAME AND OFFICIAL TITLES Cape Girardeau County Reorganized Common Sewer District			
ADDRESS 113 W. Main St Ste 6	CITY Jackson	STATE MO	ZIP CODE 63755
TELEPHONE NUMBER WITH AREA CODE (573) 837-0588	E-MAIL ADDRESS CGCRCSD@yahoo.com		
3. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf .			
NAME AND OFFICIAL TITLES Cape Girardeau County Reorganized Common Sewer District			
ADDRESS 113 W. Main St Ste 6	CITY Jackson	STATE MO	ZIP CODE 63755
TELEPHONE NUMBER WITH AREA CODE (573) 837-0588	E-MAIL ADDRESS CGCRCSD@yahoo.com		
4. RECEIVING WATER BODY SEGMENT #1			
NAME Unnamed tributary to Cane Creek			
4.1 UPPER END OF SEGMENT (Location of discharge) UTM _____ OR Lat 37.44666 Long 89.64680			
4.2 LOWER END OF SEGMENT UTM _____ OR Lat 37.44417 Long 89.65645			
<small>Per the Missouri Antidegradation Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."</small>			
5. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)			
NAME			
5.1 UPPER END OF SEGMENT UTM _____ OR Lat _____ Long _____			
5.2 LOWER END OF SEGMENT UTM _____ OR Lat _____ Long _____			
6. WET WEATHER ANTICIPATIONS			
If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to the antidegradation review report.			
What is the Wet Weather Flow Peaking Factor in relation to design flow? 3.2			
Wet Weather Design Summary: SBR basins will be sized with redundancy to handle increased influent flow and will adjust aeration time accordingly			

7. EXISTING WATER QUALITY DATA OR MODEL SUMMARY						
<p>Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data approved by the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Watershed Protection Section. Additional information needed with the EWQ data includes: 1) Date existing water quality data was provided by the Watershed Protection Section, 2) Approval date by the Watershed Protection Section of the QAPP, project sampling plan, and data collected for all appropriate POCs.</p>						
Comments/Discussion:						
8. SUMMARY OF THE POLLUTANTS OF CONCERN AND THE PROPOSED EFFLUENT LIMITS						
<p>Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. and assumed or demonstrated to cause significant degradation. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).</p>						
What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:						
Pollutants of Concern*	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit		
BOD5	MG/L		10			
TSS	MG/L		15			
DISSOLVED OXYGEN	MG/L					
AMMONIA	MG/L		0.6 (summer); 2.1 (winter)	1.7 (summer); 5.6 (winter)		
BACTERIA (E. COLI)	CFUS		126			
Oil & Grease	mg/L		10	15		
Proposed limits must not violate water quality standards, be protective of beneficial uses, and achieve the highest statutory and regulatory requirements.						
*Assumed Tier 2.						
9. IDENTIFYING ALTERNATIVES						
<p>Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.</p> <p>Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri in their Tier 2 Reviews with alternative analysis must comply with the requirements set forth in the <i>New Technology Definitions and Requirements Factsheet</i> that can be found at: http://dnr.mo.gov/pubs/pub2453.pdf.</p>						
Non-degrading alternatives: Land application, alternate discharge locations, existing facility optimization, regional treatment						
Alternatives ranging from less-degrading to degrading including Preferred Alternative (All treatment levels for POCs must at a minimum meet water quality standards):						
Alternatives	Level of Treatment Attainable for each Pollutant of Concern					
	BOD5 (MG/L)	TSS MG/L	AMMONIA AS N MG/L	TN mg/L	Oil & Grease mg/L	TP mg/L
Aeromod	10	15	0.6	8	10	1
Standard SBR	10	15	0.6	8	10	1
Advanced SBR	5	5	0.6	3	<10	0.1

10. DETERMINATION OF THE REASONABLE ALTERNATIVE
Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. Please do not write "See Report" for any box below.
Practicability Summary: "The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a. Three non-degrading options, optimization of existing facilities, alternate discharge points, and regional sewer collection were deemed impracticable One non-degrading option - land application - and one less degrading option - constructing a new treatment facility - were considered and are included in the evaluation. Three technologies were evaluated for the new treatment facility: An Aeromod plant, a sequencing batch reactor, and an advanced sequencing batch reactor with tertiary treatment.
Economic Efficiency Summary: Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b. The land application option is higher cost, also the sheer land size required for purchase made this option infeasible. Constructing a new treatment facility was the lower cost option, and land and technology availability exist. Both the Aeromod and SBR treatment technology are cost effective and practicable. The Aeromod technology was not identified as non-proprietary as required by Rural Development, however, and so was not able to be funded and therefore eliminated. The advanced SBR and tertiary treatment option greatly exceeds the Water Quality Standards, and adds a significant cost. The basic SBR process can be upgraded in the future with this option to meet future Water Quality Standards when necessary.
Affordability Summary: Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement." The costs associated with constructing a new SBR treatment facility are not economically prohibitive; therefore, an affordability analysis was not deemed necessary.
Preferred Chosen Alternative: Based on the practicability, economic efficiency and affordability the new centralized collection system and standard sequencing batch reactor treatment plant is the preferred chosen alternative for the Cape Girardeau County Reorganized Sewer District
Reasons for Rejecting the other Evaluated Alternatives: The other options were determined to not be economically viable
Comments/Discussion:

11. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE			
<p>If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.</p>			
<p>Identify the affected community: The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located.: Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project." The affected community will be the customers in the Fruitland region currently connected to the 18 treatment systems proposed to be removed, as well as the areas around downstream of the Cane Creek</p>			
<p>Identify relevant factors that characterize the social and economic conditions of the affected community: Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged. This alternative will have no negative socio-economical impacts. Creating a reliable centralized collection and treatment facility will have a positive impact on the community and the environment.</p>			
<p>Describe the important social and economic development associated with the project: Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1. Eliminating the 18 existing facilities will also eliminate the associated discharge violations, improving overall local receiving water body qualities. Keeping the overall treatment centralized to one authority will allow a more continuous focus on the system status</p>			
<p>PROPOSED PROJECT SUMMARY: A new sequencing batch reactor with headworks screening, UV disinfection, and aerobic sludge stabilization basins will be constructed at the facility site. A new centralized sewer collection system will be constructed to connect the existing facilities to be decommissioned.</p>			
<p>Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.</p>			
<p>CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.</p>			
SIGNATURE		DATE	
NAME AND OFFICIAL TITLES / LICENSE # James McCleish, PE, Vice President / 026473MO		COMPANY NAME Horner & Shifrin	
ADDRESS 401 S. 18th St. Ste 400		CITY St Louis	STATE MO
TELEPHONE NUMBER WITH AREA CODE (314) 335-8640		E-MAIL ADDRESS jmcclish@homershifrin.com	
<p>OWNER: I have read and reviewed the prepared documents and agree with this submittal.</p>			
SIGNATURE		DATE	
<p>CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.</p>			
SIGNATURE		DATE	

Appendix D: Letter from City of Jackson

Exhibit D.
City of Jackson Letter



City of Jackson

March 14, 2014

MR BRIAN STRICKLAND
STRICKLAND ENGINEERING LC
113 W MAIN
JACKSON MO 63755

Re: Cape Girardeau County Common Sewer District

Dear Brian:

It was a pleasure meeting with you, Joe Tousignant, and Betty Brooks and learning about the Sewer District's plans.

I presented the two questions that were posed to the City to the Board of Aldermen. The consensus among the Board of Aldermen was that:

1. The City is not interested in getting into the business of treating any sewage from outside of the city limits. Therefore, the City would not be interested in an agreement to treat sewage generated by the Sewer District.

2. The City would request that the southern boundaries of the Sewer District be adjusted so that the area that lies south and east of Highway 61 and south and west of Interstate 55 be excluded from the Sewer District. Stating this another way, this area would consist of an approximately triangular shaped piece of land taking in everything south of the Highway 61/Interstate 55 interchange. The reason for this is that the City has already extended sewer to the MoDOT shed and the natural drainage of this area requires sewage generated in that area to be treated by the City once that area annexes into the City. So there is no mistake, the City is not asking for any area west and north of Highway 61 or east and north of Interstate 55.

Again, it was a pleasure meeting with you. We look forward to a continued good relationship with Cape Girardeau County Common Sewer District.

CITY OF JACKSON, MISSOURI

James D. Roach
City Administrator

APPENDIX: RECEIVING STREAM LOW-FLOW VALUE:

STREAMSTATS OUTPUT REPORT

STATE/REGION ID MO
 WORKSPACE ID MO20230313225222269000
 LATITUDE 37.44655
 LONGITUDE -89.64698
 TIME 3/13/2023 5:52:44 PM

BASIN CHARACTERISTICS

PARAMETER CODE	PARAMETER DESCRIPTION	VALUE	UNIT
DRNAREA	AREA THAT DRAINS TO A POINT ON A STREAM	0.15	SQUARE MILES
STREAM_VARG	STREAMFLOW VARIABILITY INDEX AS DEFINED IN WRIR 02-4068, COMPUTED FROM REGIONAL GRID		
0.51	DIMENSIONLESS		

LOW-FLOW STATISTICS PARAMETERS 100.0 PERCENT LOWFLOW REGION 2 SIR 2013 5090

PARAMETER CODE	PARAMETER NAME	VALUE	UNITS	MIN LIMIT	MAX LIMIT
DRNAREA	DRAINAGE AREA	0.15	SQUARE MILES	0.21	7380
STREAM_VARG	STREAMFLOW VARIABILITY INDEX FROM GRID	0.51	DIMENSIONLESS	0.273	0.926

LOW-FLOW STATISTICS FLOW REPORT 100.0 PERCENT LOWFLOW REGION 2 SIR 2013 5090

STATISTIC	VALUE	UNIT
1 DAY 10 YEAR LOW FLOW	0.000521	FT^3/S
2 DAY 10 YEAR LOW FLOW	0.000602	FT^3/S
3 DAY 10 YEAR LOW FLOW	0.000663	FT^3/S
7 DAY 10 YEAR LOW FLOW	0.000838	FT^3/S
10 DAY 10 YEAR LOW FLOW	0.000932	FT^3/S
30 DAY 10 YEAR LOW FLOW	0.00129	FT^3/S
60 DAY 10 YEAR LOW FLOW	0.00179	FT^3/S

USGS DATA DISCLAIMER: UNLESS OTHERWISE STATED, ALL DATA, METADATA AND RELATED MATERIALS ARE CONSIDERED TO SATISFY THE QUALITY STANDARDS RELATIVE TO THE PURPOSE FOR WHICH THE DATA WERE COLLECTED. ALTHOUGH THESE DATA AND ASSOCIATED METADATA HAVE BEEN REVIEWED FOR ACCURACY AND COMPLETENESS AND APPROVED FOR RELEASE BY THE U.S. GEOLOGICAL SURVEY (USGS), NO WARRANTY EXPRESSED OR IMPLIED IS MADE REGARDING THE DISPLAY OR UTILITY OF THE DATA FOR OTHER PURPOSES, NOR ON ALL COMPUTER SYSTEMS, NOR SHALL THE ACT OF DISTRIBUTION CONSTITUTE ANY SUCH WARRANTY.

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APPLICATION VERSION: 4.13.0
 STREAMSTATS SERVICES VERSION: 1.2.22
 NSS SERVICES VERSION: 2.2.1



STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
 - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.
- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri 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. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittee with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.



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MAY 1, 2013

PART II - SPECIAL CONDITIONS – PUBLICLY OWNED
TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the *General Pretreatment Regulation* 10 CSR 20-6.100, the term Significant Industrial User means:

1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's or for violating any Pretreatment Standard or requirement.

Clean Water Act (CWA) is the the federal Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. (2002).

2. Identification of Industrial Discharges

Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information

Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department

Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
3. For purposes of this paragraph, adequate notice shall include information on:
 - i. the quality and quantity of effluent introduced into the POTW, and
 - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

Missouri Department of Natural Resources
Water Protection Program
Attn: Pretreatment Coordinator
P.O. Box 176
Jefferson City, MO 65102

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PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.
2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Biosolids and Sludge Use and Disposal Practices:
 - a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.
4. Biosolids or Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee's design sludge capacity is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge
5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.
6. This permit does not preclude the enforcement of other applicable environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department may modify a site-specific permit following permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR § 124.10, and 40 CFR § 501.15(a)(2)(ix)(E).
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food, feed or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR Part 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with 40 CFR Part 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limited to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
14. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RSMo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RSMo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – BIOSOLIDS OR SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR BY CONTRACT HAULER

1. Permittees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or, if the ash is determined to be hazardous, with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or sludge must be removed to maintain adequate storage capacity in the facility.
 - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes “Class A” or “Class B” biosolids derived from domestic wastewater to be land applied onto grass land, crop land, timber, or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
 - a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
 - b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
 - c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
 - d. Animal grazing shall not be allowed for 30 days after application of biosolids.
 - e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
 - f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
 - g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
 - h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.
5. Pollutant limits
 - a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
 - b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to achieve pollutant concentration below those identified in Table 1, below.
 - c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

Biosolids ceiling concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

- d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track pollutant loading onto application sites for parameters that have exceeded the low metal concentration limits.

TABLE 2

Biosolids Low Metal Concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

- e. Annual pollutant loading rate.

Table 3

Biosolids Annual Loading Rate	
Pollutant	Kg/ha (lbs./ac) per year
Arsenic	2.0 (1.79)
Cadmium	1.9 (1.70)
Copper	75 (66.94)
Lead	15 (13.39)
Mercury	0.85 (0.76)
Nickel	21 (18.74)
Selenium	5.0 (4.46)
Zinc	140 (124.96)

- f. Cumulative pollutant loading rates.

Table 4

Biosolids Cumulative Pollutant Loading Rate	
Pollutant	Kg/ha (lbs./ac)
Arsenic	41 (37)
Cadmium	39 (35)
Copper	1500 (1339)
Lead	300 (268)
Mercury	17 (15)
Nickel	420 (375)
Selenium	100 (89)
Zinc	2800 (2499)

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
- Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
 - Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
 - The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

- i. PAN can be determined as follows:
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis.
 - ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.
 - iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.
- d. Buffer zones are as follows:
- i. 300 feet of a water supply well, sinkhole, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet of dwellings or public use areas;
 - iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);
 - v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.
 - vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.
- e. Slope limitation for application sites are as follows:
- i. For slopes less than or equal to 6 percent, no rate limitation;
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;
 - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
 - iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.
- f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:
- i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
 - ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
 - iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all sludges and/or biosolids. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6.010 and 10 CSR 20 – 6.015.
3. Biosolids or sludge that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre. Alternative, site-specific application rates may be included in the closure plan for department consideration.
 - i. PAN can be determined as follows:
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are “similar treatment works” under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:
 - a. Testing for metals or fecal coliform is not required.
 - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
 - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200.
7. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

- surface water drainage without creating erosion.
 - b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.
 - c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill, reclamation, or other beneficial use. Other solid wastes must be removed.
8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, biosolids or sludge shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Biosolids or Sludge produced and disposed (Dry Tons per Year)	Monitoring Frequency (See Notes 1, and 2)		
	Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium	Nitrogen TKN, Nitrogen PAN ¹	Priority Pollutants ²
319 or less	1/year	1 per month	1/year
320 to 1650	4/year	1 per month	1/year
1651 to 16,500	6/year	1 per month	1/year
16,501+	12/year	1 per month	1/year

¹Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

² Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pre-treatment program. Monitoring requirements may be modified and incorporated into the operating permit by the Department on a case-by-case basis.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

- 2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. Composite sample must represent various areas at one-foot depth.
- 3. Additional testing may be required in the special conditions or other sections of the permit.
- 4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

- 1. The permittee shall maintain records on file at the facility for at least five years for the items listed in Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
- 2. Reporting period
 - a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
 - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.
- 3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.
- 4. Reports shall be submitted as follows:
Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:

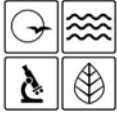
DNR regional or other applicable office listed in the permit (see cover letter of permit)

ATTN: Sludge Coordinator

Reports to EPA must be electronically submitted online via the Central Data Exchange at: <https://cdx.epa.gov/> Additional information is available at: <https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws>

5. Annual report contents. The annual report shall include the following:
 - a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
 - b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
 - c. Gallons and % solids data used to calculate the dry ton amounts.
 - d. Description of any unusual operating conditions.
 - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
 - i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
 - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
 - f. Contract Hauler Activities:

If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
 - g. Land Application Sites:
 - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
 - iii. Report the method used for compliance with pathogen and vector attraction requirements.
 - iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.


 MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM

**FORM B2 – APPLICATION FOR AN OPERATING PERMIT FOR
 FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND
 HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY**

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
JET PAY CONFIRMATION NUMBER	

PART A – BASIC APPLICATION INFORMATION			
1. THIS APPLICATION IS FOR:			
<input type="checkbox"/> An operating permit for a new or unpermitted facility.		Construction Permit # _____	
<input checked="" type="checkbox"/> An operating permit renewal: Permit #MO- <u>0138631</u>		Expiration Date <u>6/30/2023</u>	
<input type="checkbox"/> An operating permit modification: Permit #MO- _____		Reason: _____	
1.1 Is the appropriate fee included with the application (see instructions for appropriate fee)? <input type="checkbox"/> YES <input type="checkbox"/> NO			
2. FACILITY			
NAME CGCRCSD, Fruitland WWTF		TELEPHONE NUMBER WITH AREA CODE 573-837-0588	
ADDRESS (PHYSICAL) 3054 Highway FF	CITY Jackson	STATE MO	ZIP CODE 63755
2.1 LEGAL DESCRIPTION (Facility Site): Sec. 18 , T 32N , R 13W			COUNTY Cape Girardeau
2.2 UTM Coordinates Easting (X): <u>796654</u> Northing (Y): <u>4149699</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)			
2.3 Name of receiving stream: Tributary to Cane Creek			
2.4 Number of Outfalls: 001 wastewater outfalls: 001 stormwater outfalls: _____ instream monitoring sites: 1			
3. OWNER			
NAME Cape Girardeau County Reorganized Common Sewer District		EMAIL ADDRESS president@capecountysewer.c	TELEPHONE NUMBER WITH AREA CODE 573-837-0588
ADDRESS 3054 Highway FF	CITY Jackson	STATE MO	ZIP CODE 63755
3.1 Request review of draft permit prior to Public Notice? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
3.2 Are you a Publically Owned Treatment Works (POTW)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If yes, please attach the Financial Questionnaire. See: https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511			
3.3 Are you a Privately Owned Treatment Facility? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
3.4 Are you a Privately Owned Treatment Facility regulated by the Public Service Commission (PSC)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
4. CONTINUING AUTHORITY			
NAME Same as above		EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
ADDRESS	CITY	STATE	ZIP CODE
CHARTER NUMBER			
If the Continuing Authority is different than the Owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.			
5. OPERATOR			
NAME Brian Strickland		TITLE Engineer	CERTIFICATE NUMBER (IF APPLICABLE) 10147
EMAIL ADDRESS bstrick@stricklandengineering.com		TELEPHONE NUMBER WITH AREA CODE 573-243-4080	
6. FACILITY CONTACT			
NAME Joe Tousignant		TITLE Board Chairman	
EMAIL ADDRESS president@capecountysewer.org		TELEPHONE NUMBER WITH AREA CODE 573-837-0588	
ADDRESS 3054 Highway FF	CITY Jackson	STATE MO	ZIP CODE 63755
FACILITY NAME CGCRCSD, Fruitland WWTF	PERMIT NO. MO- 0138631	OUTFALL NO. 001	

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

FACILITY NAME CGCRCSD, Fruitland WWTF	PERMIT NO. MO- 0138631	OUTFALL NO 001
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PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

7.2 Map. Attach to this application an aerial or topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. A map can be obtained by visiting the following website: <https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce>

- The area surrounding the treatment plant, including all unit processes.
- The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- The actual point of discharge.
- Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, or disposed.

7.3 Number of people presently connected or population equivalent (P.E.): _____ Design P.E. 5,684

7.4 Connections to the facility:
 Number of units presently connected:
 Residential: 815 Commercial: 38 Industrial 1 Other: 10

7.5 Design Flow 425,000 gpd Actual Flow 64,000 gpd (avg July - Sept 2022)

7.6 Will discharge be continuous through the year? Yes No
 Discharge will occur during the following months: Jan. - Dec.
 How many days of the week will discharge occur? 7

7.7 Is industrial wastewater discharged to the facility? Yes No
 If yes, describe the number and types of industries that discharge to your facility. Attach sheets as necessary
 One meat packing and processing facility (SIC #2011), Fruitland American Meat, LLC (formerly MO0130699).

 Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.

7.8 Does the facility accept or process leachate from landfills? Yes No

7.9 Is wastewater land applied? If yes, please attach Form I See: <https://dnr.mo.gov/document-search/form-i-permit-application-operation-wastewater-irrigation-systems-mo-780-1686> Yes No

7.10 Does the facility discharge to a losing stream or sinkhole? Yes No

7.11 Has a wasteload allocation study been completed for this facility? Yes No

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL		
Lab work conducted outside of plant.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Push-button or visual methods for simple test such as pH, settleable solids.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

FACILITY NAME CGCRCSO, Fruitland WWTF		PERMIT NO. MO-0138631		OUTFALL NO. 001	
PART A – BASIC APPLICATION INFORMATION					
9. SLUDGE HANDLING, USE AND DISPOSAL					
9.1 Is the sludge a hazardous waste as defined by 10 CSR 25? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 135 Actual Dry Tons/Year					
9.3 Sludge storage provided: _____ Cubic feet; _____ Days of storage; _____ Average percent solids of sludge; <input type="checkbox"/> No sludge storage is provided. <input type="checkbox"/> Sludge is stored in lagoon.					
9.4 Type of storage: <input type="checkbox"/> Holding Tank <input type="checkbox"/> Building <input checked="" type="checkbox"/> Basin <input type="checkbox"/> Lagoon <input type="checkbox"/> Concrete Pad <input type="checkbox"/> Other (Describe) _____					
9.5 Sludge Treatment: <input type="checkbox"/> Anaerobic Digester <input type="checkbox"/> Storage Tank <input type="checkbox"/> Lime Stabilization <input type="checkbox"/> Lagoon <input checked="" type="checkbox"/> Aerobic Digester <input type="checkbox"/> Air or Heat Drying <input type="checkbox"/> Composting <input type="checkbox"/> Other (Attach Description)					
9.6 Sludge use or disposal: <input type="checkbox"/> Land Application <input checked="" type="checkbox"/> Contract Hauler <input type="checkbox"/> Hauled to Another Treatment Facility <input type="checkbox"/> Solid Waste Landfill <input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) <input type="checkbox"/> Incineration <input type="checkbox"/> Other (Attach Explanation Sheet) _____					
9.7 Person responsible for hauling sludge to disposal facility: <input type="checkbox"/> By Applicant <input checked="" type="checkbox"/> By Others (complete below)					
NAME Metro-Ag Waste, Inc.				EMAIL ADDRESS metroag@metroag.com	
ADDRESS 550 N. 2nd Street		CITY Breese		STATE IL	ZIP CODE 62230
CONTACT PERSON Brian Kramer		TELEPHONE NUMBER WITH AREA CODE 618-526-2341		PERMIT NO. MO-	
9.8 Sludge use or disposal facility: <input type="checkbox"/> By Applicant <input checked="" type="checkbox"/> By Others (Complete below)					
NAME Same as above				EMAIL ADDRESS	
ADDRESS		CITY		STATE	ZIP CODE
CONTACT PERSON		TELEPHONE NUMBER WITH AREA CODE		PERMIT NO. MO-	
9.9 Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain)					
END OF PART A					

FACILITY NAME CGCRCSD, Fruitland WWTF	PERMIT NO. MO- 0138631	OUTFALL NO. 001
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PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Are there any municipal satellite collection systems connected to this facility? Yes No
If yes, please list all connected to this facility, contact phone number and length of each collection system

FACILITY	CONTACT PHONE NUMBER	LENGTH OF SYSTEM (FEET OR MILES)

10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) 19 miles

10.3 Does significant infiltration occur in the collection system? Yes No
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

11. BYPASSING

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes No
If yes, explain:

12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of the contractor?
 Yes No
If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)

NAME

MAILING ADDRESS

TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
---------------------------------	---------------

RESPONSIBILITIES OF CONTRACTOR

13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

Provide information about any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses for each.
 The CGCRCSD, Fruitland WWTF is operational and discharging. The contractor finished the collection system connections to homes, businesses, and smaller wastewater treatment facilities in December 2022. The Fruitland WWTF should now receive the majority of its flow.

FACILITY NAME CGCRCSD, Fruitland WWTF	PERMIT NO. MO- 0138631	OUTFALL NO. 001
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PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data **for each outfall through which effluent is discharged**. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcd91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8

Outfall Number 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	7.4	S.U.		S.U.	5, Sept 2022
pH (Maximum)	8.1	S.U.		S.U.	5, Sept 2022
Flow Rate	0.100233	MGD	0.079190	MGD	30, Sept 2022

*For pH report a minimum and a maximum daily value

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		

Conventional and Nonconventional Compounds

BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD ₅	5	mg/L	3.6	mg/L	4, Sept 2022	SM-2150 B-2016	
	CBOD ₅		mg/L		mg/L			
E. COLI	1	#/100 mL	1	#/100 mL	3, Aug 2022	Colilert-18		1 MPN/100ml
TOTAL SUSPENDED SOLIDS (TSS)	2	mg/L	2	mg/L	4, Sept 2022	SM-2540 D-2011		
TOTAL PHOSPHORUS	4.24	mg/L	3.77	mg/L	3	Lachat10-115-01-1		3.62
TOTAL KJELDAHL NITROGEN	0.13	mg/L	0.13	mg/L	3	Lachat10-107-06-2		0.13
NITRITES + NITRATES	14.2	mg/L	9.0	mg/L	3	Lachat10-107-04-1		8.23
AMMONIA AS N	0.03	mg/L	0.03	mg/L	4, Sept 2022	Lachat10-107-06-1		0.02 mg/L
CHLORINE* (TOTAL RESIDUAL, TRC)		mg/L		mg/L				
DISSOLVED OXYGEN	10.31	mg/L	7.9	mg/L	5, Sept 2022	Hach LDO Method		0.01 mg/L
OIL and GREASE	2.0	mg/L	2.0	mg/L	4, Sept 2022	EPA-1664B		2 mg/L
OTHER: _____		mg/L		mg/L				

*Report only if facility chlorinates

END OF PART B

FACILITY NAME CGCRCSO, Fruitland WWTF	PERMIT NO. MO- 0138631	OUTFALL NO. 001
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PART C – CERTIFICATION

15. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127, National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure a timely, complete, accurate, and nationally-consistent set of data. One of the following options must be checked in order for this application to be considered complete. Visit <https://dnr.mo.gov/env/wpp/edmr.htm> to for information on the department's eDMR system and how to register.

- I will register an account online to participate in the department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before any reporting is due, in compliance with the Electronic Reporting Rule.
- I have already registered an account online to participate in the department's eDMR system through MoGEM.
- I have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.
- The permit I am applying for does not require the submission of discharge monitoring reports.

16. JETPAY

Permit fees may be payed online by credit card or eCheck through a system called JetPay. Use the URL provided to access JetPay and make an online payment.

New Site Specific Permit: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/>
 Construction Permits: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/>
 Modification Fee: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/>

OPTIONAL QUESTIONS REGARDING MILITARY SAERVICE

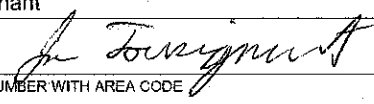
Have you or an immediate family member ever served in the U.S. Armed Forces?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, would you like information about military-related services in Missouri?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

17. CERTIFICATION

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PRINTED NAME Joe Tousignant	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL) Board Chairman
SIGNATURE 	
TELEPHONE NUMBER WITH AREA CODE 573-837-0588	
DATE SIGNED 11/12/23	

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

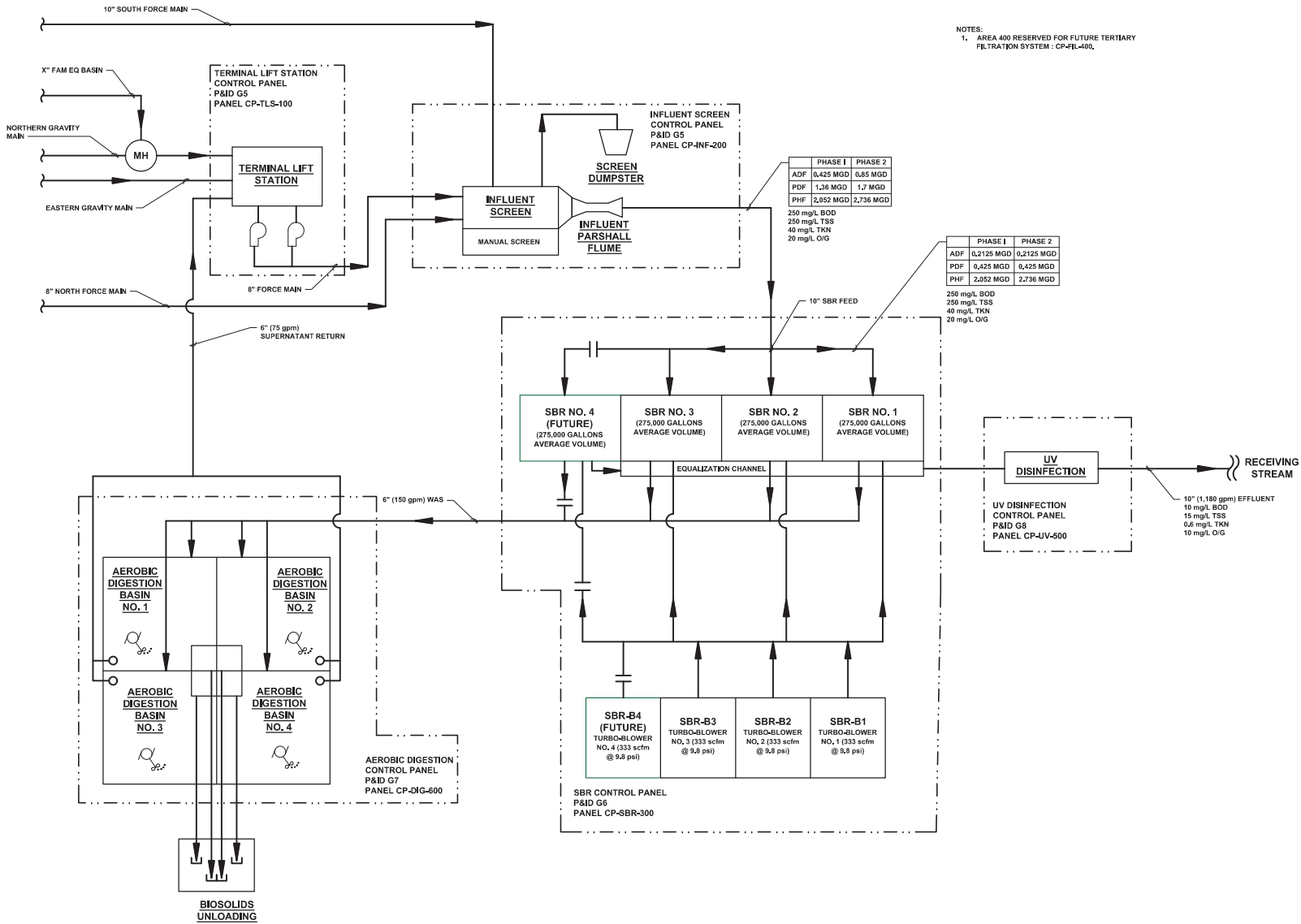
Send Completed Form to

Electronic Submission:	Mail:
PDF Version of the form can be submitted through email to cleanwaterpermits@dnr.mo.gov	Department of Natural Resources Water Protection Program ATTN: NPDES Permits and Engineering Section P.O. Box 176 Jefferson City, MO 65102-0176

**END OF PART C
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH PARTS OF FORM B2 YOU MUST COMPLETE.**

- Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:
1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
 2. Your facility is a pretreatment treatment works.
 3. Your facility is a combined sewer system.

Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.



NOTES:
 1. AREA 400 RESERVED FOR FUTURE TERTIARY FILTRATION SYSTEM : CP-FL-400.

	PHASE 1	PHASE 2
ADF	0,425 MGD	0,85 MGD
PDF	1,36 MGD	1,7 MGD
PHF	2,052 MGD	2,736 MGD
	250 mg/L BOD	
	250 mg/L TSS	
	40 mg/L TKN	
	20 mg/L O/G	

	PHASE 1	PHASE 2
ADF	0,2125 MGD	0,2125 MGD
PDF	0,425 MGD	0,425 MGD
PHF	2,052 MGD	2,736 MGD
	250 mg/L BOD	
	250 mg/L TSS	
	40 mg/L TKN	
	20 mg/L O/G	

PRELIMINARY NOT FOR CONSTRUCTION

STRICKLAND ENGINEERING
 HORNER SHIFRIN

314-843-1423 FAX 314-843-0556 WWW.STRICKLANDENGINEERING.COM
 10101 WILSON ROAD SUITE 100 ST. LOUIS, MO 63143
 DESIGNER: PROFESSIONAL ENGINEERING NO. 000000000
 EXPIRATION DATE: DECEMBER 31, 2017

**CAPE GIRARDEAU COUNTY REORGANIZED COMMON SEWER DISTRICT
 CAPE GIRARDEAU COUNTY, MISSOURI
 WASTEWATER COLLECTION AND TREATMENT SYSTEM PROJECT**

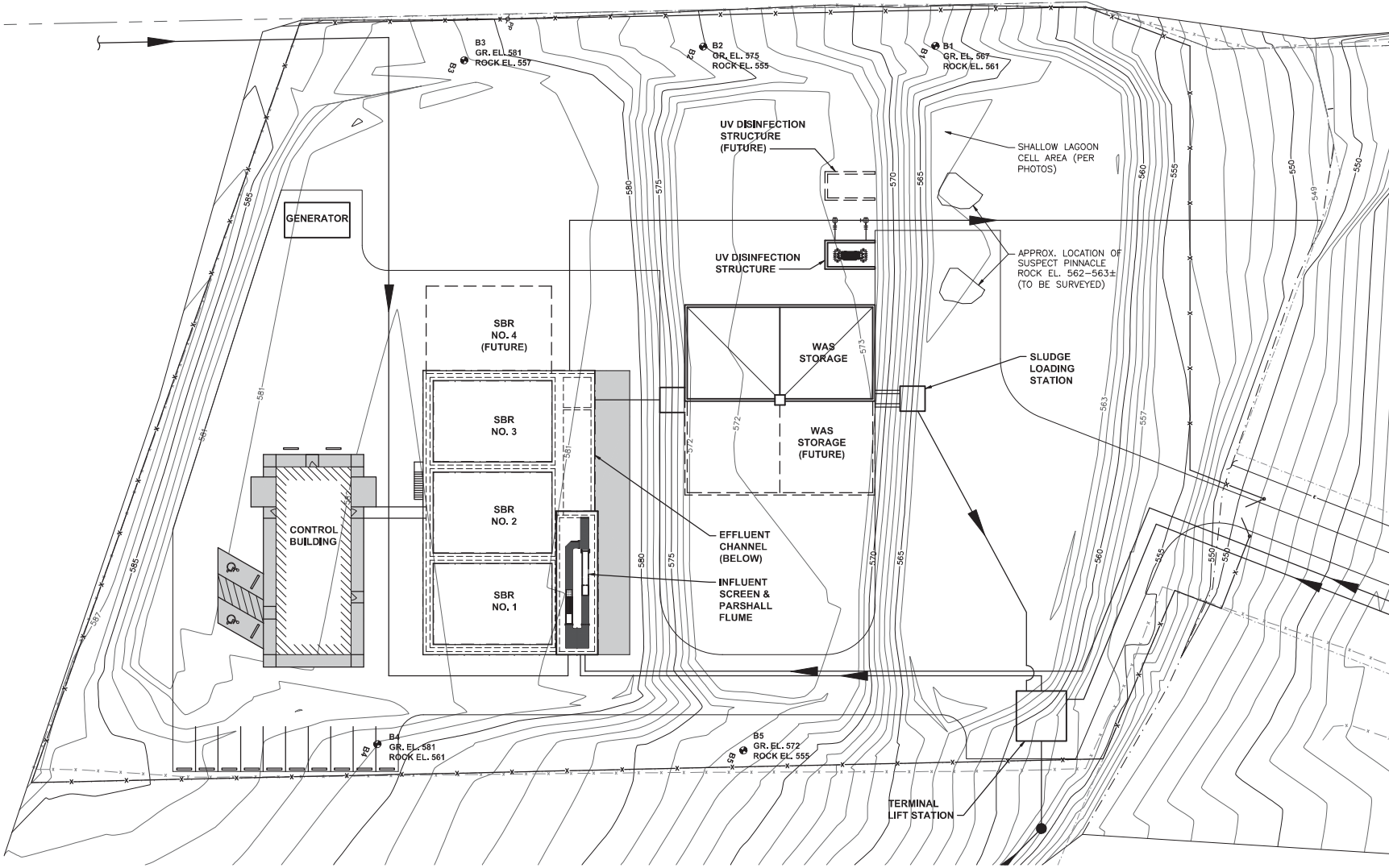
DATE: ---
 DESIGNED: SCM
 DRAWN: BDV
 CHECKED: RCS
 HS JOB NO. 1407100
 SHEET 5 OF VALUE

OPERATION 08/28/2016
 PLOT DATE: 11/13/2017 10:51:11 AM
 PLOT DATE: 10/4/2017 10:52:17 PM
 NAME DATE: 10/6/2016 10:52:17 PM

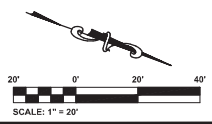
PLANT FLOW DIAGRAM

NO.	DATE	REVISION
A	1/13/2016	75% STRICKLAND SUBMITTAL

I-55 (ROW VARIES)



PLOT DATE: 12/26/17 8:03:39 AM
 DRAWN: J. BRADY
 CHECKED: J. BRADY
 DESIGNED: J. BRADY
 DATE: 01/13/2016
 PROJECT: WWTWP



NO.	DATE	REVISION
A	1/13/2016	75% STRICKLAND SUBMITTAL

PRELIMINARY
NOT FOR CONSTRUCTION

Design: Professional Engineer
 Discipline: Professional Engineering
 License No.: 14237-0001
 Expiration Date: 12/31/2017

STRICKLAND ENGINEERING

HORNER SHIFRAIN

1111 S. W. 11th St., Suite 100
 Cape Girardeau, MO 63703
 Phone: (636) 335-8888
 Fax: (636) 335-8889
 Website: www.stricklandeng.com
 www.horner-shifrain.com

LICENSE NO. 14237-0001
 EXPIRES 12/31/2017

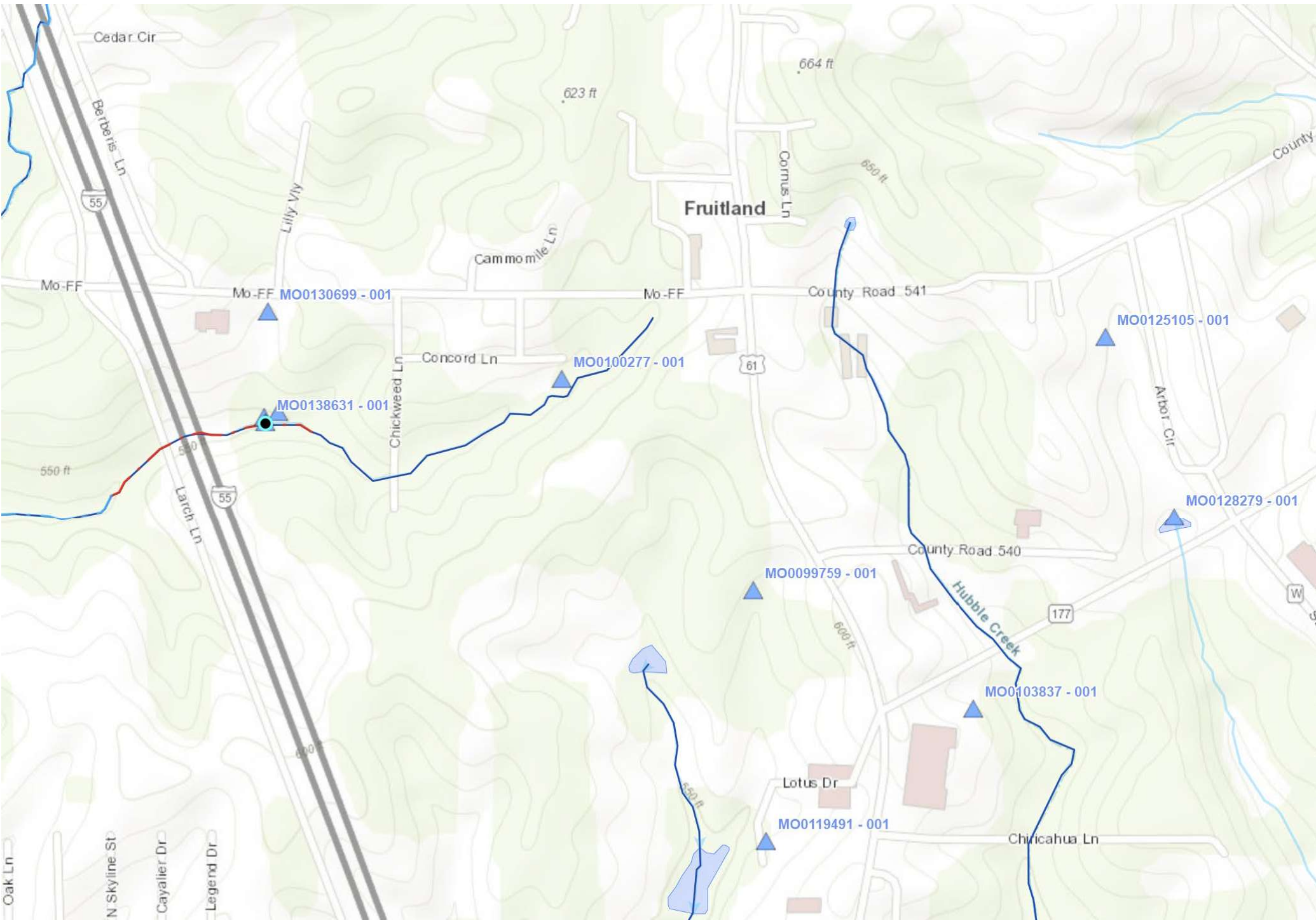
CAPE GIRARDEAU COUNTY REORGANIZED
 COMMON SEWER DISTRICT
 CAPE GIRARDEAU COUNTY, MISSOURI
 WASTEWATER COLLECTION AND
 TREATMENT SYSTEM PROJECT

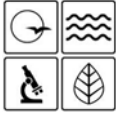
WWTWP SITE PLAN

DATE: 01/13/2016
 DESIGNED: VALUE
 DRAWN: VALUE
 CHECKED: VALUE

HS JOB NO. 1407100
 SHEET -- OF VALUE

C2





**FORM B2 – APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT
RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN
100,000 GALLONS PER DAY**

FACILITY NAME CGCRCSD, Fruitland WWTF	
PERMIT NO. MO-0138631	COUNTY Cape Girardeau
APPLICATION OVERVIEW	
Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.	
BASIC APPLICATION INFORMATION	
<p>A. Basic application information for all applicants. All applicants must complete Part A.</p> <p>B. Additional application information for all applicants. All applicants must complete Part B.</p> <p>C. Certification. All applicants must complete Part C.</p>	
SUPPLEMENTAL APPLICATION INFORMATION	
<p>D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete <i>Part D - Expanded Effluent Testing Data</i>:</p> <ol style="list-style-type: none"> 1. Has a design flow rate greater than or equal to 1 million gallons per day. 2. Is required to have or currently has a pretreatment program. 3. Is otherwise required by the permitting authority to provide the information. <p>E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete <i>Part E - Toxicity Testing Data</i>:</p> <ol style="list-style-type: none"> 1. Has a design flow rate greater than or equal to 1 million gallons per day. 2. Is required to have or currently has a pretreatment program. 3. Is otherwise required by the permitting authority to provide the information. <p>F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete <i>Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes</i>.</p> <p>SIUs are defined as:</p> <ol style="list-style-type: none"> 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N. 2. Any other industrial user that meets one or more of the following: <ol style="list-style-type: none"> i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions). ii. Contributes a process waste stream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the treatment plant. iii. Is designated as an SIU by the control authority. iv. Is otherwise required by the permitting authority to provide the information. <p>G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete <i>Part G - Combined Sewer Systems</i>.</p>	
ALL APPLICANTS MUST COMPLETE PARTS A, B and C	



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
FINANCIAL QUESTIONNAIRE

NOTE ► FINANCIAL INFORMATION THAT IS NOT PROVIDED THROUGH THIS FORM WILL BE OBTAINED BY THE DEPARTMENT FROM READILY AVAILABLE SOURCES.

1. GENERAL INFORMATION

FACILITY NAME CGCRCSD, Fruitland WWTF	PERMIT NUMBER #MO- 0138631
CITY Jackson	COUNTY Cape Girardeau

2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES)

2.1	Number of connections to the facility: Residential <u>815</u> Commercial <u>38</u> Industrial <u>1</u>
2.2	Current sewer user rate (Based on a 5,000 gallon per month usage): \$80.00
2.3	Current annual operating costs for the facility (excludes depreciation):
2.4	Bond rating (if applicable): n/a
2.5	Bonding capacity: No general obligation bonding capacity
2.6	Current outstanding debt relating to wastewater collection and treatment: \$19,269,000
2.7	Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure: \$26.44, interest only at this time
2.8	Attach any relevant financial statements.

3. FINANCIAL INFORMATION REQUIRED FROM MUNICIPALITIES

3.1	Municipality's Full Market Property Value:
3.2	Municipality's Overall Net Debt:
3.3	Municipality's Property Tax Revenues (levied) [A]:
3.4	Municipality's Property Tax Revenues (collected) [B]:
3.5	Municipality's Property Tax Collection Rate ([B]/[A]):

4. FINANCIAL INFORMATION REQUIRED FROM SEWER DISTRICTS

4.1	Total connections to the sewer district: Residential <u>1,560</u> Commercial <u>41</u> Industrial <u>1</u>
4.2	When facilities require upgrades, how are the costs divided? Will the homes connected to the upgraded facility bear the costs? Will the costs be divided across the sewer district? The District has a single rate structure for all customers, so the costs are divided across the entire sewer district.

5. ADDITIONAL CONSIDERATIONS (ALL FACILITIES)

5.1	Provide a list of major infrastructure or other investments in environmental projects. Include project timing and costs and indicate any possible overlap or complications (attach sheets as necessary): The Fruitland WWTF project part 1 & 2 will be completed by June 2023, with part 3, closure of facilities, to occur thereafter, at a cost of approximately \$750,000. We are in the early planning phases of a regionalization project in the Starlight area with a preliminary cost estimate of \$13M. Additional projects will be undertaken as required by the new permits with Schedules of Compliance.
5.2	Provide a list of any other relevant local community economic conditions that may impact the ability to afford new permit requirements (attach sheets as necessary): The District's rate schedule results in an average customer bill that is 2% of Median Household Income, and is at the maximum of what is considered affordable for our customers. The regionalization project in Starlight will require low-interest financing and grants to be affordable, and is an important and necessary step in providing affordable service while eliminating non-complying facilities.

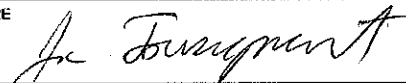
6. CERTIFICATION

FINANCIAL CONTACT Jenny Macke	OFFICIAL TITLE Treasurer
----------------------------------	-----------------------------

EMAIL ADDRESS treasurer@capecountysewer.org	TELEPHONE NUMBER WITH AREA CODE 573-270-1902
--	---

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

OWNER OR AUTHORIZED REPRESENTATIVE Joe Tousignant	OFFICIAL TITLE Board Chairman
--	----------------------------------

SIGNATURE 	DATE SIGNED 1/12/23
--	------------------------

INSTRUCTIONS FOR COMPLETING THE FINANCIAL QUESTIONNAIRE

The Financial Questionnaire is to be completed by municipalities, sewer districts, and water supply districts when filing for renewal of their Missouri State Operating Permit. The Financial Questionnaire is to be submitted as an attachment to *FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY* and *FORM B2: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY*.

1. GENERAL INFORMATION – Provide the name by which the facility is locally known, the Missouri State Operating Permit number, and the city and county where the facility is located.
2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES) – Municipalities, sewer districts, and water supply districts are to complete.
 - 2.1 Self-explanatory.
 - 2.2 Provide the rate that a household would be charged for sewer service if they use 5,000 gallons per month.
 - 2.3 Provide the cost to operate and maintain the wastewater facility annually.
 - 2.4 Bond ratings can be found here: <https://emma.msrb.org/IssuerHomePage/HomepagesForC6?cusip6=795169>.
 - 2.5 General obligation bond capacity allowed by constitution: Cities = up to 20% of taxable tangible property; Sewer districts = up to 5% of taxable tangible property.
 - 2.6 Provide the amount of debt owed on wastewater collection and treatment. Debt information is typically available from your community's annual financial statements
 - 2.7 Provide the amount of a user's monthly sewer bill that is used toward debt owed on wastewater collection and treatment. This may be a percentage or dollar amount.
 - 2.8 Self-explanatory.
3. FINANCIAL INFORMATION REQUIRED FROM MUNICIPALITIES – Municipalities are to complete.
 - 3.1 Full Market Property Value is typically available through your community or state assessor's office.
 - 3.2 Debt information is typically available from your community's annual financial statements.
 - 3.3 Property tax revenues are typically available from your community's annual financial statements. Property tax rates for Missouri communities can be found in the annual auditor's report: <https://app.auditor.mo.gov/AuditReports/AudRpt2.aspx?id=31>.
 - 3.4 Property Taxes Levied = (Real Property Assessed Value) * (Property Tax Rate). This information is typically available through your community or state assessor's office and your community's annual financial statements. Property tax rates for Missouri communities can be found in the annual auditor's report: <https://app.auditor.mo.gov/AuditReports/AudRpt2.aspx?id=31>.
 - 3.5 Property tax collection rate = (Property Tax Revenues) ÷ (Property Taxes Levied).
4. FINANCIAL INFORMATION REQUIRED FROM SEWER DISTRICTS – Sewer Districts and Water Supply Districts are to complete.
 - 4.1-4.2 Self-explanatory.
5. ADDITIONAL CONSIDERATIONS (ALL FACILITIES) – Municipalities, sewer districts, and water supply districts are to complete.
 - 5.1-5.2 Self-explanatory.
6. CERTIFICATION – Provide the name and contact information for the individual who can respond to financial information requests for your community. This form must be signed by your community's "owner" or "authorized representative". The owner for a municipality is either the principal executive officer or ranking elected official.

If there are any questions concerning this form or your Missouri State Operating Permit, contact the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-751-6825.