

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

TIMBER CREEK SEWER COMPANY
Prairie Creek WWTP
18305 Cable Bridge Rd.
Platte City, MO 64079

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

January 28, 2025

Effective Date

December 27, 2027

Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Installation of an activated sludge wastewater treatment facility to increase capacity of an existing treatment facility. Addition will be a third treatment train to be added to two existing treatment trains. Facility to be “two stage sequencing aeration activated sludge with biological nutrient removal”. Existing (headworks) screening, grit chamber; and existing outfall will remain in use. Existing ultraviolet disinfection will be upgraded. Existing sludge belt press will remain in use with sludge disposed in solid waste landfill.

New treatment train includes a pre-aeration selector basin, first and second aeration basins, final clarifier, and aerated sludge digester.

This project will also include general site work appropriate to the scope and purpose of the project. Design flow of facility will increase to 900,000 gallons per day (gpd) and the outfall will remain at the existing location. Discharge is to a Tributary to Prairie Creek in Section 23, T52N, R35W, Platte County.

II. COST ANALYSIS FOR COMPLIANCE

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

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

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.

2. All construction shall be consistent with plans and specifications signed and sealed by Justin Likes, P.E. with TREKK Design Group, LLC, and as described in this permit.
3. The department must be contacted in writing prior to making any changes to the plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).
4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Kansas City Regional Office per 10 CSR 20-7.015(9)(G).
5. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at <https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem>. See <https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting> for more information.
6. A United States Army Corps of Engineers (USACE) Clean Water Act Section 404 Department of the Army permit and a Section 401 Water Quality Certification issued by the department may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied or notification is provided that no Section 404 permit is required by the USACE. You must contact your local USACE district since they determine what waters are jurisdictional and which permitting requirements may apply. You may call the department's Water Protection Program, Operating Permits Section at 573-522-4502 for more information. See <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality> for more information.
7. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - Flood protection shall apply to new construction and to existing facilities undergoing major modification. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100- year flood elevation. 10 CSR 20-8.140 (2) (B)
 - Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 feet. 10 CSR 20-8.140 (2) (C) 1.

- Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140 (2) (D)
- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140 (7) (B)
- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140 (7) (C)
- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140 (7) (D) 1.
- Where a potable water supply is to be used for any purpose in a wastewater treatment facility other than direct connections, a break tank, pressure pump, and pressure tank or a reduced pressure backflow preventer consistent with the department's Public Drinking Water Branch shall be provided. 10 CSR 20-8.140 (7) (D) 3. A.
- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140 (7) (E)
- Effluent twenty-four (24) hour composite automatic sampling equipment shall be provided at all mechanical wastewater treatment facilities and at other facilities where necessary under provisions of the operating permit. 10 CSR 20-8.140 (7) (F)
- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
 - Gratings over appropriate areas of treatment units where access for maintenance is necessary; 10 CSR 20-8.140 (8) (B)
 - First aid equipment; 10 CSR 20-8.140 (8) (C)
 - Posted "No Smoking" signs in hazardous areas; 10 CSR 20-8.140 (8) (D)
 - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140 (8) (E)
 - Portable blower and hose sufficient to ventilate accessed confined spaces; 10 CSR 20-8.140 (8) (F)
 - 10 CSR 20-8.140 (8) (G) Portable lighting equipment complying with NEC requirements. See subsection (7)(B) of this rule;
 - 10 CSR 20-8.140 (8) (H) Gas detectors listed and labeled for use in NEC Class I, Division 1, Group D locations. See subsection (7)(B) of this rule;
 - Appropriately-placed warning signs for slippery areas, non-potable water fixtures (see subparagraph (7)(D)3.B. of this rule), low head clearance areas, open service

- manholes, hazardous chemical storage areas, flammable fuel storage areas, high noise areas, etc.; 10 CSR 20-8.140 (8) (I)
- Ventilation shall include the following:
 - Isolate all pumping stations and wastewater treatment components installed in a building where other equipment or offices are located from the rest of the building by an air-tight partition, provide separate outside entrances, and provide separate and independent fresh air supply; 10 CSR 20-8.140 (8) (J) 1.
 - Force fresh air into enclosed screening device areas or open pits more than four feet deep. 10 CSR 20-8.140 (8) (J) 2.
 - Dampers are not to be used on exhaust or fresh air ducts. Avoid the use of fine screens or other obstructions on exhaust or fresh air ducts to prevent clogging; 10 CSR 20-8.140 (8) (J) 3.
 - Fabricate the fan wheel from non-sparking material. Provide automatic heating and dehumidification equipment in all dry wells and buildings. 10 CSR 20-8.140 (8) (J) 6.
- Explosion-proof electrical equipment, non-sparking tools, gas detectors, and similar devices, in work areas where hazardous conditions may exist, such as digester vaults and other locations where potentially explosive atmospheres of flammable gas or vapor with air may accumulate. 10 CSR 20-8.140 (8) (K)
- Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140 (8) (L)
- Provisions for an arc flash hazard analysis and determination of the flash protection boundary distance and type of PPE to reduce exposure to major electrical hazards shall be in accordance with NFPA 70E *Standard for Electrical Safety in the Workplace* (2018 Edition), as approved and published August 21, 2017. 10 CSR 20-8.140 (8) (M)
- Effective flow splitting devices and control appurtenances (*e.g.* gates and splitter boxes) shall be provided to permit proper proportioning of flow and solids loading to each settling unit, throughout the expected range of flows. 10 CSR 20-8.160 (2) (B)
- Overflow weirs shall be readily adjustable over the life of the structure to correct for differential settlement of the tank. 10 CSR 20-8.160 (3) (C) 1.
- Walls of settling tanks shall extend at least 6 inches above the surrounding ground surface and shall provide not less than 12 inches of freeboard. 10 CSR 20-8.160 (3) (E)
- Safety features shall appropriately include machinery covers, life lines, handrails on all stairways and walkways, and slip resistant surfaces. For additional safety follow the provisions listed in 10 CSR 20-8.140(8). 10 CSR 20-8.160 (5) (A)
- The design shall provide for convenient and safe access to routine maintenance items such as gear boxes, scum removal mechanism, baffles, weirs, inlet stilling baffle areas, and effluent channels. 10 CSR 20-8.160 (5) (B)

- For electrical equipment, fixtures, and controls in enclosed settling basins and scum tanks, where hazardous concentrations of flammable gases or vapors may accumulate, follow the provisions in 10 CSR 20-8.140(7)(B). The fixtures and controls shall be conveniently located and safely accessible for operation and maintenance. 10 CSR 20-8.160 (5) (C)
- Emergency Power. Disinfection and dechlorination processes, when used, shall be provided during all power outages. 10 CSR 20-8.190(2)(A)
- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190(5)(A)1.
- The UV system shall deliver a minimum UV dosage of 30,000 microwatt seconds per centimeters squared ($\mu\text{W} \cdot \text{s}/\text{cm}^2$). 10 CSR 20-8.190(5)(A)4.
- Open channel UV systems. The combination of the total number of banks shall be capable of treating the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190(5)(B)1.
- The UV system must continuously monitor and display at the UV system control panel the following minimum conditions:
 - The relative intensity of each bank or closed vessel system; 10 CSR 20-8.190(5)(C)1.A.
 - The operational status and condition of each bank or closed vessel system; 10 CSR 20-8.190(5)(C)1.B.
 - The ON/OFF status of each lamp in the system; 10 CSR 20-8.190(5)(C)1.C. and
 - The total number of operating hours of each bank or each closed vessel system. 10 CSR 20-8.190(5)(C)1.D.
- The UV system shall include an alarm system. Alarm systems shall comply with 10 CSR 20-8.140(7)(C). 10 CSR 20-8.190(5)(C)2.

8. Upon completion of construction:

- A. TIMBER CREEK SEWER COMPANY will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications; and
- C. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (<https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155>) and request the operating permit modification public noticed on July 3, 2024 be issued. The operating permit modification fee has been paid.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Increase capacity of existing regional wastewater treatment facility. TIMBER CREEK SEWER COMPANY serves an area south of Platte City. Development in the service area necessitates the expansion of the sewage treatment works. This is the planned Phase Three expansion of an anticipated total of six phases.

2. FACILITY DESCRIPTION

The existing facility is an activated sludge treatment facility; including screening, grit removal, secondary clarifiers and ultraviolet disinfection; sludge is processed in aerobic digestors and a sludge press, sludge is disposed at a landfill. The existing facility has a design average flow of 600,000 gpd.

Timber Creek Sewer Company, Prairie Creek Wastewater Treatment Plant is located at 18305 Cable Bridge Rd., Platte City, in Platte County, Missouri. The expanded facility will have a design average flow of 900,000 gpd and a hydraulic population equivalent of 9,000. Facility components are the same as existing. Outfall location remains the same.

3. COMPLIANCE PARAMETERS

Antidegradation review was conducted as part of the planned expansion. The upgraded treatment plant is required to meet the following effluent limitations.

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand ₅	mg/L	20
Total Suspended Solids	mg/L	20
Ammonia as N-summer	mg/L	0.8
Ammonia as N-winter	mg/L	1.8
pH	SU	6.5-9.0
Oil and Grease	mg/L	10
<i>E. coli</i>	#/100mL	206

4. ANTIDEGRADATION

The department has reviewed the antidegradation report for this facility and issued the Water Quality and Antidegradation Review dated September 20, 2022, due to increase in design flow. See APPENDIX – ANTIDEGRADATION.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Installation of an activated sludge wastewater treatment facility to increase capacity of existing treatment facility. Addition will be a third treatment train to be added to two existing treatment trains. Facility to be two stage sequencing aeration activated sludge with biological nutrient removal.

The treatment facility was initially planned to be a 1.5 million gallons per day (MGD) facility constructed in 6 phases. Current facility consists of headworks, 2 treatment trains, disinfection, and sludge handling. When the first phase was installed the Headworks (screening, grit chamber) was installed with the ultimate design flow capacity of 1.5 MGD (peak flows of 6.0 MGD). Similarly, the existing sludge filter press was sized for ultimate capacity. The existing UV disinfection has a peak flow capacity of 0.9 MGD. The design flow of the existing facility is 0.6 MGD.

New Construction

Project adds a third treatment train to two existing treatment trains. New treatment train includes a pre-aeration selector basin, first and second aeration basins, final clarifier, aerated sludge digester and aeration blowers. The design flow of the new train is 0.3 MGD. With the addition of the third train the new Design Flow will be 0.9 MGD.

- **Activated Sludge Treatment.** A two-stage sequencing aeration activated sludge arrangement with biological phosphorous removal and denitrification. Process is an Aeromod, Sequox- Biological Nutrient Removal Process System Design. Three separate basins with aeration strategically sequenced on and off to achieve optimal treatment. Flow follows in order through the three basins then into a clarifier.
- **Anaerobic tank (aka selector tank).** Flow enters from the headworks, approximate volume of 51,612 gallons, 4.1 hrs. of detention at design flow. This tank is sized to be paired with the future Phase 4 treatment train. This tank also receives return activated sludge from clarifiers. Minimal aeration provided.
- **First stage aeration tank.** Approximate volume of 125,664 gallons, 10.1 hours of detention at design flow. Aeration to be sequentially applied in approximate 2-hour intervals in a manner that maximizes treatment, particularly nitrification.
- **Second stage aeration tank.** Approximate volume of 125,660 gallons, 10.1 hours of detention at design flow. Aeration to be sequentially applied in approximate 2-hour intervals in a manner that maximizes treatment.
- **Secondary Clarifier.** A clarifier with a rectangular dimension of 40 ft. by 20 ft. with a surface area of 800 sq. ft. Provides a settling rate of 375 gal/sq. ft. at design flow and a settling rate of 1000 gal/sq. ft. at a peak flow of 0.8 MGD. The outlet is configured with a flow box to only allow a maximum flow of 0.8 MGD. The design peak hourly flow is 1.05 MGD. The overflow weir is equivalent to 74 feet; the peak overflow rate is approximately 10,811 gpd/lf at a peak flow of 0.8 MGD. The solids

loading rate is approximately 34 lbs/day/sq. ft. at peak flow of 1.05 MGD. Design satisfies the requirements of depth, surface loading, solids loading, and overflow rate found at 10 CSR 20-8.160(3).

- **Aeration Equipment.** Two new Inovair IM20 Series 75 H.P blowers, each with a capacity of 1,403 scfm, will be added to existing battery of three blowers. Coarse bubble diffusers to be used throughout the treatment plant.
- **Aerobic Digester.** Aerobic sludge digester with an approximate capacity of 10,850 cu. ft., aeration provided by main blowers. Capacity to treat and hold sludge for a minimum of 31 days.
- **Open Channel Ultraviolet (UV)** – An open channel, gravity flow, low pressure high intensity Trojan UV 3000 Plus disinfection system capable of treating a peak flow of 2.8 MGD while delivering a minimum UV intensity of 30,000 $\mu\text{W}\cdot\text{s}/\text{cm}^2$ with an expected ultraviolet transmissivity of 65 percent or greater. The single, open channel UV system consists of two banks in series with 4 modules per bank and 4 lamps per module. The disinfected effluent will flow by gravity to existing Outfall No. 001
- **Emergency Power** – A standby diesel generator and automatic transfer switch will be provided to operate the treatment facility in event of power failure. Generator is sized at 800 kW.

After construction the design sustainable peak, flow through, capacity of the treatment plant will be 2.25 MGD. The peak hourly flow rate capacity is 2.79 MGD. The design flow rate will be 900,000 gpd. The existing outfall will be used and will remain in the same location.

6. OPERATING PERMIT

Operating permit MO-0126705 will require a modification to reflect the construction activities. The modified Prairie Creek Wastewater Treatment Plant operating permit, MO-0126705, was successfully public noticed from July 3, 2024, to August 3, 2024, with no comments received. Submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued. The operating permit modification fee of \$1,250.00 has been paid.

Operating permit MO-0126705 expires on February 28, 2025. A renewal application was received August 30, 2024. If you have questions regarding the renewal application, please contact the NPDES permitting section at 573-522-4502 or cleanwaterpermits@dnr.mo.gov.

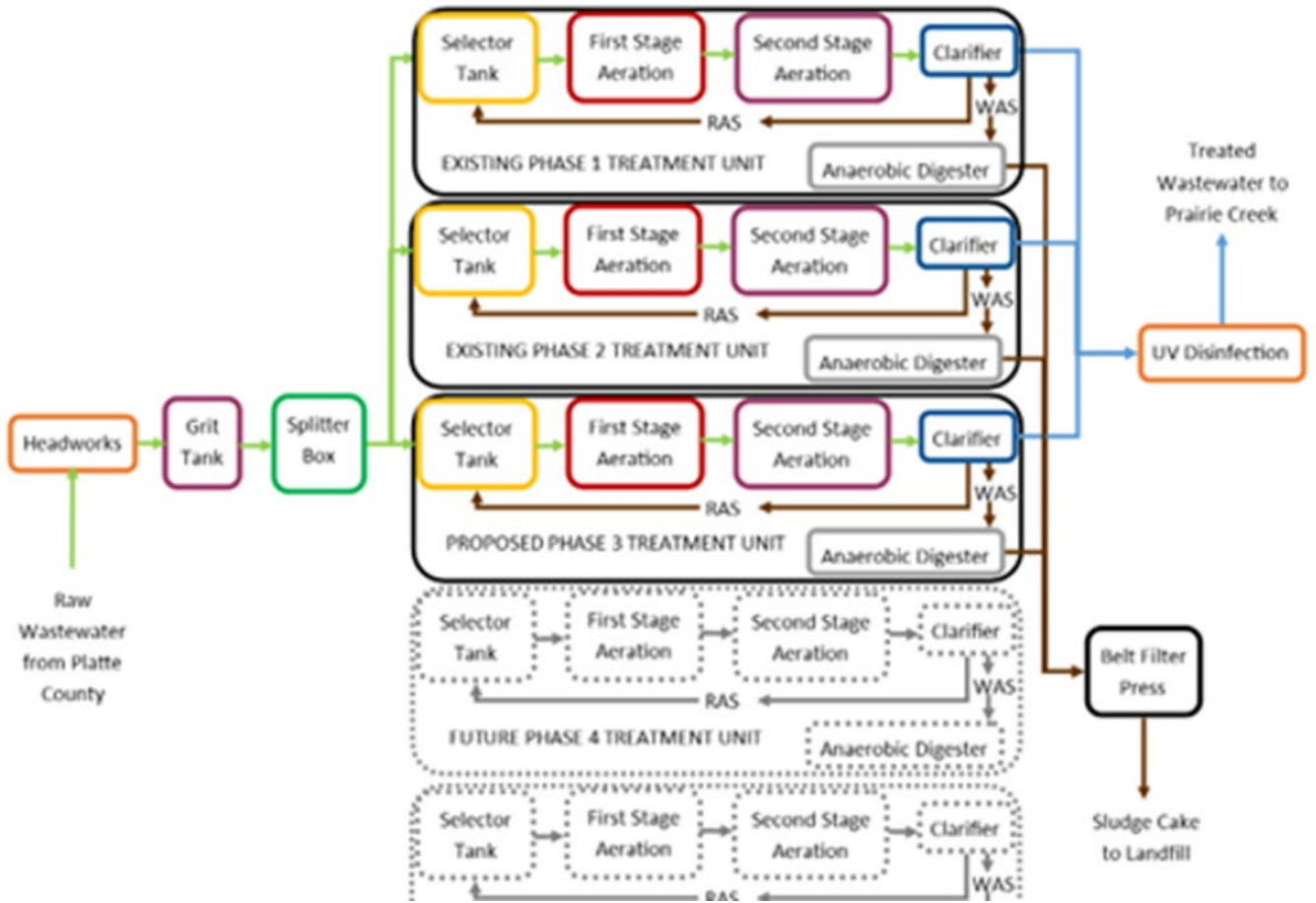
V. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 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>

Andrew Appelbaum, P.E.
Engineering Section
andy.appelbaum@dnr.mo.gov

APPENDIX - PROCESS FLOW DIAGRAM/SITE MAP



APPENDIX

- Antidegradation



Michael L. Parson
Governor

Dru Buntin
Director

September 20, 2022

Kaleb Sherry
General Manager
Timber Creek Sewer Company
P.O. Box 511,
Platte City, MO 64079

RE: Phase 3 Expansion – Prairie Creek Wastewater Treatment Plant, MO-0126705, Water Quality and Antidegradation Review Preliminary Determination, ACT1265, Platte County

Dear Representative:

Enclosed please find the finalized Water Quality and Antidegradation Review (WQAR) for the *Water Quality and Antidegradation Review for Prairie Creek Wastewater Treatment Facility Expansion* received on August 11, 2022. The WQAR contains pertinent antidegradation review information for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Implementation Procedure (AIP)* dated July 13, 2016, U.S. Environmental Protection Agency (US EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources' (department's) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4.

The WQAR identifies a specific treatment technology for the preferred alternative; however, you may pursue construction of a different alternative evaluated during the review that will meet the effluent limits established in the WQAR. If you choose to install a treatment system that is considered a new technology, your construction permit must address the approvability of the design in accordance with the factsheet Approval Process for Innovative Technology available at <https://dnr.mo.gov/document-search/approval-process-innovative-technology-pub2453/pub2453>. With a new technology you will need to work with the construction permit review engineer to ensure equipment is sized properly and that the technology will consistently achieve the proposed effluent limits. The Department encourages the use of new methods and treatment innovations. If you have any questions regarding the new technology factsheet, please contact the engineering section of the Water Protection Program.

Timber Creek Sewer Company
Page 2

You may proceed with submittal of an engineering report/facility plan for this project. Upon completion of that review the next step will be to submit a complete application for a construction permit with an operating permit modification application. These submittals must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited. In addition to one set of paper copies, all materials are to be submitted electronically as well. This is typically done via compact disc or other removable electronic media. If space allows materials may be emailed to DNR_WPPEngineerSection@dnr.mo.gov.

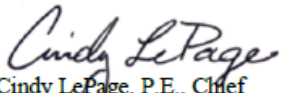
Following the department's public notice of a draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the department will review any public notice comments received. If significant comments are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final.

Following issuance of the construction permit and completion of the actual facility construction, the department will proceed with the issuance of the operating permit.

If you should have questions regarding the enclosed WQAR, please contact Thomas Silkwood by phone at 573-751-7466 by email at thomas.silkwood@dnr.mo.gov or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM



Cindy LePage, P.E., Chief
Engineering Section

CL: tst

c: Adam Black, P.E., TREKK Design Group, LLC

Water Quality and Antidegradation Review

For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to

Prairie Creek
by
Timber Creek Sewer Company
Prairie Creek Wastewater Treatment Plant



September, 2022

Table of Contents

- [1. PERMIT LIMITS AND MONITORING INFORMATION](#)16
- [2. PURPOSE OF ANTIDegradation REVIEW REPORT](#)16
- [3. FACILITY INFORMATION](#)17
- [4. FACILITY HISTORY](#)17
 - [A. FACILITY PERFORMANCE HISTORY:](#)17
 - [B. RECEIVING WATERBODY INFORMATION](#).....17
 - [C. EXISTING WATER QUALITY](#).....18
 - [D. MIXING CONSIDERATIONS](#).....18
- [5. RECEIVING WATER MONITORING REQUIREMENTS](#)18
- [6. ANTIDegradation REVIEW INFORMATION](#)18
 - [A. TIER DETERMINATION](#)19
 - [B. NECESSITY OF DEGRADATION](#)19
 - [C. SOCIAL AND ECONOMIC IMPORTANCE](#).....20
 - [D. NATURAL HERITAGE REVIEW](#).....20
 - [E. DEMONSTRATION OF INSIGNIFICANCE](#)20
- [7. DERIVATION AND DISCUSSION OF PARAMETERS AND LIMITS](#)21
- [8. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW](#)23
- [9. ANTIDegradation REVIEW PRELIMINARY DETERMINATION](#)23
- [10. Appendix A: Map of Discharge Location](#).....24
- [11. Appendix B: Geohydrologic Evaluation](#).....25
- [12. Appendix C: Natural Heritage Review](#)28
- [13. Appendix D: Antidegradation Review Summary Attachments](#)33

PERMIT LIMITS AND MONITORING INFORMATION
 Proposed Monitoring Parameters and Effluent Limits

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
Flow	MGD	FSR	*		*	*/*	once/weekday	once/month	24 hr. total
BOD ₅	mg/L	NDEL		30	20	45/30	once/month	once/month	composite
TSS	mg/L	NDEL		30	20	45/30	once/month	once/month	composite
<i>Escherichia coli</i> **	#/100mL	FSR	1,030		206	1,030/206	once/week	once/month	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	NDEL	3.6 7.0		0.8 1.8	5.4/1.3 10.6/2.7	once/month	once/month	composite
Oil & Grease	mg/L	FSR	15		10	15/10	once/month	once/month	grab
Total Phosphorus	mg/L	FSR	*		*	*/*	once/quarter	once/quarter	composite
Total Kjeldahl Nitrogen	mg/L	FSR	*		*	*/*	once/quarter	once/quarter	composite
Nitrite + Nitrate	mg/L	FSR	*		*	*/*	once/quarter	once/quarter	composite
PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	FSR	6.5		9.0	6.5/9.0	once/month	once/month	grab

* - Monitoring requirement only

** - #/100mL; Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday)

Basis for Limitations Codes:

MDEL – Minimally Degrading Effluent Limit
 NDEL – Non-Degrading Effluent Limit
 PEL – Preferred Effluent Limit

TBEL – Technology-Based Effluent Limit
 WQBEL – Water Quality-Based Effluent Limit

PURPOSE OF ANTIDegradation REVIEW REPORT

The Prairie Creek Wastewater Treatment Plant (WWTP) is a 600,000 gallon per day (gpd) activated sludge plant receiving actual flows of about 400,000 gpd based on Discharge Monitoring Report (DMR) data from the past five years of operation. The facility currently includes screening, a grit chamber, aeration basins, secondary clarifiers, UV disinfection, an aerobic digester, and a sludge belt press. Sludge is ultimately disposed of in a solid waste landfill. TREKK Design Group, LLC prepared, on behalf of the Timber Creek Sewer Company, the *Water Quality and Antidegradation Review for Prairie Creek Wastewater Treatment Facility Expansion*, which proposes to expand the facility to a new design flow of 900,000 gpd in order to accommodate the continued growth of the surrounding area.

The applicant elected to determine that all pollutants of concern (POC) are non-degrading in the receiving stream using the *Antidegradation Review Summary Path A: Tier 2 – Non-Degradation Mass Balance* form. This 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 were used to develop this review document.

FACILITY INFORMATION

Facility Name:	Prairie Creek Wastewater Treatment Plant
Address:	18305 Cable Bridge Rd, Platte City, MO 64079
Permit #:	MO-0126705
County:	Platte
Facility Type:	Domestic Non-POTW
Owner:	Timber Creek Sewer Company
Continuing Authority:	Same as owner
UTM Coordinates:	X = 345488 ; Y = 4352735
Legal Description:	Sec. 23, T52N, R35W
Ecological Drainage Unit:	Central Plains/Nishnabotna/Platte

FACILITY HISTORY

The Prairie Creek WWTP was designed for phased expansion, and this review is triggered by phase 3 of the expansion, which will increase the design flow of the plant to 900,000 gpd. The facility has not been inspected.

FACILITY PERFORMANCE HISTORY:

A review of the past 5 years of Discharge Monitoring Report data show exceedances in the following parameters:

- Total Ammonia as Nitrogen (07/19, 09/21)
- *E. coli* (10/18, 04/19, 10/21)
- Oil & Grease (03/17, 03/19, 09/21)
- pH (10/17, 01/21, 02/21)

RECEIVING WATERBODY INFORMATION

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
001	1.40	Secondary	Domestic

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Prairie Creek	C	313	AQL-WWH, WBC-B, SCR, HHP, IRR, LWW	10240012-0902	0.0
Platte River	P	312	AQL-WWH, DWS, WBC-B, SCR, HHP, IRR, LWW		1.2

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

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Prairie Creek	0.0	0.0	0.0

Receiving Water Body Segment Outfall #1:		
Upper end segment* UTM coordinates:	X = 345488 ; Y = 4352735	outfall
Lower end segment* UTM coordinates:	X = 344833 ; Y = 4352441	downstream confluence

*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.

Geohydrologic Evaluation was submitted with the request and the receiving stream is gaining for discharge purposes (see Appendix B).

EXISTING WATER QUALITY

No existing water quality data was submitted. The facility discharges to Prairie Creek. Prairie Creek confluences with Platte River approximately 1.2 miles downstream of the discharge. Platte River was added to the EPA Approved Section 303(d) Listed Waters in 2010 for *Escherichia coli* from rural nonpoint sources.

MIXING CONSIDERATIONS

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 MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

ANTIDegradation REVIEW 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 department 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 AIP for new and expanded wastewater discharges.

The AIP specifies 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.

The following is a review of the *Water Quality and Antidegradation Review for Prairie Creek Wastewater Treatment Facility Expansion* dated July 20, 2022.

A. TIER DETERMINATION

Waterbodies are assigned Tier 1, 2, or 3 protection levels.

Tier 1 protection is applied to a waterbody on a pollutant by pollutant basis for pollutants may cause or contribute to the impairment of a beneficial use or violation of Water Quality Criteria (WQC); and prohibit further degradation of Existing Water Quality (EWQ) where additional pollutants of concern (POCs) would result in the water being included on the 303(d) List.

Tier 2 level protection is assigned to the waterbody on a pollutant by pollutant basis that prohibits the degradation of water quality of a surface water unless a review of reasonable alternatives and social and economic considerations justifies the degradation in accordance with the methods presented in the AIP.

Tier 3 protection prohibits any degradation of water quality of Outstanding National Resource Waters and Outstanding State Resource Waters as identified in Tables D and E of the Water Quality Standards (WQS). Temporary degradation of water receiving Tier 3 protection may be allowed by the Department on a case-by-case basis as explained in Section VI of the AIP.

Below is a list of POCs reasonably expected and identified by the permittee in their application to be in the discharge. Pollutants of concern are defined as those pollutants “proposed for discharge that affect beneficial use(s) in waters of the state.” They include pollutants that “create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge” (AIP, Page 6).

Pollutants of Concern and Tier Determination

Pollutants of Concern	Tier*	Degradation	Comment
Biological Oxygen Demand (BOD ₅)/DO	2	Insignificant	
Total Suspended Solids (TSS)	**	Insignificant	
Ammonia as N	2	Insignificant	
<i>Escherichia coli (E. coli)</i>	2	N/A	Permit Limits Apply
Oil & Grease	2	N/A	Permit Limits Apply
Phosphorus, Total	2	N/A	Permit Limits Apply
Nitrogen, Total	2	N/A	Permit Limits Apply
pH	***	N/A	Permit Limits Apply

* Tier assumed.

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

*** Standards for these parameters are ranges.

B. NECESSITY OF DEGRADATION

The AIP specifies that if the proposed activity will result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) is required. The proposed activity will result in insignificant degradation and therefore a demonstration of necessity is not required.

C. SOCIAL AND ECONOMIC IMPORTANCE

The AIP specifies that if the proposed activity will result in significant degradation then a demonstration of social and economic importance is required. The proposed activity will result in insignificant degradation and therefore a demonstration of social and economic importance is not required.

D. NATURAL HERITAGE REVIEW

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant. Two species of bats, Indiana and Northern Long-Eared, may be present in the project area. The project location is also within the geographic range of nesting Bald Eagles in Missouri. The following recommendations were made for construction activities:

- Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs
- Avoid degrading stream quality during project activities, and leave snags standing and preserve mature forest canopy when possible
- Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April
- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area
- Drain water from boats and machinery that have operated in water, checking any water reservoirs
- When possible, wash and rinse equipment thoroughly with hard spray or hot water and dry in the sun before using again
- If any trees need to be removed for the project, contact the U.S. Fish and Wildlife Service for coordination under the Endangered Species Act.

E. DEMONSTRATION OF INSIGNIFICANCE

The AIP states that a demonstration of insignificance of the discharge requires the applicant to show a reduction, or maintenance of loading, i.e., no change in ambient water quality concentrations in the receiving waters. As demonstrated in *Water Quality and Antidegradation Review for Prairie Creek Wastewater Treatment Facility Expansion* dated July 20, 2022, the tables below summarize the results of current loading based on the current permit concentrations and proposed loadings based on the proposed permit concentrations.

Net Change in Loadings Based upon Current and Proposed Daily/Weekly Permit Limits.

POLLUTANTS OF CONCERN	CURRENT WEEKLY AVERAGE OR MAXIMUM DAILY LIMIT (MG/L)	PROPOSED WEEKLY AVERAGE OR MAXIMUM DAILY LIMIT (MG/L)	CURRENT LOADING (LBS/DAY)	PROPOSED LOADING (LBS/DAY)	NET CHANGE (LBS/DAY)
BOD ₅	45 (AWL)	30 (AWL)	225.2	225.2	0.0
Total Suspended Solids (TSS)	45 (AWL)	30 (AWL)	225.2	225.2	0.0
Ammonia (Apr 1 – Sep 30)	5.4 (MDL)	3.6 (MDL)	27.0	27.0	0.0
Ammonia (Oct 1 – Mar 31)	10.6 (MDL)	7.0 (MDL)	53.0	52.5	-0.5

*WQBEL=water quality based effluent limit. **See Derivation and Discussion of Limits, Section 10. ***Value is in the current permit, rather than the expired permit. AWL = average weekly limit.

Net Change in Loadings Based upon Current and Proposed Monthly Permit Limits.

POLLUTANTS OF CONCERN	CURRENT MONTHLY AVERAGE LIMIT (MG/L)	PROPOSED MONTHLY AVERAGE LIMIT (MG/L)	CURRENT LOADING (LBS/DAY)	PROPOSED LOADING (LBS/DAY)	NET CHANGE (LBS/DAY)
BOD ₅	30	20	150.1	150.1	0.0
Total Suspended Solids (TSS)	30	20	150.1	150.1	0.0
Ammonia (Apr 1 – Sep 30)	1.3	0.8	6.5	6.0	-0.5
Ammonia (Oct 1 – Mar 31)	2.7	1.8	13.5	13.5	0.0

*WQBEL=water quality based effluent limit. **See Derivation and Discussion of Limits, Section 10. ***Value is in the current permit, rather than the expired permit. AWL = average weekly limit.

DERIVATION AND DISCUSSION OF PARAMETERS AND LIMITS

Wasteload allocations and limits were calculated using two methods:

A. **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) 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).

B. **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).

Note: Significantly-degrading effluent limits have been based on the authority included in Section I.A. 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 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 could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

Outfall #001 – Main Facility Outfall

- **Flow.** Though not limited itself, the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations [40 CFR Part 122.44(i)(1)(ii)]. 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. Influent monitoring has been and will be required for this facility in its Missouri State Operating Permit.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limits of 20 mg/L average monthly and 30 mg/L weekly maximum were established as a result of a mass loading maintenance or reduction demonstration by the applicant. At the existing design flow of 600,000 gpd, the mass loading to the waterbody is 225.2 lbs/day while the proposed loading was calculated to be 225.2 lbs/day at the proposed effluent concentration and increased design flow. These limits are at least as stringent as the minimum effluent regulations established in 10 CSR 20-7.015(8)(A)1.
- **Total Suspended Solids (TSS).** Effluent limits of 20 mg/L average monthly and 30 mg/L weekly maximum were established as a result of a mass loading maintenance or reduction demonstration by the applicant. At the existing design flow of 600,000 gpd, the mass loading to the waterbody is 225.2 lbs/day while the proposed loading was calculated to be 225.2 lbs/day at the proposed effluent concentration and increased design flow. These limits are at least as stringent as the minimum effluent regulations established in 10 CSR 20-7.015(8)(A)1.
- **Escherichia coli (E. coli).** Monthly average of 206 per 100 mL as a geometric mean and daily maximum of 1,030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d). The geometric mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected.
- **Total Ammonia Nitrogen.** Effluent limits of 0.8 mg/L average monthly and 3.6 mg/L daily maximum for summer months (April 1 – September 30), and 1.8 mg/L average monthly and 7.0 mg/L daily maximum for winter months (October 1 – March 31) were established as a result of a mass loading maintenance or reduction demonstration by the applicant. At the existing design flow of 600,000 gpd, the mass loading to the waterbody is 27.0 lbs/day for summer and 53.0 lbs/day for winter, while the proposed loading was calculated to be 27.0 lbs/day for summer and 52.5 lbs/day for winter at the proposed effluent concentration and increased design flow. These limits are at least as stringent as the water quality based effluent limits for total ammonia as nitrogen.
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum
- **Total Phosphorus and Total Nitrogen (Speciated).** Effluent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrite + Nitrate are required per 10 CSR 20-7.015(9)(D)8.
- **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.

GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

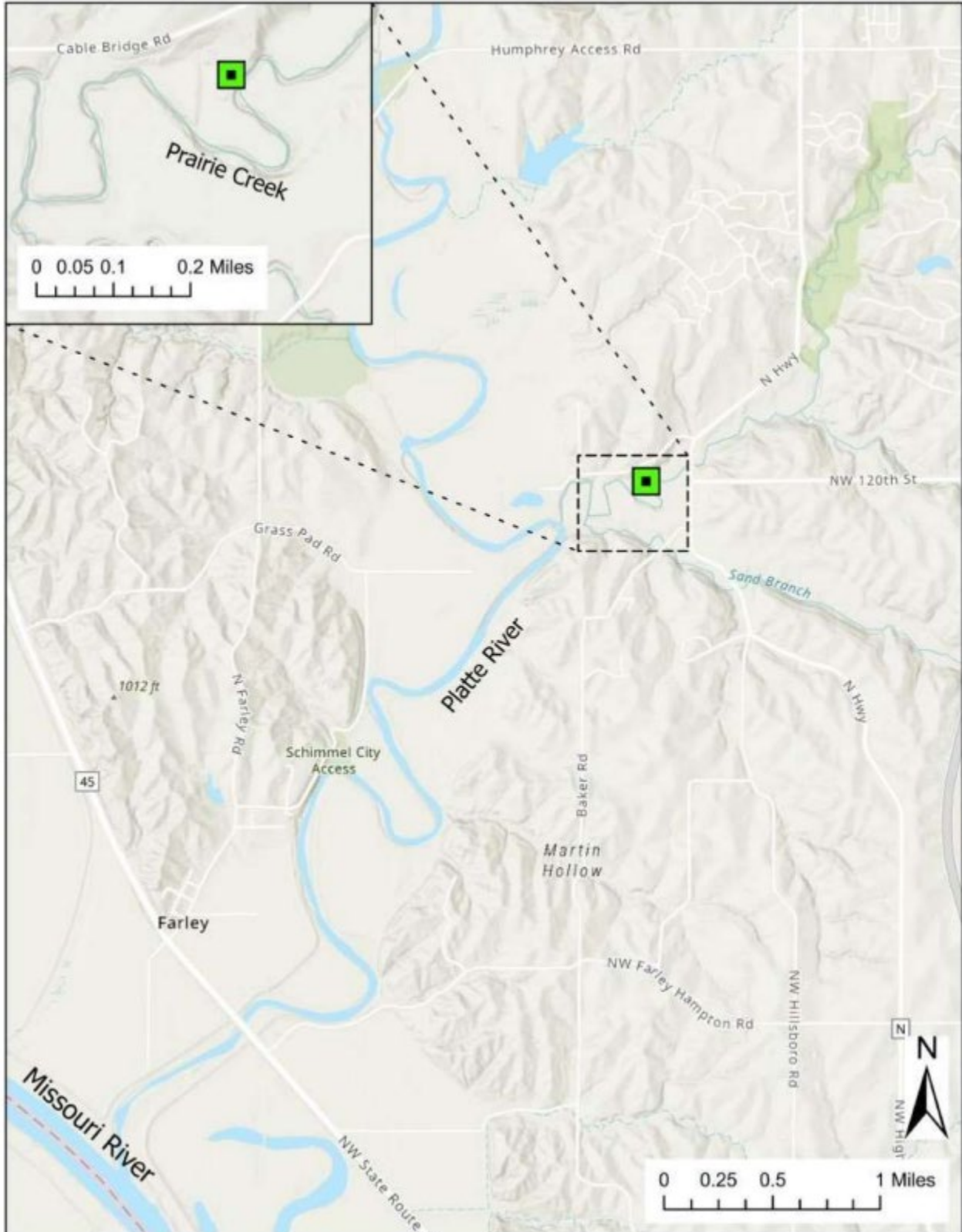
- A. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(2) Continuing Authorities and 10 CSR 20-6.010(4)(A)5.B., consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
- B. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
- C. Changes to Federal and State Regulations (FSR) made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
- D. Effluent limitations derived from FSR may be WQBEL or Effluent Limit Guidelines (ELG).
- E. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
- F. A WQAR does not allow discharges to waters of the State, and shall not be construed as a National Pollution Discharge Elimination System (NPDES) or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
- G. Limitations and other requirements in a WQAR may change as Water Quality Standards (WQS), Methodology, and Implementation procedures change.
- H. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
- I. 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.

ANTIDegradation REVIEW PRELIMINARY DETERMINATION

The proposed facility upgrades will result in insignificant degradation of Prairie Creek. 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. The Department has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Thomas Silkwood
Date: September 2022
Section Chief: Cindy LePage, P.E.

Appendix A: Map of Discharge Location



Appendix B: Geohydrologic Evaluation



Michael L. Parson
Governor

Dru Buntin
Director

LWE22111
Platte County

July 18, 2022

adam black
2137 West Kingsley Street, Suite B
Springfield, MO 65807

RE: Prairie Creek WWTF Upgrade

Dear adam black:

On June 03, 2022, the Missouri Geological Survey received a request to perform a geohydrologic evaluation for the above referenced project located in Platte County. Included with this letter is a report that details the geologic and hydrologic conditions at the site and the potential for groundwater contamination in the event of wastewater treatment failure.

Thank you for the evaluation request. If you are in need of further assistance or have questions regarding the report, please contact our office at P.O Box 250, Rolla, Mo 65402-0250, by telephone at 573-368-2100 or gspeg@dnr.mo.gov.

Sincerely,

MISSOURI GEOLOGICAL SURVEY


A handwritten signature in blue ink that reads "John Corley".


John Corley
Geologist
Environmental Geology Section

c: adam black
WPP
Kansas City Regional Office



07/18/2022

	Missouri Department Of Natural Resources Missouri Geological Survey Geological Survey Program Environmental Geology Section	Project ID Number LWE22111 County Platte County				
Request Details						
Project: Prairie Creek WWTF Upgrade		Legal Description: 23 T52N R35W Quadrangle: PLATTE CITY Latitude: 39 18 36.96 Longitude: -94 47 33.79				
Organization Official Name: adam black Address: 2137 West Kingsley Street, Suite B City: Springfield State: MO Zip: 65807 Phone: 417-840-7535 Email:		Preparer Name: adam black Address: 2137 West Kingsley Street, Suite B City: Springfield State: MO Zip: 65807 Phone: 417-840-7535 Email: ablack@trekkdesigngroup.com				
Project Details						
Report Date: 07/18/2022 Date of Field Visit: 06/09/2022		Previous Reports: Not Applicable				
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> Facility Type <input checked="" type="checkbox"/> Mechanical treatment plant <input type="checkbox"/> Recirculating filter bed <input type="checkbox"/> Land application <input type="checkbox"/> Lagoon or storage basin <input type="checkbox"/> Subsurface soil absorption system <input type="checkbox"/> Lagoon or storage basin W/Land App <input type="checkbox"/> Lagoon or storage basin W/SSAS <input type="checkbox"/> Other type of facility </td> <td style="width: 33%; vertical-align: top;"> Type of Waste <input type="checkbox"/> Animal <input checked="" type="checkbox"/> Human <input type="checkbox"/> Process or industrial <input type="checkbox"/> Leachate <input type="checkbox"/> Other waste type </td> <td style="width: 33%; vertical-align: top;"> Funding Source <input checked="" type="checkbox"/> IWT <input type="checkbox"/> WWL-SRF Additional Information <input type="checkbox"/> Plans were submitted <input type="checkbox"/> Site was investigated by NRCS <input type="checkbox"/> Soil or geotechnical data were submitted </td> </tr> </table>			Facility Type <input checked="" type="checkbox"/> Mechanical treatment plant <input type="checkbox"/> Recirculating filter bed <input type="checkbox"/> Land application <input type="checkbox"/> Lagoon or storage basin <input type="checkbox"/> Subsurface soil absorption system <input type="checkbox"/> Lagoon or storage basin W/Land App <input type="checkbox"/> Lagoon or storage basin W/SSAS <input type="checkbox"/> Other type of facility	Type of Waste <input type="checkbox"/> Animal <input checked="" type="checkbox"/> Human <input type="checkbox"/> Process or industrial <input type="checkbox"/> Leachate <input type="checkbox"/> Other waste type	Funding Source <input checked="" type="checkbox"/> IWT <input type="checkbox"/> WWL-SRF Additional Information <input type="checkbox"/> Plans were submitted <input type="checkbox"/> Site was investigated by NRCS <input type="checkbox"/> Soil or geotechnical data were submitted	
Facility Type <input checked="" type="checkbox"/> Mechanical treatment plant <input type="checkbox"/> Recirculating filter bed <input type="checkbox"/> Land application <input type="checkbox"/> Lagoon or storage basin <input type="checkbox"/> Subsurface soil absorption system <input type="checkbox"/> Lagoon or storage basin W/Land App <input type="checkbox"/> Lagoon or storage basin W/SSAS <input type="checkbox"/> Other type of facility	Type of Waste <input type="checkbox"/> Animal <input checked="" type="checkbox"/> Human <input type="checkbox"/> Process or industrial <input type="checkbox"/> Leachate <input type="checkbox"/> Other waste type	Funding Source <input checked="" type="checkbox"/> IWT <input type="checkbox"/> WWL-SRF Additional Information <input type="checkbox"/> Plans were submitted <input type="checkbox"/> Site was investigated by NRCS <input type="checkbox"/> Soil or geotechnical data were submitted				
Geologic Stream Classification: <input checked="" type="checkbox"/> Gaining <input type="checkbox"/> Losing <input type="checkbox"/> No discharge						
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%; vertical-align: top;"> Overall Geologic Limitations <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe </td> <td style="width: 25%; vertical-align: top;"> Collapse Potential <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe </td> <td style="width: 25%; vertical-align: top;"> Topography <input checked="" type="checkbox"/> <4% <input type="checkbox"/> 4% to 8% <input type="checkbox"/> 8% to 15% <input type="checkbox"/> >15% </td> <td style="width: 25%; vertical-align: top;"> Landscape Position <input type="checkbox"/> Broad uplands <input checked="" type="checkbox"/> Floodplain <input type="checkbox"/> Ridgetop <input checked="" type="checkbox"/> Alluvial plain <input type="checkbox"/> Hillslope <input type="checkbox"/> Terrace <input type="checkbox"/> Narrow ravine <input type="checkbox"/> Sinkhole </td> </tr> </table>			Overall Geologic Limitations <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe	Collapse Potential <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe	Topography <input checked="" type="checkbox"/> <4% <input type="checkbox"/> 4% to 8% <input type="checkbox"/> 8% to 15% <input type="checkbox"/> >15%	Landscape Position <input type="checkbox"/> Broad uplands <input checked="" type="checkbox"/> Floodplain <input type="checkbox"/> Ridgetop <input checked="" type="checkbox"/> Alluvial plain <input type="checkbox"/> Hillslope <input type="checkbox"/> Terrace <input type="checkbox"/> Narrow ravine <input type="checkbox"/> Sinkhole
Overall Geologic Limitations <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe	Collapse Potential <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe	Topography <input checked="" type="checkbox"/> <4% <input type="checkbox"/> 4% to 8% <input type="checkbox"/> 8% to 15% <input type="checkbox"/> >15%	Landscape Position <input type="checkbox"/> Broad uplands <input checked="" type="checkbox"/> Floodplain <input type="checkbox"/> Ridgetop <input checked="" type="checkbox"/> Alluvial plain <input type="checkbox"/> Hillslope <input type="checkbox"/> Terrace <input type="checkbox"/> Narrow ravine <input type="checkbox"/> Sinkhole			
Bedrock: Bedrock consists of alternating layers of Pennsylvanian-age limestones and shales.						
Surficial Materials: Surficial materials at the site consist of moderate to highly permeable silty alluvium.						

 Missouri Department Of Natural Resources Missouri Geological Survey Geological Survey Program Environmental Geology Section		Project ID Number LWE22111 County Platte County
Recommended Construction Procedures for Earthen Facility <input type="checkbox"/> Installation of clay pad and Compaction <input type="checkbox"/> Diversion of subsurface flow <input type="checkbox"/> Artificial sealing <input type="checkbox"/> Rock excavation <input type="checkbox"/> Limit excavation depth	Determine Overburden Properties <input type="checkbox"/> Particle size analysis <input type="checkbox"/> Atterberg limits <input type="checkbox"/> 95% Max. dry density test method <input type="checkbox"/> Overburden thickness <input type="checkbox"/> Permeability coefficient-undisturbed <input type="checkbox"/> Permeability coefficient-remolded	Determine Hydrologic Conditions <input type="checkbox"/> Groundwater elevation <input type="checkbox"/> Direction of groundwater flow <input type="checkbox"/> 25-Year flood level <input checked="" type="checkbox"/> 100-Year flood level

Remarks:

On June 9, 2022, a geologist with the Geological Survey Program performed a geohydrologic evaluation for a proposed mechanical treatment plant expansion/upgrade at the existing Prairie Creek Wastewater Treatment Facility, located approximately 0.22 miles west of Route N and Route D in Platte County, Missouri. The purpose of this evaluation is to evaluate the geologic and hydrologic characteristics of the site and to determine the groundwater contamination potential in the event of treatment failure.

Bedrock was not observed on site, but according to previous geologic mapping, the uppermost bedrock unit that underlies the site consists of alternating layers of Pennsylvanian-age limestones and shales that exhibit an overall low vertical permeability. Surficial materials onsite consist of moderately permeable Quaternary-age silty alluvium, however, lenses of clay, sand, or gravel may exist at depth and would exhibit low to high permeabilities, respectively.

Surface water from the site drains south to Prairie Creek, which is also the receiving stream for the wastewater treatment facility. Prairie Creek exhibits gaining characteristics and has been previously classified as such. The site receives an overall slight geologic limitation rating. In the event of wastewater treatment failure, shallow and local groundwater resources, and surface waters of Prairie Creek, may be adversely impacted. In addition, due to the proximity of the facility to the Platte River, it is recommended to determine the 100-year floodplain prior to construction.

Appendix C: Natural Heritage Review



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 of 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: Prairie Creek Wastewater Treatment Facility #11305

Project Description: Expanding the existing Treatment Plant to increase flow rates by 300,000 gpd.

Project Type: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant, Construction or expansion

Contact Person: Adam Black

Contact Information: ablack@trekkdesigngroup.com or 4178407535

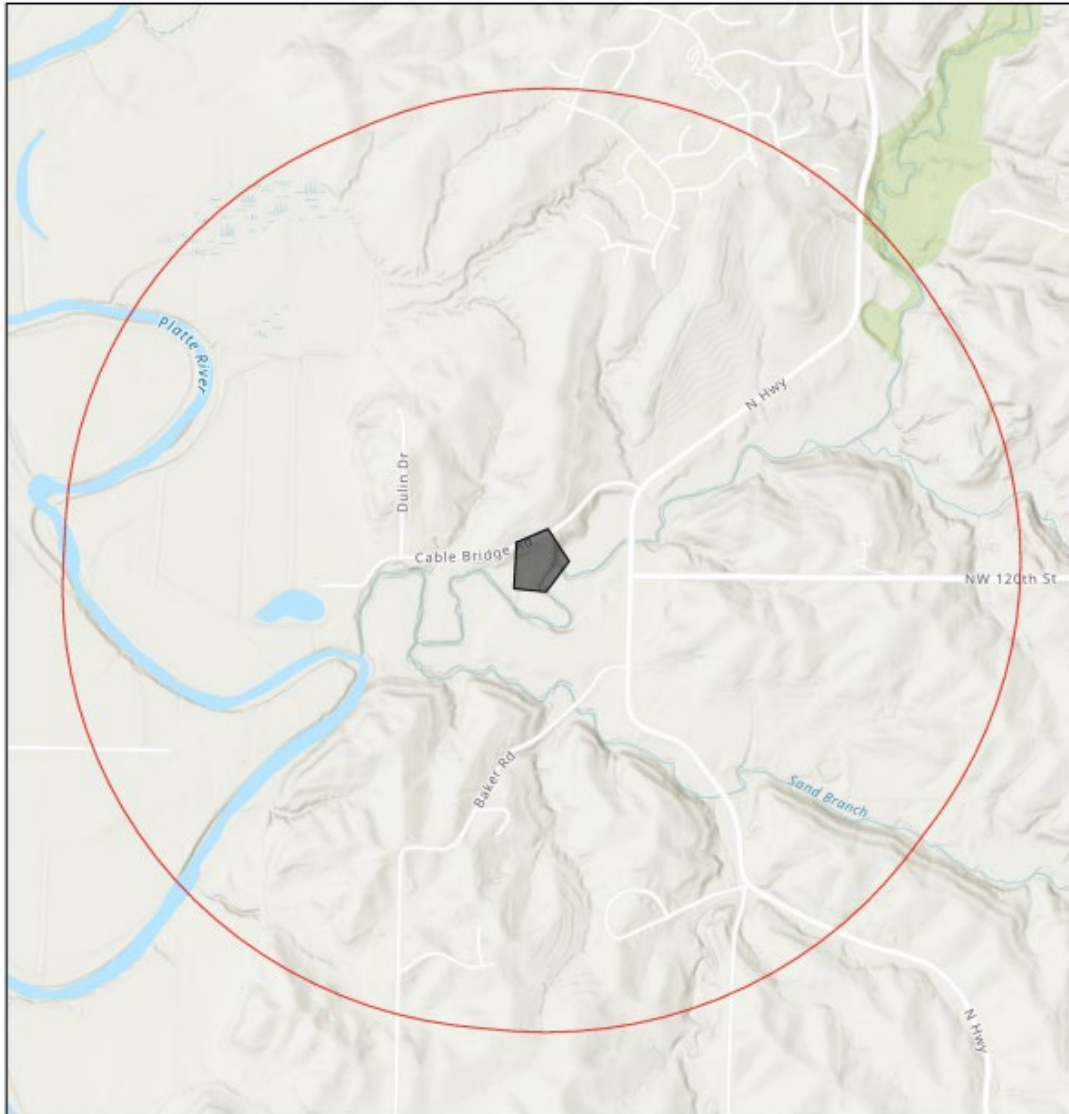
Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive 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 573-526-4778 or visit <https://www.modot.org/> for additional information on recommendations.

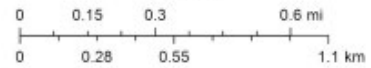
Prairie Creek Wastewater Treatment Facility



August 8, 2022

-  Buffered Project Boundary
-  Project Boundary

1:20,031



Esri, NASA, NGA, USGS, FEMA, Missouri Dept. of Conservation, Missouri DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Species or Communities of Conservation Concern within the Area:

There are records of 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.

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

Other Special Search Results:

No results have been identified for this project location.

Project Type Recommendations:

Waste Transfer, Treatment and Disposal -Wastewater treatment plant: New or Maintenance; [Clean Water Act](#) permits issued by other agencies regulate both construction and operation of wastewater systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream. Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions.

Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and *Sericea lespedeza*. Management Recommendations for Construction Projects Affecting Missouri Rivers and Streams is available at <https://mdc.mo.gov/sites/default/files/2020-06/Streams.pdf>

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) may occur near the project area. Both of these species of bats 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 or Northern long-eared 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 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: [Do I need an eagle take permit? | U.S. Fish & Wildlife Service \(fws.gov\)](#) if eagle nests are seen.

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See <https://mdc.mo.gov/community-conservation/managing-invasive-species-your-community> for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (> 140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (<http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx>) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (<http://dnr.mo.gov/env/wpp/401/index.html>), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit <http://dnr.mo.gov/env/wpp/permits/index.html> for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

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

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See [Missouri Species and Communities of Conservation Concern Checklist \(mo.gov\)](#) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at [Mofwis Search Results](#). Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

Appendix D: Antidegradation Review Summary Attachments
Antidegradation Review Summary / Request



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY / REQUEST

FOR DEPARTMENT USE ONLY	
APP NO.	
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

1. FACILITY			
NAME Prairie Creek Wastewater Treatment Plant		COUNTY Platte	
ADDRESS (PHYSICAL) 18305 Cable Bridge Road	CITY Platte City	STATE Mo	ZIP CODE 64079
PERMIT NUMBER MO-0126705	PROPOSED DESIGN FLOW 900,000	SIC / NAICS CODE	

2. OWNER			
NAME Timber Creek Sewer Company			
ADDRESS P.O. Box 511	CITY Platte City	STATE Mo	ZIP CODE 64079
EMAIL ADDRESS kaleb@timbercreeksewerco.com			TELEPHONE NUMBER WITH AREA CODE 816-858-3989

3. CONTINUING AUTHORITY			
The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(2).			
NAME Timber Creek Sewer Company		SECRETARY OF STATE CHARTER NUMBER	
ADDRESS P.O. Box 511	CITY Platte City	STATE Mo	ZIP CODE 64079
EMAIL ADDRESS kaleb@timbercreeksewerco.com			TELEPHONE NUMBER WITH AREA CODE 816-858-3989


4. CONSULTANT			
PREPARER NAME Adam Black		COMPANY NAME TREKK Design Group	
ADDRESS 1411 East 104th Street	CITY Kansas City	STATE Mo	ZIP CODE 64131
EMAIL ADDRESS ablack@trekkdesigngroup.com			TELEPHONE NUMBER WITH AREA CODE 417.890.9465

5. RECEIVING WATER BODY SEGMENT #1	
NAME Prairie Creek	
5.1 Upper end of segment – Location of discharge UTM: X= 345488, Y= 4352735 OR Lat _____, Long _____	
5.2 Lower end of segment – UTM: X= 344833, Y= 4352441 OR Lat _____, Long _____	
Per the Missouri Antidegradation Implementation Procedure (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."	

6. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)	
NAME	
6.1 Upper end of segment – End of Segment #1 UTM: X= _____, Y= _____ OR Lat _____, Long _____	
6.2 Lower end of segment – UTM: X= _____, Y= _____ OR Lat _____, Long _____	

7. DECHLORINATION	
If chlorination and dechlorination is the existing or proposed method of disinfection treatment, will the effluent discharged be equal to or less than the Water Quality Standards for Total Residual Chlorine stated in Table A1 of 10 CSR 20-7.031? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No – What is the proposed method of disinfection? Ultraviolet Light	
Based on the disinfection treatment system being designed for total removal of Total Residual Chlorine, minimal degradation for Total Residual Chlorine is assumed and the facility will be required to meet the water quality based effluent limits. These compliance limits for Total Residual Chlorine are much less than the method detection limit of 0.13 mg/L.	

8. SUMMARIZE THE FEASIBILITY OF CONSTRUCTING A NO-DISCHARGE TREATMENT WASTEWATER FACILITY					
<p>According to the Antidegradation Implementation Procedure Sections I.B. and II.B.1., the feasibility of no-discharge alternatives must be considered. No-discharge alternatives may include connection to a regional treatment facility, surface land application, subsurface land application, and recycle or reuse.</p> <p>Prairie Creek WWTF is an existing mechanical plant with a capacity of 600,000 gpd. The cost of increasing the capacity of the plant and improving its treatment processes is far less than the cost of upgrading the nearest treatment plant and installing the equipment necessary to pump the untreated wastewater to it. Land application would also be more expensive to switch from the existing system to a new treatment process. The same is true for switching to a recycle or reuse system.</p>					
9. ADDITIONAL REQUIREMENTS					
<p>Complete and submit the following with this submittal:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Copy of the Geohydrologic Evaluation – Submit request through the Missouri Geological Survey website <input checked="" type="checkbox"/> Copy of the Missouri Natural Heritage from the Missouri Department of Conservation website <input checked="" type="checkbox"/> Attach your Antidegradation Review Report and all supporting documentation as these forms are only a summary. <input type="checkbox"/> If applicable, submit a copy of any Existing Water Quality data used in this process. Include the date range of the data, source(s) of the data, and location of data collection relative to the outfall. If using your own collected water quality data, submit a copy of the Quality Assurance Project Plan (QAPP) approved by the department's Watershed Protection Section. For more detailed information, see the Missouri Antidegradation Implementation Procedure (AIP), Section II.A.1. 					
10. PATH / TIER REVIEW ATTACHMENTS ENCLOSED					
Path A: Tier 2 – Non-Degradation Mass Balance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			
Path B: Tier 2 – Minimal Degradation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
Path C: Tier 2 – Significant Degradation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
Path D: Tier 1 – Preliminary Review Request	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
Path E: Temporary Degradation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No			
11. APPLICANT PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS					
Preliminary effluent limits for the proposed project are dependent upon the path selected:					
Applicable Pollutants of Concern	Concentration*		Path / Tier Review Attachment Used for POC Evaluation	Average Monthly Limit	Daily Maximum Limit or Average Weekly Limit
BOD ₅	X			20	30 (AWL)
TSS	X			20	30 (AWL)
Ammonia (Summer)	X			0.9	3.6 (MDL)
Ammonia (Winter)	X			1.8	7.1 (MDL)
Total Phosphorus	X			Na	Na
E. Coli				206	1,030 (MDL)
Oil and Grease	X			10	15 (MDL)
pH				6.5 - 9.0	
* Place an X in appropriate box for the concentration units for each Pollutant of Concern.					

12. PROPOSED PROJECT SUMMARY	
Timber Creek plans to expand the Prairie Creek treatment facility to treat 900,000 gpd as the surrounding area develops.	
Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri must comply with the requirements set forth in the <i>New Technology Definitions and Requirements fact sheet</i> .	
13. CONTINUING AUTHORITY WAIVER (For New Discharges)	
In accordance with 10 CSR 20-6.010(2)(C), applicants proposing use of a lower preference continuing authority, when the higher level authority is available, must submit a waiver from the existing higher authority one or other documentation for the department's review, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or by the Missouri Clean Water Commission. Is the waiver necessary? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, provide a copy.	
14. APPLICATION FEE	
<input type="checkbox"/> CHECK NUMBER	<input checked="" type="checkbox"/> JETPAY CONFIRMATION NUMBER 20036040
15. SIGNATURE	
I am authorized and hereby certify that I am familiar with the information contained in this document and to the best of my knowledge and belief such information is true, complete and accurate.	
SIGNATURE 	DATE 8.11.22
PRINT NAME Kaleb Sherry	TITLE General Manager
PLEASE IDENTIFY YOUR STATUS FOR THIS PROJECT: <input type="checkbox"/> OWNER <input type="checkbox"/> CONTINUING AUTHORITY <input type="checkbox"/> CONSULTANT	

Antidegradation Review Summary Path A: Tier 2 – Non-Degradation Mass Balance



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY
PATH A: TIER 2 – NON-DEGRADATION MASS BALANCE

1. FACILITY								
NAME Prairie Creek WWTP						COUNTY Platte		
2. EXISTING LOAD SUMMARY – NET CHANGE								
Pollutant of Concern	Type of Limit	Current Permit Limit*	Current Design Flow	Current Load	New Load	New Expanded Design Flow	No-Degradation Expansion Concentration	
		mg/L	MGD	lbs/day	lbs/day	MGD	mg/L	
Biochemical Oxygen Demand (BOD ₅)	AWL	45	0.6			0.9	30	
	AML	30					20	
Total Suspended Solids (TSS)	AWL	45						30
	AML	30						20
Ammonia (Summer)	MDL	5.4						3.6
	AML	1.3						0.9
Ammonia (Winter)	MDL	10.6						7.1
	AML	2.7						1.8
E. coli	MDL	1,030						1,030
	AML	206						206
Oil and Grease	MDL	15		Na	Na		15	
	AML	10		Na	Na		10	
pH	Min	6.5		Na	Na		6.5	
	Max	9.0		Na	Na		9.0	
* If current facility discharges the pollutant of concern and does not have a current permit limit for this pollutant of concern, the water quality standard should be used in the calculation.								
AWL – Average Weekly Limit		MDL – Maximum Daily Limit		AML – Average Monthly Limit				
Equation: Load = Limit (mg/L)* Conversion Factor (8.34 (LBS/MG)/(mg/L))*Design Flow (MGD). Note: New Load must be less than or equal to the Current Load.								
Is mass balance non-degradation proposed for all pollutants of concern? <input type="checkbox"/> Yes <input type="checkbox"/> No								
If no, the appropriate additional forms must be used for those pollutants which are degrading.								

3. PROPOSED PROJECT SUMMARY

Timber Creek plans to expand the Prairie Creek treatment facility to treat 900,000 gpd as the surrounding area develops.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT –
 WASTEWATER TREATMENT FACILITY**

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? YES N/A Funding Agency: _____ Project #: _____
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: _____ N/A
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: _____ NO (If No, complete No. 1.4.)
- 1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
 YES NO Exempt because _____
- 1.5 Is a copy of the appropriate plans* and specifications* included with this application?
 YES Denote which form is submitted: Hard copy Electronic copy (See instructions.) NO
- 1.6 Is a summary of design* included with this application? YES NO
- 1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
 YES Date of submittal: _____
 Enclosed is the appropriate operating permit application and fee submittal. Denote which form: A B B2
 N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? YES NO
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? YES NO
- 1.9 Is the appropriate fee or JetPay confirmation included with this application? YES NO
 See Section 7.0

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$
---------------------	---

2.3 PROJECT DESCRIPTION

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

2.5 DESIGN INFORMATION

A. Current population: _____; Design population: _____

B. Actual Flow: _____ gpd; Design Average Flow: _____ gpd;
 Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____

2.6 ADDITIONAL INFORMATION

A. Is a topographic map attached? YES NO

B. Is a process flow diagram attached? YES NO

3.0 WASTEWATER TREATMENT FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS	
ADDRESS (PHYSICAL)		CITY	STATE	ZIP CODE	COUNTY
Wastewater Treatment Facility: Mo- (Outfall Of)					
3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. _____, T _____, R _____ (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): _____ Northing (Y): _____ For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: _____					

4.0 PROJECT OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS	
ADDRESS		CITY	STATE	ZIP CODE	

5.0 CONTINUING AUTHORITY: A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.

NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS	
ADDRESS		CITY	STATE	ZIP CODE	

5.1 A letter from the continuing authority, if different than the owner, is included with this application. YES NO N/A

5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.

A. Is a copy of the certificate of convenience and necessity included with this application? YES NO

5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.

- A. Is a copy of the as-filed restrictions and covenants included with this application? YES NO
- B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? YES NO
- C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? YES NO
- D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? YES NO

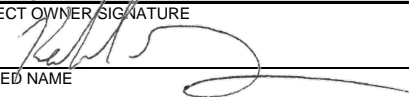
6.0 ENGINEER

ENGINEER NAME / COMPANY NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS	
ADDRESS		CITY	STATE	ZIP CODE	

7.0 APPLICATION FEE

CHECK NUMBER JETPAY CONFIRMATION NUMBER

8.0 PROJECT OWNER: 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.

PROJECT OWNER SIGNATURE 		DATE
PRINTED NAME		DATE
TITLE OR CORPORATE POSITION		TELEPHONE NUMBER WITH AREA CODE
		E-MAIL ADDRESS

Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
P.O. BOX 176
JEFFERSON CITY, MO 65102-0176

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.

PART B – LAND APPLICATION ONLY**(Submit only if the proposed construction project includes land application of wastewater.)****8.0 FACILITY INFORMATION**

8.1 Type of wastewater to be irrigated: Domestic State/National Park Seasonal business
 Municipal Municipal with a pretreatment program or significant industrial users
 Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
 12 months per year Part of the year (list months): _____

8.3 This system is designed for:
 No-discharge.
 Partial irrigation when feasible and discharge rest of time.
 Irrigation during recreational season, April – October, and discharge during November – March.
 Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: Steel Concrete Fiberglass Earthen Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

Basin #1: Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #2: Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #3: Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1: Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft	Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
 Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
 Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____

Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres

(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: Grass hay Pasture Timber Row crops
 Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
 Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
 Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

10.7 Land application rate is based on:
 Hydraulic Loading Other (describe) _____
 Nutrient Management Plan (N&P) If N&P is selected, is the plan included? YES NO

**INSTRUCTIONS FOR COMPLETING
APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITIES**

All blanks must be filled in when the application is submitted to the Missouri Department of Natural Resources. This includes the **required signature**.

Note: Use the form Application for Construction Permit – Sewer Extension, MO 780-1632, if only collection system component(s) are to be constructed.

A land disturbance permit is required if construction will result in the disturbance of one or more acres of land. A land disturbance permit is available through the department's ePermitting system at dnr.mo.gov/env/wpp/epermit/help.htm. A permit fee in accordance with 10 CSR 20-6.011 is required.

After receiving a complete application, the Department enters the application information into the Missouri Clean Water Information System. You may search for the status of a construction permit online at dnr.mo.gov/mocwis_public/applicationInprocessSearch.do.

Part A – Basic Application Information

- 1.0 If the answer to any of the questions in this section is no, this application may be considered incomplete and returned to the applicant.
- 1.1 Check the appropriate box. If the project is funded with federal or state monies, supply the funding agency name and project number.
- 1.2 Check the appropriate box. Provide the date of department approval for the antidegradation report. Include a copy of the approved *Water Quality and Antidegradation Review* with this application. Not every construction project may require an antidegradation review. For more information, guidance documents and forms concerning antidegradation visit dnr.mo.gov/env/wpp/permits/antideg-implementation.htm.
- 1.3 Check the appropriate box and provide the date of department approval. Per 10 CSR 20-8.110(2), a facility plan must be submitted to the department prior to the submittal of a construction permit application. The department has developed a fact sheet to aid in the development of an approvable facility plan, Facility Plan Guidance for Wastewater Treatment Facilities, Fact Sheet--PUB2416.
- 1.4 Complete only if No. 1.3 is answered No. Check the appropriate box. Include the exemption reason from 10 CSR 20-6.010(4)(B).
- 1.5 Check the appropriate box. Provide a copy of the appropriate plans and specifications for department review when applying for a construction permit per 10 CSR 20-8.110 and 10 CSR 20-6.010. A Missouri registered professional engineering seal, signature and date is required on each sheet of the plans and the cover of the technical specifications. An electronic copy of the construction permit application and the information listed below in Portable Document Format (PDF) searchable format or department approved equivalent per 10 CSR 20-6.010(5)(G), along with one (1) paper copy for projects not seeking department funding or two (2) paper copies for projects seeking department funding under 10 CSR 20-4.
- 1.6 Check the appropriate box. A summary of design shall accompany the plans and specifications when applying for a construction permit per 10 CSR 20-6.010(5)(G) and 10 CSR 20-8.110(8). The department has developed a fact sheet to aid in the development of an acceptable summary of design. This document is available online at dnr.mo.gov/pubs/pub2417.htm.
- 1.7 Check the appropriate box if an operating permit modification is needed. Include the applicable operating permit application. New outfalls, discharges, projects converting to land application, or a lagoon upgrade require an operating permit modification application. Contact the Department for clarification. Projects that may not need an operating permit modification check the N/A box and indicate whether you want to review the draft prior to public notice should the Department determine a modification is required. The Department can modify your operating permit without an application for projects that are adding chlorine disinfection, constructing to meet current operating permit limits, or constructing to meet limits in a schedule of compliance.
 - Form A is available online at dnr.mo.gov/forms/780-1479-f.pdf.
 - Form B is available online at dnr.mo.gov/forms/780-1512-f.pdf.
 - Form B2 is available online at dnr.mo.gov/forms/780-1805-f.pdf.
- 1.8 Check the appropriate box. More information about the Compliance and Enforcement Water Protection Program is available online at dnr.mo.gov/env/wpp/enf/index.html.

- 1.9 Check the appropriate box. Include payment or payment confirmation for the fee with your application. See 10 CSR 20-6.011(2) and Wastewater Treatment Facility Permit Fees -- PUB2564.
- Note:** The department returns incomplete construction permit applications and related engineering documents and the application forfeits the fees. See 10 CSR 20-6.011(5)(A). The applicant forfeits the fees when the applicant withdraws construction applications. See 10 CSR 20-6.011(5)(B).
- 2.1 Provide the name of the proposed construction project.
- 2.2 Provide the estimated project construction cost. The estimated and final project construction cost will be useful to the department in conducting affordability analyses.
- 2.3 Briefly describe the construction project by providing the number and capacity of each new unit.
- 2.4 Briefly describe the method of sludge handling, use and disposal at the treatment facility.
- 2.5 Provide the project design information and when required in the units specified.
- A. Provide the current population and the design population to be served by the wastewater treatment facility.
- B. Provide the estimated design flow information in accordance with 10 CSR 20-8.110(3).
- 2.6 Provide the additional project information in accordance with 10 CSR 20-8.110(5).
- A. Attach a topographic map of the area extending at least one mile beyond the facility property boundaries. This map must show the outline of the facility and the following information. A topographic map is available online at dnr.mo.gov/internetmapviewer or from the Department of Natural Resources' Missouri Geological Survey in Rolla, Mo., at 573-368-2125. (Submittals of more than one map may be necessary to show the entire area.)
1. The area surrounding the wastewater treatment facility, including all unit processes.
 2. The major pipes or other structures through which wastewater enters the treatment facility and the pipes or other structures through which treated wastewater is discharged from the treatment facility. Include outfalls from bypass piping, if applicable.
 3. The actual point of discharge.
 4. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment facility and 2) listed in public record or otherwise known to the applicant.
 5. Any areas where biosolids produced by the treatment facility are treated, stored, or disposed.
 6. If the treatment facility receives waste classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail, or special pipe, show on the map where hazardous waste enters the treatment works and where it is treated, stored or disposed.
 7. Outline any wastewater land application sites.
- B. Provide a process flow diagram with the influent and effluent design average flow and peak flow capabilities. Also, depict all of the treatment facility components and the corresponding hydraulic capacities of each component. In addition, include all recycle flows in the diagram. If land application is used, depict all irrigation equipment and application sites.
- 3.0 Complete the Wastewater Treatment Facility information. Include the Missouri State Operation Permit number, outfall number, physical location, and other appropriate contact information.
- 3.1 Provide the project legal description. The department's mapping system is available online at dnr.mo.gov/internetmapviewer.
- 3.2 A Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates.
- 3.3 Provide the name of the receiving stream(s) to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.
- 4.0 Complete Project Owner information. Include the legal name, address, phone number with area code and email address.
- 5.0 Complete Continuing Authority contact information. If same as the Project Owner, write "Same as above". A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit <https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf>. A continuing authority's name must be listed exactly as it appears on the Missouri Secretary of State's (SoS's) webpage: <https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0>, unless the continuing

authority is an individual(s), government, or otherwise not required to register with the SoS. See 10 CSR 20-6.010(2) for the regulatory requirement regarding continuing authority.

- 5.1 Check the appropriate box. Include a letter signed by the continuing authority (if not same as the project owner) stating they will “accept, operate and maintain” the wastewater treatment facility after successful construction. If the continuing authority will not accept and agree to operate and maintain the wastewater treatment facility, this application will be considered incomplete.
- 5.2 Complete if the continuing authority is a Missouri Public Service Commission, or PSC, regulated entity. See 10 CSR 20-6.010(2)(B)3 for more information. This information is not necessary for existing wastewater treatment facilities currently permitted with a PSC entity as owner and continuing authority.
- 5.3 Complete if the continuing authority is a property owners association. See 10 CSR 20-6.010(2)(B)5 for more information. This information is not necessary for existing wastewater treatment facilities currently permitted with the property owners association as owner and continuing authority.
- 6.0 Complete Engineer contact information.
- 7.0 Check the appropriate box and include check or confirmation number. Applicants can pay fees online by credit card or eCheck through a system called JetPay.
- Per Section 37.001, RSMo, a transaction fee will be included. The transaction fee is paid to the third party vendor JetPay, not the Department of Natural Resources.
 - Be sure to select the correct fee type and corresponding URL to ensure your payment is applied appropriately. If you are unsure what type of fee to pay, please contact the Water Protection Program’s Budget, Fees, and Grants Management Unit by phone at (573) 522-1485 for assistance.
 - Upon successful completion of your payment, JetPay provides a payment confirmation. Submit this form with a copy of the payment confirmation if requesting a new permit or a permit modification. For permit renewals of active permits, the Department will invoice fees annually in a separate request.
 - If you are unable to make your payment online, but want to pay with credit card, you may email your name, phone number, and invoice number, if applicable, WPPFEES@dnr.mo.gov. The Budget, Fees, and Grants Management Unit will contact you to assist with the credit card payment. **Please do not include your credit card information in the email.**
 - Applicants can find fee rates in 10 CSR 20-6.011 and Wastewater Treatment Facility Permit Fees -- PUB2564 (<https://dnr.mo.gov/pubs/pub2564.htm>).

WP 04 Construction Permits: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/>

- 8.0 The owner of the construction project must sign the application.

Part B – Land Application

Complete Part B only if the proposed construction project includes land application of wastewater from a treatment facility.

- 8.0 Provide the applicable Facility Information land application information. Check the appropriate boxes.
- 9.0 Provide the applicable Storage Basins information. Check the appropriate boxes.
- Freeboard – The depth from the top of the berm to the emergency spillway. Minimum depth • is one foot.
 - Safety Volume – The depth to contain the 25-year, 24-hour storm event. Minimum depth is • one foot.
 - Maximum Operating Water Level – The water level at the bottom of the safety volume. • Minimum depth is two feet below the top of the berm.
 - Minimum Operating Water Level – The water level above the bottom of the lagoon basin for • seal protection. Minimum depth is two feet and may be greater when additional treatment volume is included.
 - Total Depth is from the top of the berm to the bottom of the lagoon basin including freeboard. •
- 10.0 Provide the applicable Land Application System information. Check the appropriate boxes.
- 10.7 Check the appropriate box. If the land application rate is based on a Nutrient Management Plan, or N and P, include the plan with this application for department review.

Mail the completed form and applicable fee to the department.

If there are any questions concerning this form, please contact the Department of Natural Resources, Water Protection Program at 800-361-4827 or 573-751-1300 or visit dnr.mo.gov/env/wpp.