STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

Central States Water Resources, Inc.
Eaglewood Wastewater Treatment Facility
1630 Des Peres Rd.
St. Louis, MO 63131

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.

August 13, 2024
Effective Date

August 12, 2026
Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Conversion of an unused concrete tank to a sidestream moving bed biofilm reactor (MBBR), installation of new MBBR dosing pumps and blowers, conversion of an unused concrete tank to a chlorine contact and post-aeration tank, and installation of two new tablet feeders for chlorine disinfection and dechlorination. The design average flow will remain 13,875 gallons per day (gpd).

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

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 Benjamin Kuenzel, P.E., with 21 Design Group, Inc., 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 Central Field Office per 10 CSR 20-7.015(9)(G).

5. 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)

   - The outfall shall be so constructed and protected against the effects of flood water, ice, or other hazards as to reasonably ensure its structural stability and freedom from stoppage. 10 CSR 20-8.140(6)(A)

   - All sampling points shall be designed so that a representative and discrete 24-hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140(6)(B)

   - All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140(6)(C)

   - All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140(7)(A)1.

   - Disinfection and dechlorination, when used, shall be provided during all power outages. 10 CSR 20-8.140(7)(A)2.

- 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.

- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140(7)(E)

- Effluent 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:

    - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140(8)(A)
    - First aid equipment; 10 CSR 20-8.140(8)(C)
    - 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;
    - 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)

- Emergency Power. Disinfection and dechlorination processes, when used, shall be provided during all power outages. 10 CSR 20-8.190(2)(A)

- Contact period for Chlorine Disinfection. A minimum contact period of 15 minutes at design peak hourly flow or maximum rate of pumpage shall be provided after thorough mixing. 10 CSR 20-8.190(3)(A)

- Solid dechlorination systems shall not be located in the chlorine contact tank. 10 CSR 20-8.190(4)(B)1.

- Contact time. A minimum of 30 seconds for mixing and contact time of dechlorination systems shall be provided at the design peak hourly flow or maximum rate of pumpage. 10 CSR 20-8.190(4)(B)2.

6. Upon completion of construction:

   A. Central States Water Resources, Inc., will become the continuing authority for operation and maintenance of these facilities;

   B. Submit an electronic copy of the as-built plans 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) (dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155) and submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater (≤100,000 gallons per day) and operating permit modification fee of $150 to the Engineering Section of the Water Protection Program 60 days prior to operation.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Construction would ensure the WWTF will consistently meet final effluent limits, primarily for ammonia as N but also for biochemical oxygen demand, *E. coli* bacteria, and total residual chlorine.

2. FACILITY DESCRIPTION

The existing facility includes a recirculating sand filter and recirculation/dosing tank with 80/20 splitter valve followed by disinfection via chlorination/dechlorination. A sidestream moving bed biofilm reactor (MBBR) with a course aeration grid and 50 percent fill is being added, using an existing concrete tank. Another existing concrete tank will be used for chlorine contact and post-aeration mixing (in lieu of a serpentine path), along with two new tablet feeders. A new blower will supply both the MBBR and post-aeration. An effluent magnetic flow meter will also be added.

The Eaglewood WWTF (formerly the Osage Water Co KK WWTP) is located just west of 2010 Oak Hills Rd, west of Osage Beach, in Camden County, Missouri. The facility has a design average flow of 13,875 gpd and serves a hydraulic population equivalent of approximately 139 people.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet the requirements of MOGD00340 Table D (and Whole Body Contact Recreation - Category A) with an expiration date of June 30, 2024. The existing facility cannot consistently meet the current monthly-average ammonia limit of 4.6 mg/L (the effluent exceeded this limit 12 times since mid-2020, with a reported high of 31.4 mg/L). The facility also exceeded the current monthly-average biochemical oxygen demand of 20 mg/L three times, the current monthly-average total residual chlorine of 130 mg/L (minimum quantification level) once, and the current *E. coli* monthly geometric mean of 126 colonies per 100 mL once.

The limits following the completion of construction will be applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand$_5$	mg/L	20
Total Suspended Solids	mg/L	20
Ammonia as N	mg/L	4.6
pH	SU	6.0-9.0
Total Residual Chlorine	µg/L	9 (130 ML)
E. coli	#/100mL	126

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Existing major components that will remain in use include the following:

- Existing infrastructure that will remain include – collection-system septic tanks, a recirculation tank, dual recirculating media filter, and an 80/20 splitter valve. The original design average flow is listed as 13,875 gpd. According to a 2007 submittal of engineering calculations, the two recirculating media filters are each 44 ft by 32 ft, for a total of 2,816 sq ft. Note that, at the current *(2019)* requirement of 3.5 gpd/sq ft and based on the previously submitted information, the design flow for just the recirculating media filters would be 9,856 gpd. [10 CSR 20-8.180(3)(D)2.]

Construction will cover the following items:

- Components are designed for 13,875 gpd, which is a Population Equivalent of 139 based on 100 gpd/person. [10 CSR 20-9.020(1)(D)]

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.

- Electromagnetic Meter – An effluent electromagnetic 2-inch flow meter shall measure the secondary treated and disinfected wastewater prior to discharge at Outfall No. 001.

- Moving Bed Biofilm Reactor (MBBR) – Installation of one sidestream MBBR sized to supplement treatment for a design average flow of 13,875 gpd and a peak flow of 2,312.5 gph. The MBBR tank is approximately 12 ft by 6 ft and 6 ft deep with a sidewater depth of 4.5 ft for a volume of approximately 2,424 gallons. The hydraulic retention time is 4.2 hours at design average flow. The MBBR will be filled approximately 50 percent (162 ft^3 or 3,899 m^2) with high-surface-area media, with an effective surface area of 850 m^2/m^3 and an effective nitrification rate of ~ 0.595 $g/m^2/d$. The media dimensions will be ~ 14.5 x 9.14 mm (0.57" x 0.36"). Aeration by means of one regenerative-type blower (with one on standby) controlled by a variable frequency drive (VFD), each capable of supplying 100 scfm (95 scfm for the MBBR and 5 scfm for the chlorine-contact mixing and post aeration) with 3.9 HP motors to the 32 coarse-bubble diffusers. The actual oxygen required is 25 lbs/d, which is an oxygen to ammonia ratio of 7.2. The effluent from the MBBR will flow by gravity through a sieve (~ 12.7 mm or 0.5" openings) back to the recirculation/dosing tank. Two new dosing pumps in the recirculation tank (now also a dosing tank) will pump an average of 15 gpm (with a pump capable of 30 gpm against a head of 17.1 ft, pumping for 30 minutes each hour) for a total going through the MBBR of 21,600 gpd.

- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - Tablet Chlorinator – Installation of a tablet chlorination chamber receiving clarified effluent and prior to the chlorine contact tank. The tablet chlorinator shall have a design peak flow of 55,500 gpd. The system will dispense hypochlorite as the wastewater contacts the tablets.
  - Chlorine Contact Tank – Conversion of an existing concrete tank approximately 12 ft x 6 ft x 6 ft (with a 3-ft water depth for a total of 1,615 gallons) and two coarse-bubble diffusers supplying 5 scfm for mixing (capable of > 20 scfm/1,000 cu ft). The hydraulic retention time is 4.2 hours at design average flow and 42 minutes at peak hourly flow, which meets the regulatory requirement of at least 15 minutes at design peak hourly flow or maximum rate of pumpage.
  - Tablet Dechlorinator – Installation of a tablet dechlorination chamber receiving the chlorinated effluent and prior to Outfall No. 001. The tablet dechlorinator shall have a design peak flow of 55,500 gpd. The system will dispense sodium sulfite as the wastewater contacts the tablets.

- Relocated Outfall – The new outfall location is < 10 ft to the west of the current outfall location and about the same distance from the unnamed tributary. The new outfall consists of a 6-inch discharge pipe in a standard concrete structure. The existing outfall should be removed or capped.

- Emergency Power – A transfer switch is being provided. A portable generator will be available as needed to operate the treatment facility in event of power failure.

5. OPERATING PERMIT

After completion of construction, submit: (1) statement of work completed, (2) a signed and dated Application Form B and $150 modification fee, and (3) as-builts if the project was not constructed in accordance with previously submitted plans and specifications. Missouri State Operating Permit, General Permit MOGD00340, will be issued after receipt of the above documents. Ensure the correct and complete legal name of the owner and continuing authority is on the application (e.g., Central States Water Resources, Inc.). See the Missouri Secretary of State's website at bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0.

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

Scott Adams, P.E.
Engineering Section
scott.adams@dnr.mo.gov

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: with application
☐ 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
Eaglewood

2.2 ESTIMATED PROJECT CONSTRUCTION COST
$ 250,000

2.3 PROJECT DESCRIPTION
conversion of existing tank to MBBR, conversion of existing tank to CCT/post-aeration tank, new blower for MBBR and CCT, new dosing pumps for MBBR, new tablet feeders for chlorination and dechlorination

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
sludge disposal by contract hauler

2.5 DESIGN INFORMATION

A. Current population: 58 ; Design population: 58

B. Actual Flow: 12k gpd; Design Average Flow: 13.9k gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: 55.5k 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
Eaglewood	314-380-8544	env.comp@cswrgroup.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
0.08 miles W of 2010 Oak Hills Rd	Osage Beach	MO	65065	Camden

Wastewater Treatment Facility: Mo- GD00340 (Outfall 001 Of 001)

3.1 Legal Description: SE ¼, SE ¼, SE ¼, Sec. 6, T 39N, R 16W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 524923 Northing (Y): 4221587
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: unnamed tributary to Wood Hollow Cove, Lake of the Ozarks

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Central States Water Resources	314-380-8544	env.comp@cswrgroup.com

ADDRESS	CITY	STATE	ZIP CODE
1630 Des Peres Rd, Suite 140	St. Louis	MO	63131

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
same		

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
Benjamin Kuenzel / 21 Design Group Inc.	636-432-2144	ben@21designgroup.net

ADDRESS	CITY	STATE	ZIP CODE
1351 Jefferson St	Washington	MO	63090

7.0 APPLICATION FEE

☐ CHECK NUMBER ☑ JETPAY CONFIRMATION NUMBER 20053223

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

PRINTED NAME	DATE
Jacob O. Freeman, PE	2/12/24

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Engineering Director	314-380-8544	env.comp@cswrgroup.com

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) and10 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.