

**STATE OF MISSOURI**  
**DEPARTMENT OF NATURAL RESOURCES**  
**MISSOURI CLEAN WATER COMMISSION**



**CONSTRUCTION PERMIT**

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

Eva Riebold, owner  
Friendly Prairie WWTF  
16 SW 265 Road  
Warrensburg, MO 64093

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.

June 23, 2020  
Effective Date

June 22, 2022  
Expiration Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

The facility is a 3-cell lagoon system with a design flow of 21,940 gpd. The facility proposed to decrease its design flow to 11,025 gpd and convert its treatment system to a no-discharge system by adding a subsurface LPP land application field. The system serves 17 mobile home units, 12 residential lots, a church and a residential duplex. The existing lagoons will be left in place and the effluent will be dispersed into a proposed subsurface LPP system. The proposed system consists of a screened pump system and supply piping to EzFlow bundles placed in trenches. The soils at the site are rated for 0.2-0.25 gpd/sf. The facility decided to use a design loading rate of 0.2 gpd/sf for the entire system through the lateral lines. The soil morphology review was conducted and on site soils were determined to be acceptable for this system with a perimeter drain. The soil investigation was completed by Timothy Knoernschild, Certified Soil Scientist on August 17, 2017.

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 publically-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 Phillips Engineering 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 Regional Regional Office per 10 CSR 20-7.015(9)(G).
5. The completed project shall be field tested to verify actual pumped volume of each dose. The timer controls shall be set to ensure a dosing rate not to exceed the allowable rate of 0.2 gallons per square foot per day.
6. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment. Lagoons-200 ft to residence and 50 ft to property line, Open RMFs- 200 ft to residence, Other discharging-50 ft to residence per 10 CSR 20-8.140(C)(2)
7. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
8. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred- (100-) year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300') per 10 CSR 20-8.140(2)(C)1.
9. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 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 [dnr.mo.gov/env/wpp/epermit/help.htm](http://dnr.mo.gov/env/wpp/epermit/help.htm). See [dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.
10. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See [dnr.mo.gov/env/wpp/401/](http://dnr.mo.gov/env/wpp/401/) for more information.

11. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

- Rain water from roofs, streets, and other areas and groundwater from foundation drains shall be excluded from all new sewers. 10 CSR 20-8.120 (2)
- Service connections to the gravity sewer main shall be watertight and cannot protrude into the sewer. 10 CSR 20-8.120 (3) (C) 1.
- 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 one hundred- (100-) year flood elevation. 10 CSR 20-8.140 (2) (B)
- Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140 (2) (D)
- 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
- Subsurface systems shall—
  - Exclude unstabilized fill and soils that have been highly compacted and/or disturbed, such as old road beds, foundations, or similar things; 10 CSR 20-8.200 (7) (A) 1. A.
  - Provide adequate surface drainage where slopes are less than two percent (2%); 10 CSR 20-8.200 (7) (A) 1. B.
  - Provide surface and subsurface water diversion where necessary, such as a curtain or perimeter drain; 10 CSR 20-8.200 (7) (A) 1. C. and
  - Have a ten foot (10') buffer from the property line. 10 CSR 20-8.200 (7) (A) 1. D.

12. Upon completion of construction:

- A. The owner 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;
- C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N) and submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ( $\leq 100,000$  gallons per day) and fee to the Engineering Section of the Water Protection Program 60 days prior to operation. Identify that the application is for a General permit for land application of domestic wastewater, MO-G823.

## **IV. REVIEW SUMMARY**

### **1. CONSTRUCTION PURPOSE**

The facility recognizes that “no-discharge” is likely the most reasonable option to achieve compliance with the ammonia effluent limits and disinfection requirement that are in its current operating permit. The facility proposed to leave the existing lagoons in place and construct a subsurface LPP dispersal system. This would allow all of the existing lagoon effluent to be land applied, thus eliminating the current surface water discharge.

### **2. FACILITY DESCRIPTION**

The existing Wastewater Treatment Facility consists of a three-cell lagoon. The lagoon effluent is discharged to a tributary at Fletcher Creek. The facility has a design flow of 21,940 gallons per day and no-discharge has been reported for pass 5 years according to the DMRs data.

The owner requests to reduce the design flow from 21,940 gpd to 11,025 gpd. The wastewater treatment system serves 12 residential lots, 17 mobile home units, a residential duplex and a church. The flow calculation of the above services supports the design flow decrease. The proposed construction is to install a subsurface LPP system in the fields directly adjacent of the wastewater treatment lagoon and also convert the treatment facility to a no-discharge system.

The Friendly Prairie WWTF is located at 16 SW 265 Road, Warrensburg City, in Johnson County, Missouri. The facility has a design average flow of 11,025 gpd and serves a hydraulic population equivalent of approximately 150 people.

### **3. COMPLIANCE PARAMETERS**

The proposed project is required to meet the requirements of MOG823 with an expiration date of August 24, 2022. The facility will be required to the subsurface dispersal requirements on page 8 of 10,

<https://dnr.mo.gov/env/wpp/permits/issued/docs/G823000.pdf>.

### **4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

**Existing major components which will remain in use include the following:**

- The existing 3-cell lagoon with surface area of 88,427 ft<sup>2</sup> will be used as storage and pretreatment. The current three (3) cells will provide 5.463 million gallons (mg) storage volume for the new LPP system. Sludge will stay in the lagoon.  
Cell#1: surface area =1.96 ac; operating depth = 6 ft; volume = 4.46 mg  
Cell#2: surface area =0.71 ac; operating depth = 4 ft; volume = 0.79 mg  
Cell#3: surface area =0.04 ac; operating depth = 3 ft; volume = 0.033 mg

### **Construction will cover the following items:**

- Subsurface LPP Soil Dispersal System
  - The soils at the site are rated for 0.20-0.25 gpd/sf. The facility decided to use a design loading rate of 0.2 gpd/sf for the entire system through the lateral lines.
  - The facility needs 57,000 square feet of area for dispersal. The absorption field is composed of 6 cells containing a total of 36 zones. Each cell has 6 equal zones. Each zone (30'x80') will be composed of 4 distribution bundles 80 feet long separated by 5 feet on centers. The bundles will be 12" diameter and fitted with 4" pipes fastened in the centers. The lagoon effluent will be pumped and dispersed to the 4" centered pipes by 1.5" PVC perforated pipes with 5/32" orifices spaced 6' apart.
  - 8' wide storm water diversion terrace will be constructed around the upper part of the absorption area to prevent hydraulic overloading of the soil during rainy periods.
  - The facility plans to include a subsurface perimeter drain to intercept groundwater, it will be installed 42 inches below the ground surface and direct the water toward the nearby drainage ditch, utilizing the 4 inch perforated pipe to help direct water away from the fields in the 12 inch trench.
  - The facility plans to use Infiltrator's 12 inch EZflow model 1201P-GEO for the dispersal.
  - Soil morphology review was conducted and on-site soils were determined to be acceptable for this system with a perimeter drain. The soil investigation was completed by Timothy Knoernschild, Certified Soil Scientist on August 17, 2017.

### **5. OPERATING PERMIT**

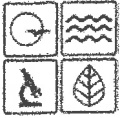
After completion of construction project submit: statement of work completed, as-built if the project was not constructed in accordance with previously submitted plans and specifications, and ensure that Application Form B, and fee has been submitted. Missouri State Operating Permit, General Permit MO-G823xxx, will be issued after receipt of the above documents.

### **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>

Lei Hou, PE  
Engineering Section  
[lei.hou@dnr.mo.gov](mailto:lei.hou@dnr.mo.gov)



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM

**FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY**

RECEIVED  
FEB 03 2020

CP0002124  
AP34400

FOR AGENCY USE ONLY	
CHECK NUMBER	1557
DATE RECEIVED	FEE SUBMITTED
2-3-20	\$1000.00
JETPAY CONFIRMATION NUMBER	

*Handwritten initials*

**READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM**

**1. THIS APPLICATION IS FOR:**

- An operating permit for a new or unpermitted facility. Construction Permit # \_\_\_\_\_  
(Include completed antidegradation review or request for antidegradation review, see instructions)
- A new site-specific operating permit formerly general permit #MOG \_\_\_\_\_
- A site-specific operating permit renewal: Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_
- A site-specific operating permit modification: Permit #MO- \_\_\_\_\_ Reason: \_\_\_\_\_
- General permit (NON-POTWs) (MOGD –discharging < 50,000 GPD or MOG823 – Land Application of Domestic Wastewater):  
Permit #MO- MO-0116548 Expiration Date 12/31/2021

1.1 Is the appropriate fee included with the application (see instructions for appropriate fee)?  YES  NO

**2. FACILITY**

NAME Friendly Prairie WWTF		TELEPHONE NUMBER WITH AREA CODE 660-441-0631	
ADDRESS (PHYSICAL) 16 SW 265 Road	CITY Warrensburg	STATE MO	ZIP CODE 64093

2.1 Legal description: Sec. 01, T 45N, R 26 County Johnson

2.2 UTM Coordinates Easting (X): 435870.1205 Northing (Y): 4286046.930  
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Unnamed tributary to Fletcher Creek

2.4 Number of outfalls: 1 Wastewater outfalls: 1 Stormwater outfalls: 0 Instream monitoring sites: 0

**3. OWNER: The owner of the regulated activity/discharge being applied for and is not necessarily the owner of the real property on which the activity or discharge is occurring.**

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
ADDRESS	CITY	STATE	ZIP CODE

3.1 Request review of draft permit prior to public notice?  YES  NO

3.2 Are you a publicly owned treatment works?  YES  NO  
If yes, please attach the Financial Questionnaire. See: <https://dnr.mo.gov/forms/780-2511-f.pdf>

3.3 Are you a privately owned treatment works?  YES  NO

3.4 Are you a privately owned treatment facility regulated by the Public Service Commission?  YES  NO

**4. CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility.**

NAME Floyd Riebold	EMAIL ADDRESS None	TELEPHONE NUMBER WITH AREA CODE 660-441-0631	
ADDRESS 16 SW 265 Road	CITY Warrensburg	STATE MO	ZIP CODE 64093

If the continuing authority is different than the owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

**5. OPERATOR**

NAME Owner	TITLE	CERTIFICATE NUMBER
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	

**6. FACILITY CONTACT**

NAME Owner	TITLE		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
ADDRESS	CITY	STATE	ZIP CODE



**8. ADDITIONAL FACILITY INFORMATION**8.1 Facility SIC code: \_\_\_\_\_ Discharge SIC code: 65158.2 Number of people presently connected or population equivalent (P.E.) \_\_\_\_\_ Design P.E. 1108.3 Connections to the facility: 1

Number of units presently connected:

Residential: 35 Commercial: 0 Industrial: 08.4 Design flow: 11,025 gpd Actual flow: \_\_\_\_\_8.5 Will discharge be continuous through the year?  Yes  No  
Discharge will occur during the following months: \_\_\_\_\_  
How many days of the week will discharge occur? \_\_\_\_\_8.6 Is industrial wastewater discharged to the facility?  Yes  No  
If yes, attach a list of the industries that discharge to your facility8.7 Does the facility accept or process leachate from landfills?  Yes  No8.8 Is wastewater land applied?  Yes  No  
If yes, attach Form I. See: <https://dnr.mo.gov/forms/780-1686-f.pdf>8.9 Does the facility discharge to a losing stream or sinkhole?  Yes  No8.10 Has a wasteload allocation study been completed for this facility?  Yes  No**9. LABORATORY CONTROL INFORMATION**

## LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant.  Yes  NoPush-button or visual methods for simple test such as pH, settleable solids.  Yes  NoAdditional procedures such as dissolved oxygen, chemical oxygen demand, biological oxygen demand, titrations, solids, volatile content.  Yes  NoMore advanced determinations such as BOD seeding procedures, fecal coliform/*E. coli*, nutrients (including Ammonia), Oil & Grease, total oils, phenols, etc.  Yes  NoHighly sophisticated instrumentation, such as atomic absorption and gas chromatograph.  Yes  No**10. COLLECTION SYSTEM**10.1 Are there any municipal satellite collection systems connected to this facility?  Yes  No  
If yes, please list all connected to this facility, contact phone number and length of each collection system

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

10.2 Length of pipe in the sewer collection system? (If available, include totals from satellite collection systems)  
3000 Feet, or \_\_\_\_\_ Miles (either unit is appropriate)10.3 Does significant infiltration occur in the collection system?  Yes  No  
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

**11. BYPASSING**Does any bypassing occur in the collection system or at the treatment facility?  Yes  No

If yes, explain:

**12. SLUDGE HANDLING, USE AND DISPOSAL****12.1** Is the sludge a hazardous waste as defined by 10 CSR 25?  Yes  No**12.2** Sludge production, including sludge received from others: \_\_\_\_\_ Design dry tons/year \_\_\_\_\_ Actual dry tons/year**12.3** Capacity of sludge holding structures:

Sludge storage provided: \_\_\_\_\_ cubic feet; \_\_\_\_\_ days of storage; \_\_\_\_\_ average percent solids of sludge;

 No sludge storage is provided.  Sludge is stored in lagoon.**12.4** Type of Storage: Holding tank Building Basin Lagoon Concrete Pad Other (Describe) \_\_\_\_\_**12.5** Sludge Treatment: Anaerobic Digester Lagoon Composting Storage Tank Aerobic Digester Other (Attach description) Lime Stabilization Air or Heat Drying**12.6** Sludge Use or Disposal: Land Application Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years) Contract Hauler Hauled to Another treatment facility Incineration Sludge Retained in Wastewater treatment lagoon Solid waste landfill**12.7** Person responsible for hauling sludge to disposal facility: By applicant  By others (complete below)

NAME

EMAIL ADDRESS

ADDRESS

CITY

STATE

ZIP CODE

CONTACT PERSON

TELEPHONE NUMBER WITH AREA CODE

PERMIT NO.  
MO-**12.8** Sludge use or disposal facility By applicant  By others (Complete below.)

NAME

EMAIL ADDRESS

ADDRESS

CITY

STATE

ZIP CODE

CONTACT PERSON

TELEPHONE NUMBER WITH AREA CODE

PERMIT NO.  
MO-**12.9** Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503? Yes  No (Explain)

**13. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM**

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please complete the eDMR Registration by clicking on the following link: <https://dnr.mo.gov/forms/780-2204-f.pdf>.

- You have completed and submitted with this permit application the required documentation to participate in the eDMR system.
- You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.
- You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

**14. JETPAY**

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

New Site Specific Permit: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/>


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

Modification Fee: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/>

New General Domestic WW: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/772/>

**15. CERTIFICATION**

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

NAME (TYPE OR PRINT)	OFFICIAL TITLE	TELEPHONE NUMBER WITH AREA CODE
Floyd Riebold	Owner	660-441-0631
SIGNATURE		DATE SIGNED
		X January 31, 2020