

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION



## CONSTRUCTION PERMIT

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

Mr. John McCann 7339 Pine Ridge Drive Park City, UT 84098
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for the construction of (described facilities):

See attached.
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Permit Conditions:

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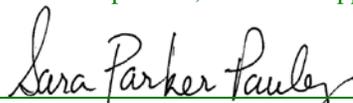
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

November 16, 2015  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

November 15, 2017  
Expiration Date

  
John Madras, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

The John and Rachel McCann wastewater treatment facility is a 600 gpd plant. Installation of a simplex pump station to pump from the existing treatment system to the new recirculation tank with a filtered duplex pump vault and a splitter valve which splits flow to an Orenco Systems Inc. AdvanTex-AX100 textile filter unit or the existing ultraviolet disinfection system.

The project will also include general site work appropriate to the scope and purpose of the project and all necessary piping and appurtenances to make the facility a complete and useable 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 in accordance with the plans and specifications submitted by Lake Professional Engineering Services Inc. on August 8, 2015 and October 23, 2015.
3. The department must be contacted in writing prior to making any changes to the approved 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(8).

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 Southwest Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
  - A. Sewer mains shall be laid at least 10-feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10-foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18-inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150-pounds per square inch to assure water tightness.
  - B. Manholes should be located at least 10-feet horizontally from any existing or proposed water main.
  - C. Manholes shall be located with the top access at or above grade level.
  - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18-inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
    - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
    - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10-feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.

8. 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 [www.dnr.mo.gov/env/wpp/epermit/help.htm](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.
9. 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 [www.dnr.mo.gov/env/wpp/401/](http://www.dnr.mo.gov/env/wpp/401/) for more information.
10. Upon completion of construction;
  - A. John and Rachel McCann are the continuing authority for operation, maintenance, and modernization of these facilities;
  - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D);
  - C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and
  - D. When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

#### **IV. REVIEW SUMMARY**

##### **1. AMMONIA**

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The 2014 MO-0134716 renewal discusses EPA's new ammonia criteria. In addition, a comment letter dated September 29, 2015 also addressed ammonia. In response to the comment letter, the consultant stated the addition of the "AX100 should help the treatment system meet a change in the ammonia limit."

## **2. CONSTRUCTION PURPOSE**

The owner proposes to construct a recirculation tank and textile fabric filter to improve effluent water quality.

## **3. FACILITY DESCRIPTION**

The current treatment facility is located at 1752 Boot Drive, Camdenton, in Camden County, Missouri. The existing facility consists of a septic tank, ECOPOD, and ultraviolet disinfection. The facility remains with the same design flow of 600 gallons per day and serves two residences. A review of the facility's discharge monitoring reports (DMRs) do not report a discharge from June 2015 to August 2011.

## **4. COMPLIANCE PARAMETERS**

The addition of a recirculation tank and textile fabric filter will increase the removal of organics, solids, and ammonia. Achieving improved performance of the existing treatment system to meet the current effluent limits of:

- BOD<sub>5</sub> limits of 20 mg/L monthly average and 30 mg/L weekly average.
- TSS limits of 20 mg/L monthly average and 30 mg/L weekly average.
- pH range of 6.5 to 9.0.
- Ammonia limits of 4.6 mg/L monthly average and 12.1 mg/L daily maximum.
- E. coli limits of 126 colonies/100 mL monthly average and 630 colonies/100 mL daily maximum.

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

Construction will include the following items:

- A simplex pump station to pump from the existing treatment system to the recirculation tank. The pump is capable of operating at 9 gallon per minute (gpm) at 49-feet of total dynamic head (TDH).
- A 1,000 gallon recirculation tank with a filtered duplex pump vault and an 80/20 splitter valve. Each pump is capable of operating at 50 gpm at 37-feet of TDH.
- One Orenco Systems Inc AdvanTex-AX100 textile fabric filter.

## **6. OPERATING PERMIT MODIFICATION**

Operating permit MO-0134716 will be updated at renewal to include the updated facility description in their next operating permit to reflect the installation of a recirculation tank and an Orenco Systems, Inc. AdvanTex-AX100 textile filter.

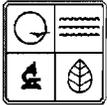
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AP 21805

Water Protection Program

CP0001781

01-038



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH  
**FORM B – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE (≤100,000 gallons per day) UNDER MISSOURI CLEAN WATER LAW**

FOR AGENCY USE ONLY	
CHECK NUMBER	2256
DATE RECEIVED	8/24/15
SEE SUBMITTED	5/1000.00

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**NOTE ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM**

1. This application is for:

- An operating permit and antidegradation review public notice.
- A construction permit following an appropriate operating permit and antidegradation review public notice.
- A construction permit and a concurrent operating permit and antidegradation review public notice.
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- An operating permit for a new or unpermitted facility. Construction Permit # \_\_\_\_\_
- An operating permit renewal: Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_
- An operating permit modification: Permit #MO- \_\_\_\_\_ Reason: \_\_\_\_\_

1.1 Is this a Federal/State Funded Project?  YES  NO Funding Agency/Project #: \_\_\_\_\_

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)?  YES  NO

**2. FACILITY (Outfall 1 of 1)**

NAME McCann at the Lake		TELEPHONE WITH AREA CODE (801) 419-1060	
ADDRESS (PHYSICAL) 1752 Boot Drive	CITY Camdenton	STATE MO	ZIP CODE 65020

2.1 LEGAL DESCRIPTION: NW ¼, NW ¼, NW ¼, Sec. 7, T 38, R 17 Camd County

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

2.3 Name of receiving stream: Lake of the Ozarks

**3. OWNER**

NAME John D McCann		E-MAIL ADDRESS doctorface@gmail.com	TELEPHONE WITH AREA CODE (801) 419-1060
ADDRESS 7339 Pine Ridge Drive	CITY Park City	STATE UT	ZIP CODE 84098

3.1 Request review of draft permit prior to Public Notice?  YES  NO

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

NAME John D McCann		TELEPHONE WITH AREA CODE (801) 419-1060	
ADDRESS 7339 Pine Ridge Drive	CITY Park City	STATE UT	ZIP CODE 84098

**5. OPERATOR**

NAME John D McCann	CERTIFICATE NUMBER Owner	TELEPHONE WITH AREA CODE (801) 419-1060
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**6. FACILITY CONTACT**

NAME John D McCann	TITLE Owner	TELEPHONE WITH AREA CODE (801) 419-1060
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**7.0 ADDITIONAL FACILITY INFORMATION**

7.1 Description of facilities (Attach additional sheet if required). Attach a 1" = 2,000' scale U.S. Geological Survey topographic map showing location of all outfalls and downstream landowners. (See Item 9.)

7.2 Facility SIC code: 495; Discharge SIC code: 495; Facility NAICS code: \_\_\_\_\_; Discharge NAICS code: \_\_\_\_\_.

7.3 Number of people presently connected or population equivalent (P.E.): 7.4 Design P.E. 7.4  
 Number of units presently connected: Homes 1 Trailers 0 Apartments 0 Other 0  
 Design flow for this outfall: 555 Total design flow for the facility: 555 Actual flow for this outfall: 555  
 Commercial Establishment: Daily number of employees working 0 Daily number of customers/guests 0

7.4 Length of pipe in the sewer collection system? 200 feet/miles (Please denote which unit is appropriate.)

7.5 Does any bypassing occur in the collection system or at the treatment facility?  Yes  No (If yes, attach explanation.)

7.6 Does significant infiltration occur in the collection system?  Yes  No (If yes, attach explanation and proposed repair.)

7.7 Is industrial waste discharged to the facility identified in Item 2?  Yes  No (If yes, see instructions.)

7.8 Will the discharge be continuous through the year?  Yes  No  
 a. Discharge will occur during the following months: All 12 Months  
 b. How many days of the week will the discharge occur? All 7 Days

7.9 Is wastewater land applied?  Yes  No (If yes, attach Form I.)

7.10 Will chlorine be added to the effluent?  Yes  No  
 a. If chlorine is added, what is the resulting residual? UV µg/l (micrograms per liter)

7.11 Does this facility discharge to a losing stream or sinkhole?  Yes  No

7.12 Attach a flow chart showing all influents, treatment facilities and outfalls.

7.13 Has a waste load allocation study been completed for this facility?  Yes  No

7.14 List all permit violations, including effluent limit exceedances in the last five years. Attach a separate sheet if necessary.  
 If none, write none. NONE

**8. SLUDGE HANDLING, USE AND DISPOSAL**

- 8.1 Is the sludge a hazardous waste as defined by 10 CSR 25?  Yes  No
- 8.2 Sludge Production, including sludge received from others: .0518 Design Dry Tons/Year .0518 Actual Dry Tons/Year
- 8.3 Capacity of sludge holding structures:  
 Sludge storage provided: \_\_\_\_\_ cubic feet; \_\_\_\_\_ days of storage; \_\_\_\_\_ average percent solids of sludge;  
 No sludge storage is provided.
- 8.4 Type of Storage:  Holding tank  Building  Basin  Other (Please describe) Septic Tank  
 Concrete Pad
- 8.5 Sludge Treatment:  
 Anaerobic Digester  Lagoon  Composting  
 Storage Tank  Aerobic Digester  Other (Attach description)  
 Lime Stabilization  Air or Heat Drying
- 8.6 Sludge Use or Disposal:  
 Land Application  Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)  
 Contract Hauler  Incineration  
 Hauled to Another Treatment Facility  Sludge Retained in Wastewater treatment lagoon  
 Solid Waste Landfill  Other \_\_\_\_\_ Attach explanation sheet.
- 8.7 **PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY**  
 By Applicant  By Others (complete below)

NAME A & A Septic			
ADDRESS PO Box 589	CITY Linn Creek	STATE MO	ZIP CODE 65052
CONTACT PERSON	TELEPHONE WITH AREA CODE (573) 346-5123	PERMIT NO. MO-	

- 8.8 **SLUDGE USE OR DISPOSAL FACILITY**  
 By Applicant  By Others (Please complete below.)

NAME Same as above			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE WITH AREA CODE	PERMIT NO. MO-	

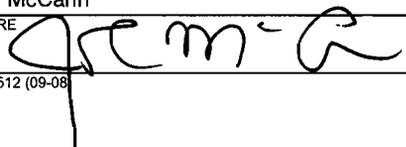
- 8.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?  
 Yes  No (Please attach explanation)

**9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.**

NAME Carroll Vogel			
ADDRESS 1728 Boot Drive	CITY Camdenton	STATE MO	ZIP CODE 65020

**10. DRINKING WATER SUPPLY INFORMATION**

- 10.1 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:  
 A. Public supply (municipal or water district water) \_\_\_\_\_  
 If public, please give name of the public supply \_\_\_\_\_  
 B. Private well Located on site  
 C. Surface water (lake, pond or stream) \_\_\_\_\_
- 10.2 Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)?  
 Yes  No
- 10.3 Does your supply serve housing which is occupied year round by the same people? This does not include housing which is occupied seasonally?  Yes  No
11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) John D McCann	TELEPHONE WITH AREA CODE (801) 419-1060
SIGNATURE 	DATE SIGNED 8/7/15