

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



## CONSTRUCTION PERMIT

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

Meimanat Yousefi  
9200 Colesville Road  
Silver Spring, MD 65681

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.

September 14, 2017  
Effective Date

August 11, 2020  
Modification Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

September 13, 2021  
Expiration Date

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Collection system consisting of septic tank with effluent pumps and pressure pipe will be submitted as a separate construction permit.

Installation of 55 gallon sodium aluminate storage tank with 2 – 31 gallon per day pumps for mixing in 500 gallon chamber of 2000 gallon septic tank with the other 1500 gallons being an aerated coagulation chamber followed by 2 – 1500 gallon settling tanks, 200 linear feet of six-inch Schedule 40 PVC pipe; flow splitter, 2 – 10 feet by 14 feet by 9.5 feet water depth recirculation tanks – each with two – 1.5 horsepower pumps designed for 75 gallons per minute at 45 feet of total dynamic head, 200 linear feet of 2-inch PVC pressure pipe, 2 – 36 feet by 60 feet recirculating sand filter beds, 250 linear feet of six-inch Schedule 40 PVC pipe, 2 - Tipton WWD-UV-2L4 ultraviolet disinfection system units, sample port, 2 – 10 feet by 14 feet by 9.5 feet water depth dosing tanks with four – 2.0 horsepower pumps designed for 41 gallons per minute at 110 feet of total dynamic head, 440 linear feet of 3-inch PVC pressure pipe, 94,350 square feet subsurface drip field divided into 8 zones of 11,793 square feet consisting of 6,739 linear feet of Netafim Bioline dripperline, and all the necessary appurtenances to make the facilities complete and usable. This wastewater treatment facility will serve the 68 lots in Baxter Cove Subdivision with a design flow of 18,870 gallons per day and a population equivalent (PE) of 252.

### **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 M.E. Stalzer & Associates on July 25, 2016 and revisions dated September 5, 2017.

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 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 [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. The Ozarks Clean Water Company will become 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 built if the project was not constructed in accordance with previously submitted plans and specifications; and
  - D. To obtain a MOG823 operating permit, submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ( $\leq 100,000$  gallons per day) along with the \$1000 operating permit fee.

#### **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 proposed facility is no-discharge with drip irrigation; effluent limitations for ammonia are not applicable.

##### **2. CONSTRUCTION PURPOSE**

Facility is to provide wastewater to a proposed development.

##### **3. FACILITY DESCRIPTION**

This is a new wastewater treatment facility. The facility is constructed as no-discharge due to the 303d listing of Table Rock Lake for nutrients. The system will consist of septic tanks, phosphorus removal, recirculating sand filter, ultraviolet disinfection, and drip subsurface dispersal.

##### **4. COMPLIANCE PARAMETERS**

The facility is designed to meet the requirements of MOG823 for subsurface land application. Set-backs distances meet the requirements of the permit and 10 CSR 20-8.020(15)(B).

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

- Phosphorus Settling Tanks – The screened septic tank effluent will flow into the first tank. The first tank is a 2000 gallon tank with a 500 gallon dosing/mixing chamber followed by a 1,500 gallon coagulation chamber. Connected to this tank is a 0.5 hp blower and 2 – 31 gpd alum dosing pumps. Following this tank are 2 – 1500 gallon settling tanks with two compartments each. Settled solids in the settling tanks shall be removed by a contract hauler.
- Recirculation Tank – Construction of Tuf-Tite gravity distribution box to split the flow into two separate parallel recirculation tanks to pump primary treated wastewater to two-adjacent and separate recirculating media filter beds. The recirculation tanks are 10 ft x 14 ft x 11.75 ft deep with a maximum water level depth of 9.5 ft for a wastewater volume of approximately 9950 gallons. Each tank has an effective flow equalization volume of 4200 gallons between the low water level and the high water “on” level. Each recirculation tank has 2 – 1.5 HP submersible pumps – each capable of 75 gpm at 45 ft TDH. The pumps transfer wastewater to three separate zones of the recirculating media filter in each bed by means of a 2-inch PVC distribution manifold which splits the flow into six – 1.5-inch PVC laterals per zone.

- **Recirculating Media Filter** – The 8-inch thick concrete walls and floor recirculating media filter is split into two filter beds with a common wall. Each filter bed is approximately 36ft x 60 ft x 4.67 ft deep each for a total surface area of 4320 ft<sup>2</sup> which gives a total hydraulic loading of 4.5 gpd/ft<sup>2</sup> at design average flow. The PVC laterals spaced two feet apart with 29 – 1/8-inch shielded orifices per lateral. The laterals are located in the center of the top six-inch layer of 3/4-inch pea gravel. The filter media layer is three feet deep containing media with an effective size of 3 mm to 5 mm and a uniformity coefficient less than 2.0. The underdrain layer has an 8-inch layer of 3/4-inch rock. Each filter bed contains four underdrains comprised of four-inch slotted PVC piping with approximate nine-foot spacing. In each filter bed, 48 feet of each underdrain flows by gravity to the recirculation tank while the other 12 feet of each underdrain flows by gravity to the disinfection system which achieves a 4:1 recirculation ratio.
- **Open Channel Ultraviolet (UV)** – two parallel open channel, gravity flow, low pressure high intensity UV disinfection systems capable of treating a peak flow of 100,000 gpd according to manufacturer's literature. No information received regarding the minimum UV intensity of or expected ultraviolet transmissivity. This is not an essential part of the treatment process as disinfection is not required prior to subsurface soil dispersal. Each open channel UV system consists of four modules per bank and one lamp per module. The disinfected effluent will flow by gravity to the subsurface soil dispersal system.
- **Subsurface Soil Dispersal Dosing Tank** –The two dosing tanks are 10 ft x 14 ft x 11.75 ft deep each with a maximum water level depth of 9.5 ft for a wastewater volume of approximately 9950 gallons. Effective flow equalization volume of 4200 gallons between the low water level and the high water "on" level. The recirculation tanks have 4 – 2.0 HP submersible pumps – each capable of 41 gpm at 110 ft TDH. The pumps transfer wastewater to eight separate subsurface drip zones by means of a 3-inch PVC distribution manifold.
- **Subsurface Soil Dispersal System** – The soils at this site are rated for 0.2 gpd/sf. Soil morphology review was conducted during the construction permit application review and on site soils were determined to be acceptable for this system.

**Drip** – The facility has selected the NETAFIM subsurface drip dispersal system. The system will dose 8 zones at 0.2 gpd/sq. ft, which provides 4 dosings per day per zone. Each zone is 0.27 acres, for a total of 2.2 acres. 8 combo air/vacuum release valves will be installed. The hydraulic loading of the recirculating sand filter is 4.5 gpd and is designed to treat to BOD<sub>5</sub> and TSS of 270 mg/l prior to the drip field. The drip field area is 94,350 square feet and contains 47,175 linear feet of x inch tubing fitted with emitters every 2 ft and capable of a loading at peak flow of less than 0.2 gallons per sq. foot per day.

**6. OPERATING PERMIT APPLICATION**

A MOG823 operating permit will be required following construction. Upon construction completion, submit a Statement of Work Completed, \$1000 operating permit fee, and Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ( $\leq 100,000$  gallons per day).

**7. CONSTRUCTION PERMIT MODIFICATION**

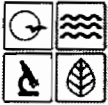
This construction permit was modified upon the request of the owner on September 3, 2019 and August 6, 2020 to extend the expiration date, the new expiration date is October 1, 2021.

Keith Forck  
Engineering Section  
[keith.forck@dnr.mo.gov](mailto:keith.forck@dnr.mo.gov)

RECEIVED  
JUL 25 2016

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MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
APPLICATION FOR CONSTRUCTION PERMIT -  
WASTEWATER FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
SEE RECEIVED \$1000.00	CHECK NO. 157
DATE RECEIVED 7-25-16	

**APPLICATION OVERVIEW**

The Application for Construction Permit - Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?  
☒ YES Date of Approval: DE
- 1.4 Has the department approved the proposed project's facility plan\*?  
☒ YES Date of Approval: 12/1/2015 ☐ NO ☐ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report\* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?  
☐ YES ☐ NO
- 1.6 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
- 1.7 Is a summary of design\* included with this application? ☒ YES ☐ NO
- 1.8 Is a general operating permit applicable?  
☒ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.  
☐ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☐ B ☐ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.)

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

**2.0 PROJECT INFORMATION**

**2.1 NAME OF PROJECT**

BAXTER COVE WWTF

**2.2 PROJECT DESCRIPTION**

18870 GPD RECIRCULATING GRAVEL FILTER BED WITH 94089 SF SUBSURFACE DRIP FIELD

**2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION**

CONTRACT HAULER

**2.4 DESIGN INFORMATION**

- A. Current population: \_\_\_\_\_; Design population: 252
- B. Actual Flow: \_\_\_\_\_ gpd; Design Average Flow: 18870 gpd;  
Actual Peak Daily Flow: \_\_\_\_\_ gpd; Design Maximum Daily Flow: \_\_\_\_\_ gpd;  
Design Wet Weather Event: \_\_\_\_\_

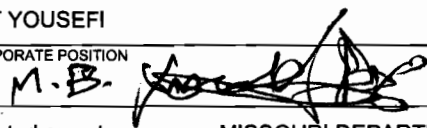
**2.5 ADDITIONAL INFORMATION**

- A. Is a topographic map attached? ☒ YES ☐ NO
- B. Is a process flow diagram attached? ☒ YES ☐ NO

**2.6 ESTIMATED PROJECT CONSTRUCTION COST**

\$ 290,000.00



3.0 WASTEWATER TREATMENT FACILITY				
NAME BAXTER COVE WWTF		TELEPHONE NUMBER WITH AREA CODE (301) 332-9492		EMAIL ADDRESS
ADDRESS (PHYSICAL) SHODACK ROAD	CITY LAMPE	STATE MO	ZIP CODE 65681	COUNTY STONE
Wastewater Treatment Facility: Mo- (Outfall Of )				
3.1 Legal Description: ¼, ¼, ¼, Sec. 26, T 22, R 24 (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: UNNAMED TRIBUTARY TO TABLE ROCK LAKE				
4.0 PROJECT OWNER				
NAME MEIMANAT YOUSEFI		TELEPHONE NUMBER WITH AREA CODE (301) 332-9492		EMAIL ADDRESS
ADDRESS 9200 COLESVILLE ROAD	CITY SILVER SPRING	STATE MD	ZIP CODE 20910	
5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.				
NAME MEIMANAT YOUSEFI		TELEPHONE NUMBER WITH AREA CODE (301) 332-9492		EMAIL ADDRESS
ADDRESS 9200 COLESVILLE ROAD	CITY SILVER SPRING	STATE MD	ZIP CODE 20910	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> 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? <input checked="" type="checkbox"/> YES <input type="checkbox"/> 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? <input checked="" type="checkbox"/> YES <input type="checkbox"/> 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? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME MICHAEL STALZER, P.E.		TELEPHONE NUMBER WITH AREA CODE (417) 860-9697		EMAIL ADDRESS
ADDRESS 15708 REDINGTON DR	CITY BRANSON	STATE MO	ZIP CODE 65616	
7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and 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 Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.				
PROJECT OWNER SIGNATURE				
PRINTED NAME MEIMANAT YOUSEFI			DATE 6-13-2016	
TITLE OR CORPORATE POSITION OWNER M.B. 		TELEPHONE NUMBER WITH AREA CODE (301) 332-9492		EMAIL 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.				