

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



**CONSTRUCTION PERMIT**

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

Stephen Maulden  
VP of Real Estate and Construction  
Getaway House  
147 Prince Street  
Brooklyn, NY 11201

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.

February 3, 2022  
Effective Date

February 2, 2024  
Expiration Date

  
Chris Wieberg, Director, Water Protection Program

## CONSTRUCTION PERMIT

### I. CONSTRUCTION DESCRIPTION

#### General Systems

The new subsurface dispersal system will include four separate conventional systems in 3 different clearings labeled as Clearing 1A, Clearing 1B, Clearing 2, and Clearing 3. Each RV campsite and the manager's apartment building will have its own sewage pump with 2 inch force mains to convey wastewater to the first septic tank of each system. All four systems will use Quick 4 Equalizer Chambers by Infiltrator Water Technologies.

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.

#### Clearing 1A

The conventional system for Clearing 1A will have two 1,500 gallon septic tanks, a 1,500 gallon pump tank and 4 dispersal zones. Clearing 1A will receive 1,660 gpd dispersed over 4,150 sq. ft. at a rate of 0.4 gpd/sq. ft.

#### Clearing 1B

The conventional system for Clearing 1B will have two 1,500 gallon septic tanks, a 1,500 gallon pump tank and 4 dispersal zones. Clearing 1B will receive 1,440 gpd dispersed over 3,600 sq. ft. at a rate of 0.4 gpd/sq. ft..

#### Clearing 2

The conventional system for Clearing 2 will have one 2,000 gallon septic tank, a 1,000 gallon pump tank and 2 dispersal zones. Clearing 2 will receive 540 gpd dispersed over 1,350 sq. ft. at a rate of 0.4 gpd/sq. ft.

#### Clearing 3

The conventional system for Clearing 3 will have one 2,000 gallon septic tank, a 1,000 gallon pump tank and 2 dispersal zones. Clearing 3 will receive 720 gpd dispersed over 1,800 sq. ft. at a rate of 0.4 gpd/sq. ft..

### 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 Justin Johnson, P.E. with Ragan Smith Associates, 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 Southeast 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 0.4 gallons per square foot per day.
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. 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.
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 <https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem>. See <https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting> for more information.

9. A United States Army Corps of Engineers (USACE) Clean Water Act Section 404 Department of the Army permit and a Section 401 Water Quality Certification issued by the Department may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied or notification is provided that no Section 404 permit is required by the USACE. You must contact your local USACE district since they determine what waters are jurisdictional and which permitting requirements may apply. You may call the Department's Water Protection Program, Operating Permits Section at 573-522-4502 for more information. See <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality> for more information.
10. 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)
  - There shall be no physical connections between a public or private potable water supply system and a sewer or appurtenance that would permit the passage of any wastewater or polluted water into the potable supply. 10 CSR 20-8.120 (5) (A)
  - Sewers shall be laid at least fifty feet (50') in a horizontal direction from any existing or proposed public water supply well or other water supply sources or structures. Sewers must also comply with 10 CSR 23-3.010. 10 CSR 20-8.120 (5) (B)
  - The distance between wastewater pumping stations and all potable water sources shall be at least fifty feet (50') in accordance with 10 CSR 23-3.010(1)(B). 10 CSR 20-8.130 (2) (D)
  - The minimum diameter service line pipe shall be one and one quarter inches (1.25"). 10 CSR 20-8.125 (5) (C)
  - Multiple unit grinder pump stations must be owned, operated, and maintained by an approved continuing authority. See subsection (4)(A) of this rule for more continuing authority information. 10 CSR 20-8.125 (5) (D) 1. B.
  - Grinder pump vaults shall be watertight. 10 CSR 20-8.125 (5) (D) 2.
  - A grinder pump vault shall have a storage volume of at least seventy (70) gallons. 10 CSR 20-8.125 (5) (D) 3.
  - The following valves must be provided in the grinder pump vaults: 10 CSR 20-8.125 (5) (D) 4.
    - A shutoff valve accessible from the ground surface;
    - A check valve to prevent backflow; and
    - An anti-siphon valve, where siphoning could occur.
  - Grinder pump stations shall meet the applicable requirements under section 10 CSR 20-8.130 (3) of this rule, except as modified in this section. 10 CSR 20-8.130 (5)
    - Submersible pumps shall be readily removable and replaceable without personnel entering, dewatering, or disconnecting any piping in the wet well.

- Valves shall be located in a separate valve chamber.
- A minimum access hatch dimensions of twenty-four inches by thirty-six inches (24" x 36") shall be provided.
- A portable pump connection on the discharge line with rapid connection capabilities shall be provided.
- 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)
- Electrical Equipment shall utilize corrosive resistant equipment located in the wet well. 10 CSR 20-8.130 (3) (B) 2. B.
- Electrical Equipment shall provide a watertight seal and separate strain relief for all flexible cable. 10 CSR 20-8.130 (3) (B) 2. C.
- Install a fused disconnect switch located above ground for the main power feed for all pumping stations. 10 CSR 20-8.130 (3) (B) 2. D.
- When electrical equipment is exposed to weather, it shall comply with the requirements of weather proof equipment; enclosure NEMA 4; NEMA 4X where necessary; and *NEMA Standard 250-2014*, published December 15, 2014. 10 CSR 20-8.130 (3) (B) 2. E.
- Provide Ground Fault Circuit Interruption (GFCI) protection for all outdoor receptacles. 10 CSR 20-8.130 (3) (B) 2. H.
- When the continuing authority operates and maintains the grinder pump stations, provisions must be made for periods of mechanical or power failure. 10 CSR 20-8.125 (5) (D) 8.
- Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140 (2) (D)
- 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)
- 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 three hundred feet (300'). 10 CSR 20-8.140 (2) (C) 1.
- All wastewater treatment facilities must have a screening device, comminuter, or septic tank for the purpose of removing debris and nuisance materials from the influent wastewater. 10 CSR 20-8.150 (2)
- 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 septic tank must have a minimum capacity of at least one thousand (1,000) gallons. 10 CSR 20-8.180 (2) (A)

- The septic tank shall be baffled. 10 CSR 20-8.180 (2) (B)
- 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.
- The vertical separation between the bottom of the drip lines and/or the trench and a limiting layer, including but not limited to, bedrock; restrictive horizon; or seasonal high water table, shall be no less than:
  - Twenty-four inches (24"); 10 CSR 20-8.200 (7) (A) 2. A. or
  - Twelve inches (12") for systems dispersing secondary or higher quality effluent; 10 CSR 20-8.200 (7) (A) 2. B. or
  - Forty-eight inches (48") where karst features are present unless the site can be reclassified. 10 CSR 20-8.200 (7) (A) 2. C.
- Subsurface systems shall be, at a minimum, preceded by preliminary treatment. 10 CSR 20-8.200 (7) (B)
- Loading rates shall not exceed the values assigned by the site and soil evaluation. 10 CSR 20-8.200 (7) (C)
- All network piping and low pressure distribution piping and fittings with polyvinyl chloride (PVC) shall meet ASTM Standard D 1785 *Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, or 120* as approved and published August 1, 2015, or equivalent rated to meet or exceed ASTM D2466 *Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings* as approved and published August 1, 2017. These standards shall hereby be incorporated by reference into this rule, as published by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. This rule does not incorporate any subsequent amendments or additions. 10 CSR 20-8.200 (8) (A) 2.

11. Upon completion of construction:

- A. Getaway Lawrenceton, LLC will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications; and
- C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N). Identify that the application is for a General permit for land application of domestic wastewater, MO-G823190.

Form B Application for an Operating Permit for Domestic or Municipal Wastewater ( $\leq 100,000$  gallons per day) and fee of \$150 have already been submitted to the Department.

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

##### **1. CONSTRUCTION PURPOSE**

The permitted subsurface wastewater dispersal system is designed for a micro-cabin RV Lodging Park. The new system will be constructed for the new RV Park facility.

##### **2. FACILITY DESCRIPTION**

There are no existing wastewater treatment systems for this facility. Four conventional subsurface systems will be constructed to treat and disperse wastewater from a new RV Park. Domestic Wastewater will be treated from RV campers, an apartment, and a small laundromat.

###### **Clearing 1A**

The conventional system for Clearing 1A will have two 1,500 gallon septic tanks, a 1,500 gallon pump tank and 4 chamber dispersal zones. Clearing 1A will receive 1,660 gpd of preliminary treated wastewater dispersed over 4,150 sq. ft. at a rate of 0.4 gpd/sq. ft..

###### **Clearing 1B**

The conventional system for Clearing 1B will have two 1,500 gallon septic tanks, a 1,500 gallon pump tank and 4 chamber dispersal zones. Clearing 1B will receive 1,440 gpd of preliminary treated wastewater dispersed over 3,600 sq. ft. at a rate of 0.4 gpd/sq. ft.

###### **Clearing 2**

The conventional system for Clearing 2 will have one 2,000 gallon septic tank, a 1,000 gallon pump tank and 2 chamber dispersal zones. Clearing 2 will receive 540 gpd of preliminary treated wastewater dispersed over 1,350 sq. ft. at a rate of 0.4 gpd/sq. ft.

###### **Clearing 3**

The conventional system for Clearing 3 will have one 2,000 gallon septic tank, a 1,000 gallon pump tank and 2 chamber dispersal zones. Clearing 3 will receive 720 gpd of preliminary treated wastewater dispersed over 1,800 sq. ft. at a rate of 0.4 gpd/sq. ft.

The Getaway Lawrenceton WWTF is located at 7555 MO Road Y, Lawrenceton, in Ste. Genevieve County, Missouri. The facility has a design average flow of 4,360 gpd for all 4 systems and serves a hydraulic population equivalent of approximately 102 people.

##### **3. COMPLIANCE PARAMETERS**

The permitted project shall meet the requirements of MO-G823000, Land Application of Domestic Wastewater with an expiration date of August 24, 2022. The facility shall

follow the Subsurface Dispersal Operational Requirements of MOG823000. Please reference the Department's website for itemized requirements.

MOG823000 Land Application of Domestic Wastewater:

<https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater/land-application-domestic-wastewater-mo-g823000>

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

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

There are no existing wastewater treatment components constructed at the project site.

**Construction will cover the following items:**

##### **Clearing 1A**

- Components are designed for a Population Equivalent of 104 based on hydraulic loading to the system.
- Sewage Pumps and Force mains – Liberty Sewage Pumps will be used to convey raw wastewater to the Clearing 1A subsurface dispersal system. The Liberty pump types include LE40 (campsites 2, 4, and 6) and LE50 duplex (apartment and laundromat) that convey wastewater to Septic Tank 1A-1 via a 2 inch force main.
- Septic Tanks 1A-1 & 1A-2 – A septic tank provides passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Raw wastewater will flow from the force mains to the first unbaffled 1,500 gallon Septic Tank 1A-1. From the Septic Tank 1A-1 outlet tee, Wastewater will flow by gravity to Septic Tank 1A-2, a baffled 1,500 gallon tank. An Orenco 12 inch biotube effluent filter (FT 1200 series) will be installed on the outlet of Septic Tank 1A-2. The septic tanks provide approximately 0.90 days of detention individually at design average flow for a total of 1.8 days of detention time together. Settled solids in the septic tanks shall be removed by a contract hauler.
- Pump Tank 1A – Raw wastewater will flow by gravity from Septic Tank 1A-2 to the 1,500 gallon single-compartment Pump Tank 1A. When the water level reaches a certain height, the pump-on float will actuate duplex effluent pumps, Liberty 280-Series, each capable of 14 gpm at 8 ft of TDH until the pump-off float is actuated. A high level alarm float will also be installed along with a control panel 280-AE24L=3. Floats will be adjusted to deliver 200 gallon doses. The Pump Tank 1A provides approximately 0.9 days of detention at design average flow. Settled solids in the Pump Tank 1A shall be removed by a contract hauler.
- Conventional – The conventional subsurface dispersal system is divided into 4 zones with a total of 1,556 ft of chambers.
  - Each chamber is a 22 inch wide Quick4 Equalizer 36 chamber by Infiltrator Water Technologies, installed in a 24 inch wide trench at lengths specified in the construction plans. Trenches are spaced 10 feet on center.



- A 1.25 inch supply line extends into each chamber for the full length of each chamber and has 0.25 inch orifices spaced 8 inches apart extending the full length of each lateral. Each orifice is 0.25 inches in diameter, oriented upward.
- The manifold lines range from 35 ft long for zone 2 and the longest manifold line is 128 ft for zone 4.
- K-Rain Hydrotek 6404 indexing valve will be used for 4 zones.
- The total area needed for loading is 4,150 square feet.

### **Clearing 1B**

- Components are designed for a Population Equivalent of 48 based on hydraulic loading to the system.
- Sewage Pumps and Force mains – Liberty Sewage Pumps will be used to convey raw wastewater to the Clearing 1B subsurface dispersal system. The Liberty pump types include LE100 (campsites 1, 3, and 5) and LE50 (campsites 7 - 19) that convey wastewater to Septic Tank 1B-1 via a 2 inch force main.
- Septic Tanks 1B-1 & 1B-2 – A septic tank provides passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Raw wastewater will flow from the force mains to the first unbaffled 1,500 gallon Septic Tank 1B-1. From the Septic Tank 1B-1 outlet tee, Wastewater will flow by gravity to Septic Tank 1B-2, a baffled 1,500 gallon tank. An Orenco 12 inch biotube effluent filter (FT 1200 series) will be installed on the outlet of Septic Tank 1B-2. The septic tanks provide approximately 1.0 days of detention individually at design average flow. Two septic tanks in series will achieve 2.1 days of total detention time. Settled solids in the septic tank shall be removed by a contract hauler.
- Pump Tank 1B – Raw wastewater will flow by gravity from Septic Tank 1B-2 to the 1,500 gallon single-compartment Pump Tank 1B. When the water level reaches a certain height, the pump-on float will actuate duplex effluent pumps, Liberty 280-Series, each capable of at least 13 gpm at 8 ft of TDH until the pump-off float is actuated. A high level alarm float will also be installed along with a control panel 280-AE24L=3. Floats will be adjusted to deliver 175 gallon doses. The Pump Tank 1B provides approximately 1.0 days of detention at design average flow. Settled solids in the Pump Tank 1B shall be removed by a contract hauler.
- Conventional – The conventional subsurface dispersal system is divided into 4 zones with a total of 1,607 ft of chambers.
  - Each chamber is a 22 inch wide Quick4 Equalizer 36 chamber by Infiltrator Water Technologies, installed in a 24 inch wide trench at lengths specified in the construction plans. Trenches are spaced 10 feet on center.
  - A 1.25 inch supply line extends into each chamber for the full length of each chamber and has 0.25 inch orifices spaced 8 inches apart extending the full length of each lateral. Each orifice is 0.25 inches in diameter, oriented upward.
  - The manifold line ranges from 58 ft long for zone 4 and the longest manifold line is 218 ft for zone 1.
  - K-Rain Hydrotek 6404 indexing valve will be used for 4 zones.
  - The total area needed for loading is 3,600 square feet.

## **Clearing 2**

- Components are designed for a Population Equivalent of 18 based on hydraulic loading to the system.
- Sewage Pumps and Force mains – Liberty Sewage Pumps will be used to convey raw wastewater to the Clearing 2 subsurface dispersal system. The Liberty pump types include LE50 for campsites 20-28 will convey wastewater to Septic Tank 2 via a 2 inch force main.
- Septic Tank 2 –A septic tank provides passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Raw wastewater will flow from the force mains to the baffled 2,000 gallon Septic Tank 2. An Orenco 12 inch biotube effluent filter (FT 1200 series) will be installed on the outlet of Septic Tank 2. Septic Tank 2 provides approximately 3.7 days of detention at design average flow. Settled solids in the septic tank shall be removed by a contract hauler.
- Pump Tank 2 – Preliminary treated wastewater will flow by gravity from Septic Tank 2 to the 1,000 gallon single-compartment Pump Tank 2. When the water level reaches a certain height, the pump-on float will actuate duplex effluent pumps, Liberty 280-Series, each capable of at least 13 gpm at 8 ft of TDH until the pump-off float is actuated. A high level alarm float will also be installed along with a control panel 280-AE24L=3. Floats will be adjusted to deliver 125 gallon doses. The Pump Tank 2 provides approximately 1.9 days of detention at design average flow. Settled solids in the Pump Tank 2 shall be removed by a contract hauler.
- Conventional – The conventional subsurface dispersal system is divided into 2 zones with a total of 527 ft of chambers.
  - Each chamber is a 22 inch wide Quick4 Equalizer 36 chamber by Infiltrator Water Technologies, installed in a 24 inch wide trench at lengths specified in the construction plans. Trenches are spaced 10 feet on center.
  - A 1.25 inch supply line extends into each chamber for the full length of each chamber and has 0.25 inch orifices spaced 8 inches apart extending the full length of each lateral. Each orifice is 0.25 inches in diameter, oriented upward.
  - The manifold line is 37 ft long for zone 1 and 121 ft for zone 2.
  - K-Rain Hydrotek 6402 indexing valve will be used for 2 zones.
  - The total area needed for loading is 1,350 square feet.

## **Clearing 3**

- Components are designed for a Population Equivalent of 24 based on hydraulic loading to the system.
- Sewage Pumps and Force mains – Liberty Sewage Pumps will be used to convey raw wastewater to the Clearing 3 subsurface dispersal system. The Liberty pump types include LE40 (campsites 33, 37, 39, and 40) and LEH100 (campsites 29-32, 34-36, and 38) and will convey wastewater to Septic Tank 3 via a 2 inch force main.

- Septic Tank 3 – A septic tank provides passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Raw wastewater will flow from the force mains to the baffled 2,000 gallon Septic Tank 3. An Orenco 12 inch biotube effluent filter (FT 1200 series) will be installed on the outlet of Septic Tank 3. Septic Tank 3 provides approximately 2.8 days of detention at design average flow. Settled solids in the septic tank shall be removed by a contract hauler.
- Pump Tank 3 – Preliminary treated wastewater will flow by gravity from Septic Tank 3 to the 1,000 gallon single-compartment Pump Tank 3. When the water level reaches a certain height, the pump-on float will actuate duplex effluent pumps, Liberty 280-Series, each capable of at least 13 gpm at 8 ft of TDH until the pump-off float is actuated. A high level alarm float will also be installed along with a control panel 280-AE24L=3. Floats will be adjusted to deliver 175 gallon doses. The Pump Tank 3 provides approximately 1.4 days of detention at design average flow. Settled solids in the Pump Tank 3 shall be removed by a contract hauler.
- Conventional – The conventional subsurface dispersal system is divided into 2 zones with a total of 732 ft of chambers.
  - Each chamber is a 22 inch wide Quick4 Equalizer 36 chamber by Infiltrator Water Technologies, installed in a 24 inch wide trench at lengths specified in the construction plans. Trenches are spaced 10 feet on center.
  - A 1.25 inch supply line extends into each chamber for the full length of each chamber and has 0.25 inch orifices spaced 8 inches apart extending the full length of each lateral . Each orifice is 0.25 inches in diameter, oriented upward.
  - The manifold line ranges from 26 ft long for zone 1 to 59 ft for zone 2.
  - K-Rain Hydrotek 6402 indexing valve will be used for 2 zones.
  - The total area needed for loading is 1,800 square feet.

### **Soils Report**

- Subsurface Soil Dispersal System – The soils over the entire site are rated for 0.5 - 0.3 gpd/sq. ft. The facility decided to use a design application rate of 0.4 gpd/sq. ft. for all four conventional systems. Soil morphology review was conducted before the construction permit application and engineering report review. On site soils were determined to be acceptable for this system. The soil investigation was completed by Matthew W. Roth, Certified Soil Scientist with On-Site Soils, Inc. on September 20, 2021.
- Soils Report. In the soils investigation, there were 35 test pits dug over the entire site. Ten soil morphology descriptions were included in the soils report. Four pits were dug in the dispersal zones and are characteristic of the subsurface dispersal areas.
  - Soil Test Pit #3, located in Clearing Area 1B, had a surface soil that was described as silt loam with an application rating of 0.4 gallons per square foot per day for a conventional system up to 40 inches below ground surface.
  - Soil Test Pit #4, located in Clearing Area 1A, had a surface soil that was described as silt loam with an application rating of 0.4 gallons per square foot per day for a conventional system up to 38 inches below ground surface.

- Soil Test Pit #5, located in Clearing Area 2, had a surface soil that was described as silt loam with an application rating of 0.4 gallons per square foot per day for a conventional system up to 36 inches below ground surface.
- Soil Test Pit #10, located in the Clearing 3 area, had a surface soil that was described as silt loam with an application rating of 0.4 gallons per square foot per day for a conventional system up to 36 inches below ground surface.

## **5. OPERATING PERMIT**

After completion of construction project submit:

- Wastewater Construction Statement of Work Completed, Form MO 780-2155, <https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155>, and
- As-builts if the project was not constructed in accordance with previously submitted plans and specifications.

Missouri State Operating Permit, General Permit MO-G823190, will be issued after receipt of the above documents. Operating Permit application Form B and Form I have already been submitted to the Department along with the application fee of \$150.

## **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>

Steve Hamm, P.E.  
Engineering Section  
[Steven.hamm@dnr.mo.gov](mailto:Steven.hamm@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: \_\_\_\_\_  
☐ Enclosed is the appropriate operating permit application and fee submittal. Denote which form: ☐ A ☐ B ☐ B2  
☐ N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? ☐ YES ☐ NO
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☐ NO
- 1.9 Is the appropriate fee or JetPay confirmation included with this application? ☐ YES ☐ NO  
See Section 7.0

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

**2.0 PROJECT INFORMATION**

2.1 NAME OF PROJECT	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$
2.3 PROJECT DESCRIPTION	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION	
2.5 DESIGN INFORMATION A. Current population: _____; Design population: _____ B. Actual Flow: _____ gpd; Design Average Flow: _____ gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____	
2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? <input type="checkbox"/> YES <input type="checkbox"/> NO B. Is a process flow diagram attached? <input type="checkbox"/> YES <input type="checkbox"/> NO	

<b>3.0 WASTEWATER TREATMENT FACILITY</b>				
NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS (PHYSICAL)		CITY	STATE	ZIP CODE COUNTY
Wastewater Treatment Facility: Mo- (Outfall Of )On-Site sub-surface wastewater disposal system				
3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. _____, T _____, R _____ (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): _____ Northing (Y): _____ For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: _____				
<b>4.0 PROJECT OWNER</b>				
NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS		CITY	STATE	ZIP CODE
<b>5.0 CONTINUING AUTHORITY:</b> A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.				
NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS		CITY	STATE	ZIP CODE
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input 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 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 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 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 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 type="checkbox"/> YES <input type="checkbox"/> NO				
<b>6.0 ENGINEER</b>				
ENGINEER NAME / COMPANY NAME		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS		CITY	STATE	ZIP CODE
<b>7.0 APPLICATION FEE</b> <span style="color: red; font-weight: bold; font-size: 1.2em;">\$1000</span>				
<input type="checkbox"/> CHECK NUMBER <input type="checkbox"/> JETPAY CONFIRMATION NUMBER				
<b>8.0 PROJECT OWNER:</b> 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	
TITLE OR CORPORATE POSITION		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
<b>END OF PART A.</b> <b>REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.</b>				