

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Gary Buhrman
HVO Hidden Valley Outfitters LLC
27101 Marigold Lane
Lebanon, MO 65536

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.

December 28, 2023
Effective Date

December 27, 2025
Expiration Date



John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

A wastewater treatment system with six 2,000 gallon septic tanks, flow is pumped from first two tanks to the next four tanks; two 2,000 gallon LPP drainfield dosing tanks equipped with effluent pumps; a soil absorption field with an area of approximately 42,000 square feet, separated into 4 cells, each cell has 6 zones, each zone has approximately 350 lineal feet of 1.5-inch LPP distribution pipe, dosing rate is 0.20 gallons/sq. ft./day; complete and usable to treat the waste from a population equivalent of 50, with a design average daily flow of 4,950 gallons. This is a non-discharging facility to be located in the SW ¼, Sec. 30, T35N, R17W, Laclede County, Missouri.

Drainfield approximate location: UTM (zone 15) X = 512,415 Y = 4,177,180

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

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publicly-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.

2. All construction shall be consistent with plans and specifications signed and sealed by Seth Coggin, P.E., with Total Environmental Services, 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 Southwest 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. 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 <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.
7. 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.
8. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - Flood protection shall apply to new construction and to existing facilities undergoing major modification. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100-year flood elevation. 10 CSR 20-8.140(2)(B). 10 CSR 20-8.130 (2) (A).

- Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 feet. 10 CSR 20-8.140 (2) (C) 1.
- All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140 (7) (A) 1.
- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 National Electric Code (NEC) (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140 (7) (B)
- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140 (7) (C).
- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140 (7) (D) 1.
- All wastewater treatment facilities must have a screening device, comminutor, or septic tank for the purpose of removing debris and nuisance materials from the influent wastewater. 10 CSR 20-8.150 (2).
- A septic tank must have a minimum capacity of at least 1,000 gallons. 10 CSR 20-8.180 (2) (A).
- The septic tank shall be baffled. 10 CSR 20-8.180 (2) (B).
- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140 (7) (E)
- Subsurface systems shall—
 - o Exclude unstabilized fill and soils that have been highly compacted and/or disturbed, such as old roadbeds, foundations, or similar things; 10 CSR 20-8.200 (7) (A) 1. A.
 - o Provide adequate surface drainage where slopes are less than two percent; 10 CSR 20-8.200 (7) (A) 1. B
 - o 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
 - o Have a 10 foot buffer from the property line. 10 CSR 20-8.200 (7) (A) 1. D
- The vertical separation between the bottom of the trench and a limiting layer, including but not limited to, bedrock; restrictive horizon; or seasonal high-water table, shall be no less than:
 - o Twenty-four inches (24"); 10 CSR 20-8.200 (7) (A) 2. A.
- 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, P.O. 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.

- Manifold design for LPP systems shall address freeze protection while assuring uniform distribution and to minimize drain down of laterals into other laterals at a lower elevation between dosing events. 10 CSR 20-8.200 (8) (A) 3.

9. Upon completion of construction:

- A. Submit an electronic copy of the as built's if the project was not constructed in accordance with previously submitted plans and specifications; and
- B. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (<https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155>) and submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ($\leq 100,000$ gallons per day) and fee to the Engineering Section of the Water Protection Program 60 days prior to operation. Missouri State Operating Permit MO-G823080 will be appropriately modified.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Construction is to install a wastewater treatment system to serve a campground expansion of 55 RV lots.

2. FACILITY DESCRIPTION

Existing treatment facilities at Hidden Valley Outfitters consist of 4 separate LPP subsurface soil absorption wastewater treatment systems. The four systems range in capacity from 720 gpd to 1,500 gpd; with a total combined design flow of 4,620 gpd.

New treatment system will serve an expansion of RV spots. Wastewater treatment system to consist of septic tanks, dosing tanks, and four LPP subsurface soil absorption fields with a total design flow of 4,950 gpd.

Hidden Valley Outfitters is owned by HVO Hidden Valley Outfitters LLC and is located at 27101 Marigold Lane, Lebanon, Laclede County, Missouri. After construction the 5 soil absorption systems the facility will have a total combined design flow of 9,570 gpd.

3. COMPLIANCE PARAMETERS

The proposed wastewater treatment facilities will be a complete no-discharge treatment facility. All liquid waste will be treated and disposed on-site. Periodic removal of waste sludge will be necessary. A Missouri State Operating Permit is required to be maintained. Monitoring of the facility will be required along with keeping records of maintenance activities. There are currently no sampling requirements.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The project is a treatment facility for 55 RV sites at an existing campground. Design flow is based on 90 gpd/RV/day.

Treatment system with two 2,000 gallon septic tanks connected in series; a pump system equipped with two 0.5 HP effluent pumps in a biotube filter (PVU68-1819), each with a capacity of 11 gpm at a TDH of 118 feet, 1,192 feet of 2-inch SDR-21 PVC, flow splitting into two trains; each train has two 2,000 gallon septic tanks with a biotube filter (PVU68-1819) followed by a 2,000 gallon dosing tank, equipped with two 1.0 HP effluent pumps in a biotube filter, field adjusted dosing rate of approximately 39.5 gpm, 2-inch PVC manifold pipe.

A soil absorption field with an area of approximately 42,000 square feet, separated into 4 cells with 6 zones each cell; automatic distributing valves for zone selection; approximate effective zone size of 1,750 sq. ft. with 350 lineal feet of 1.5-inch LPP distribution pipe, 5 laterals, 70 feet each, placed 5 feet on center; LPP trench bottom is approximately 13 inches below grade; at design flow each zone will be dosed approximately 3 times a day for approximately 1.9 minutes. Design flow is 4,950 gpd.

Treatment facility drain fields are more than 300 feet from the public water supply well.

All absorption field sizes are based on a loading rate of 0.2 gallons per square foot per day. Actual loading rate is less due to oversized absorption fields. Detailed soil analysis (soil pit #7) was performed by Richard Henderson, soil scientist, May 12, 2015. The soil loading rate is in accordance with the recommended rates in the soil report. Depth to limiting layer is greater than 48 inches.

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 modification fee of \$37.50 has been submitted. Missouri State Operating Permit, General Permit MO-G823080, will be modified after receipt of the above documents.

[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 MO 780-1512 | Missouri Department of Natural Resources](#)

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>

Andrew Appelbaum, P.E.
Engineering Section
andy.appelbaum@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: _____
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: _____ NO N/A (If Not Applicable, complete No. 1.4.)
- 1.4 [Complete only if answered Not Applicable on No. 1.3.] 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
- 1.5 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 submittal. Denote which form: A B B2
 N/A Please explain: _____
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? YES NO
- 1.9 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

Hidden Valley Outfitters

2.2 PROJECT DESCRIPTION

Construction of low pressure pipe soil dispersion and treatment field.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Pump and haul from septic tanks as needed

2.4 DESIGN INFORMATION

- A. Current population: _____; Design population: 55
- B. Actual Flow: _____ gpd; Design Average Flow: 4125 gpd;
 Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: 4125 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

3.0 WASTEWATER TREATMENT FACILITY				
NAME Hidden Valley Outfitters		TELEPHONE NUMBER WITH AREA CODE 417-533-5628		E-MAIL ADDRESS info@hvoutfitters.com
ADDRESS (PHYSICAL) 27101 Marigold Lane	CITY Lebanon	STATE MO	ZIP CODE 65536	COUNTY Laclede
Wastewater Treatment Facility: Mo- (Outfall Of)				
3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. 30, T 35N, R 17W (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: <u>Niangua</u>				
4.0 PROJECT OWNER				
NAME Gary Buhrman		TELEPHONE NUMBER WITH AREA CODE (417) 533-5628		E-MAIL ADDRESS info@hvoutfitters.com
ADDRESS 27101 Marigold Lane	CITY Lebanon	STATE MO	ZIP CODE 65536	
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 Hidden Valley Outfitters		TELEPHONE NUMBER WITH AREA CODE (417) 533-5628		E-MAIL ADDRESS info@hvoutfitters.com
ADDRESS 27101 Marigold Lane	CITY Lebanon	STATE MO	ZIP CODE 65536	
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 type="checkbox"/> YES <input checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Seth A. Coggin, PE, Total Environmental Services, Inc		TELEPHONE NUMBER WITH AREA CODE (573) 346-3810		E-MAIL ADDRESS sethcoggin@totalenvironmental.com
ADDRESS PO Box 510	CITY Osage Beach	STATE MO	ZIP CODE 65065	
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 <i>Merlin C. Lowe</i>				
PRINTED NAME <i>Merlin C. Lowe</i>			DATE <i>5-18-2023</i>	
TITLE OR CORPORATE POSITION <i>General Contractor</i>		TELEPHONE NUMBER WITH AREA CODE <i>417-531-0555</i>		E-MAIL 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.

PART B – LAND APPLICATION ONLY**(Submit only if the proposed construction project includes land application of wastewater.)****8.0 FACILITY INFORMATION**

8.1 Type of wastewater to be irrigated: Domestic State/National Park Seasonal business
 Municipal Municipal with a pretreatment program or significant industrial users
 Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
 12 months per year Part of the year (list months): _____

8.3 This system is designed for:
 No-discharge.
 Partial irrigation when feasible and discharge rest of time.
 Irrigation during recreational season, April – October, and discharge during November – March.
 Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: Steel Concrete Fiberglass Earthen Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

Basin #1:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #2:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #3:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1:	Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #2:	Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #3:	Maximum operating water level _____ ft	Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.

Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.

Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____

Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ Sec. _____ T _____ R _____ County _____ Acres

Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ Sec. _____ T _____ R _____ County _____ Acres

Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ Sec. _____ T _____ R _____ County _____ Acres

(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: Grass hay Pasture Timber Row crops
 Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):

Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

10.7 Land application rate is based on:

Hydraulic Loading Other (describe) _____

Nutrient Management Plan (N&P) If N&P is selected, is the plan included? YES NO