STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

Steve Marshall, Owner
Dry Dock Campground
32956 Highway 154
Stoutsville, MO  65283

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.

November 6, 2020
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

November 5, 2022
Expiration Date

Chris Wieberg, Director, Water Protection Program
CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Old Campground System - A septic tank with a volume of 2,000 gallons, a filter basin with a volume of 500 gallons, screen filter, drainfield dosing tank with a volume of 1000 gallons, a 0.5 HP effluent dosing pump with a capacity of 85 gpm, 444 lf of 4.0-inch pvc force main, LPP (low-pressure pipe) soil absorption system with a minimum area of 7,100 square feet, changes to the existing collection system sufficient to redirect all sewage flow to the new treatment system and allow the removal of the two existing lagoon cells, and all the necessary appurtenances to make the facilities complete and usable to treat the waste from a population equivalent of 54, with an average daily flow of 1,400 gallons.

New Campground System - Approximately 1,539 lf of 8-inch PVC SDR-35 gravity sewer lines with seven manholes, a septic tank with a volume of 1,500 gallons, a filter basin with a volume of 500 gallons, screen filter, drainfield dosing tank with a volume of 500 gallons, a 0.5 HP effluent dosing pump with a capacity of 55 gpm, 260 lf of 3.0-inch pvc force main, LPP (low-pressure pipe) soil absorption system with a minimum area of 4,970 square feet, and all the necessary appurtenances to make the facilities complete and usable to treat the waste from a population equivalent of 40, with an average daily flow of 1,000 gallons.

A closure plan will need to be submitted to the Northeast Regional Office for review and approval prior to any closure activities. The two existing lagoon cells are required to be closed in accordance with 10 CSR 20-6.010(12). The two existing lagoon cells are required to be closed in accordance with an approved closure plan.

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. This is a non-discharging facility to be located in the NW 1/4, of the SW 1/4, of Section 13, T54N, R9W, Monroe County, Missouri.

Drainfield approximate locations:

- old campground UTM (zone 15) X=597300, Y=4368560
- new campground UTM (zone 15) X=597200, Y=4368560

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 Michael Purol, P.E., Poepping, Stone, Bach & 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 Kansas City 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 0.20 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

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 dnr.mo.gov/env/wpp/401/ for more information.

10. In accordance with 10 CSR 20-6.010(12), a full closure plan shall be submitted to the Department’s Northeast Regional Office for review and approval of any permitted wastewater treatment system being replaced. The closure plan must meet the requirements outlined in Standard Conditions Part III https://dnr.mo.gov/env/wpp/permits/docs/SC3-08012019.pdf.

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

**10 CSR 20-8.120 Gravity Sewers.**
- Rain water from roofs, streets, and other areas and groundwater from foundation drains shall be excluded from all new sewers. 10 CSR 20-8.120 (2)
- Service connections to the gravity sewer main shall be watertight and cannot protrude into the sewer. 10 CSR 20-8.120 (3) (C) 1.
- Location. Manholes shall be installed—10 CSR 20-8.120 (4) (A)
  - At the end of each line;
  - At all changes in grade, size, or alignment;
  - At all sewer pipe intersections; and
  - At distances appropriate to allow for sufficient cleaning and maintenance of sewer lines.
- 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)

**10 CSR 20-8.200 Wastewater Treatment Lagoons and Wastewater Irrigation Alternatives.**
- 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.
o Provide adequate surface drainage where slopes are less than two percent (2%); 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 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:
o Twenty-four inches (24”); 10 CSR 20-8.200 (7) (A) 2. A. or
o Twelve inches (12”) for systems dispersing secondary or higher quality effluent; 10 CSR 20-8.200 (7) (A) 2. B. or
o Forty-eight inches (48”) where karst features are present unless the site can be reclassified. 10 CSR 20-8.200 (7) (A) 3. 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.
• 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.

12. Upon completion of construction:

A. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N);

B. Submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater (≤100,000 gallons per day) and $150.00 fee to the Engineering Section of the Water Protection Program 60 days prior to operation.

C. Identify that the application is for a General permit for land application of domestic wastewater, MO-G823; and

D. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications.
IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

This is a new wastewater treatment facility to replace an existing unpermitted lagoon system serving an existing campground and a separate new wastewater treatment facility to serve a new section of the campground. Average Design flows are 1,400 gallons per day and 1,000 gallons per day. Each treatment facility is a soil absorption no-discharge system that will not discharge to waters of the state.

2. FACILITY DESCRIPTION

Two new LPP (Low Pressure Pipe) soil absorption systems.

Dry Dock Campground is located at 32956 Highway 154, Stoutsville, in Monroe County, Missouri. The existing campground has 50 RV camping sites and a residence, and has a design average flow of 1,400 gpd. The new campground has 40 RV camping sites and has a design average flow of 1,000 gpd.

3. COMPLIANCE PARAMETERS

Dry Dock Campground is currently involved in enforcement action from the Department and has an Abatement Order on Consent in place. There is currently not an Operating Permit for the facility.

The proposed project is required to meet the requirements of MOG823 with an expiration date of August 24, 2022. The facility will be required to follow Subsurface Dispersal Operational Requirements and keep records of maintenance activities for at least five years.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The project consists of installing two separate systems to serve an RV campground. One system will serve the existing portion of the campground which is currently served by two unpermitted lagoon cells. The other system will serve a new portion of the campground, and also includes installing a collection system. The design flow is based on actual water use records and considers the average daily flow recorded for the month with the maximum amount of flow. The LPP system serving the existing campground, 50 RV camping sites and one residence, will have a design flow of 1,400 gpd. The LPP system serving the new portion of the campground, 40 RV camping sites, is designed based on historic use records and will have a design flow of 1,000 gpd. Both LPP systems will have the ability to hold up to a full day of design flow if needed during peak usage. The campground is open for 8 months per year.

The existing collection system consists of gravity sewers, septic tanks and lift stations. In order to disconnect the two lagoon cells approximately 345 feet of gravity sewer and 120 feet of force main will need to be installed. A new 1,000 gallon septic
tank will also be installed in the existing system. At the treatment site, installation will include a 2,000 gallon septic tank, a 500 gallon filter tank, a screen filter with maximum 1/16-inch openings, a 1,000 gallon pumping tank, a 0.5 HP effluent pump with a capacity of at least 85 gpm at a TDH of 25 feet, and 444 lf of 4 inch force main for transmission to the absorption field. The LPP absorption field will be at least 7,000 square feet of effective absorption area and have 20 laterals 71 feet in length placed 5 feet on center, distribution pipe to be 1.5 inch pvc with 5/32-inch holes every 6 feet, a cleanout will be installed at the end of each lateral and a valve installed at the beginning of each lateral to adjust flow, pumped flow will be at a rate of 85 gpm, pump will be controlled by a timer, design setting will be 550 gallons each dose, one dose every 9.5 hours. The absorption field will have a curtain drain around the perimeter. Gravel filled trenches will be approximately 12 inches deep with the laterals placed in the center. Soil will be mounded over the trenches.

The collection system for the new campground will consist of approximately 1,539 lf of 8-inch PVC SDR-35 gravity sewer lines with seven manholes. At the treatment site, installation will include a 1,500 gallon septic tank, a 500 gallon filter tank, a screen filter with maximum 1/16-inch openings, a 500 gallon pumping tank, a 0.5 HP effluent pump with a capacity of at least 55 gpm at a TDH of 18 feet, 260 lf of 3 inch force main for transmission to the absorption field. The LPP absorption field will be at least 5,000 square feet of effective absorption area and have 14 laterals 71 feet in length placed 5 feet on center, distribution pipe to be 1.5 inch pvc with 5/32-inch holes every 6 feet, a cleanout will be installed at the end of each lateral and a valve installed at the beginning of each lateral to adjust flow, pumped flow will be at a rate of 55 gpm, pump will be controlled by a timer, design setting will be 375 gallons each dose, one dose every 9 hours. The absorption field will have a curtain drain around the perimeter. Gravel filled trenches will be approximately 12 inches deep with the laterals placed in the center. Soil will be mounded over the trenches.

The size of each absorption field is based on a loading rate of 0.20 gallons per square foot per day. The two absorption fields are adjacent to each other but separate. Detailed soil analysis was performed by Matthew Walker, Soil Scientist. The soil loading rate is in accordance with the recommended rates in the soil report. In the report there were two test pits dug to 60 inches at the proposed site. A limiting layer was not encountered. A Geohydrologic Evaluation was performed by the Missouri Geological Survey, completed December, 29, 2014 and again August 3, 2017. Based on the characteristics observed, the site receives a slight overall geologic limitation rating.

Setback distances from the absorption fields to the property line exceed 100 feet in all directions. This satisfies the minimum required setback distance per 10 CSR 20-8.200(7).
5. **OPERATING PERMIT**

After completion of construction project submit: statement of work completed, as-builds if the project was not constructed in accordance with previously submitted plans and specifications, and ensure that Application Form B, and $150.00 application fee has been submitted. Missouri State Operating Permit, General Permit MO-G823xxx, will be issued after receipt of the above documents.

V. **NOTICE OF RIGHT TO APPEAL**

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission  
U.S. Post Office Building, Third Floor  
131 West High Street, P.O. Box 1557  
Jefferson City, MO 65102-1557  
Phone: 573-751-2422  
Fax: 573-751-5018  
Website: [https://ahc.mo.gov](https://ahc.mo.gov)

Andrew Appelbaum, P.E.  
Engineering Section  
andy.appelbaum@dnr.mo.gov
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 See engineer report, plans, and specs

1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department? ☐ YES Date of submittal: _______ ☑ N/A 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

Dredge Campground wastewater treatment upgrades $60,000

2.2 ESTIMATED PROJECT CONSTRUCTION COST

2.3 PROJECT DESCRIPTION

Install piping, pumps, and LPP systems for existing campground and expansion. All wastewater treated through Alternative Subsurface application in LPP drainfields

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

All solids collected in septic tanks, sludge is pumped/removed routinely by a 3rd party. Pumping service and disposed off site

2.5 DESIGN INFORMATION

A. Current population: 540V; Design population: 950V See plans. 2 separate LPP systems designed

B. Actual Flow: ______ gpd; Design Average Flow: ______ gpd; Actual Peak Daily Flow: ______ gpd; Design Maximum Daily Flow: 2,355 gpd; Design Wet Weather Event: N/A

2.6 ADDITIONAL INFORMATION

A. Is a topographic map attached? ☑ YES ☑ NO See plans

B. Is a process flow diagram attached? ☐ YES ☑ NO See plans

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3.0 WASTEWATER TREATMENT FACILITY

NAME: Dry Dock Campground
ADDRESS (PHYSICAL): 32956 Highway 154
CITY: Stoutsville
STATE: MO
ZIP CODE: 65283
COUNTY: Monroe

Wastewater Treatment Facility: Mo- WIA (Outfall Of )

3.1 Legal Description: NW 1/4, SE 1/4, Sec. 13, T 54, R 9
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 582716 Northing (Y): 4362899
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: WIA

4.0 PROJECT OWNER

NAME: Dry Dock Property Management
ADDRESS: 32956 Highway 154
CITY: Stoutsville
STATE: MO
ZIP CODE: 65283

E-MAIL ADDRESS: steve21.123@yahoo.com

5.0 CONTINUING AUTHORITIY: 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: Same as Owner

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME: Gimpf Leihring / PSBA
ADDRESS: 100 South 54th Street
CITY: Quincy
STATE: IL
ZIP CODE: 62305

E-MAIL ADDRESS: psba@psba.com

7.0 APPLICATION FEE

[ ] CHECK NUMBER [ ] E-MAIL CONFIRMATION NUMBER

8.0 PROJECT OWNER: 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

Steve Marshall

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.