

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Southfork Resort
36765 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.

December 3, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

December 2, 2020
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The existing facility has a single cell no-discharge lagoon serving 17 rental units. The resort is expanding by constructing a campground directly to the south of the site, which would have space for 30 camping units.

The resort plans to install a spray field and use the existing equipment to remain as a non-discharging, land application system. The facility will have a design average flow of 3,920 gpd and serve a hydraulic population equivalent of approximately 40 people.

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 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 Four Points Surveying & Engineering, Inc. on August 28, 2018.

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 Northeast Regional Office per 10 CSR 20-7.015(9)(E)2.
5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment.
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. Wastewater treatment facility shall not be located within one hundred feet (100'), and preferably three hundred feet (300') of any water well or water supply structure.
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 dnr.mo.gov/env/wpp/epermit/help.htm. See 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 dnr.mo.gov/env/wpp/401/ for more information.
10. Upon completion of construction:
 - A. Southfork Resorts will become the continuing authority for operation, maintenance, and modernization 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;
 - C. Submit the eDMR permit Holder and Certifier Registration, Form--MO 780-2204 to comply with your operating permit; and

- D. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the general operating permit be issued for this facility.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The existing facility has 17 rental units, which consist of cabins, kitchenettes, and motel rooms. The resort is expanding by constructing a campground directly to the south of the site, which would have space for 30 camping units at full capacity. The expansion will require modification to the existing wastewater treatment system to accommodate additional flows.

2. FACILITY DESCRIPTION

The nature of this resort is mainly for summer recreation around Mark Twain Lake. Flows are very seasonal and increase significantly during the summer months. The existing facility has a single cell no-discharge lagoon. The facility currently owns a fixed spray gun to use for irrigation in case of excessive flows to prevent lagoon overflows.

With the proposed expansion, modifications will be required to accommodate additional flows. The resort plans to install a spray field and use the existing equipment to remain as a non-discharging, land application system.

The Southfork Resort WWTF is located on Highway 154, southwest of the intersection with State Highway E and roughly two and a half miles south of the city of Florida in Monroe County, Missouri. The facility has a design average flow of 3,920 gpd and serves a hydraulic population equivalent of approximately 40 people.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet the requirements of MOG823127 Table A and Table B with an expiration date of August 24, 2022. The facility will be required to monitor storage basin freeboard, daily precipitation, daily volume land applied, application area, and application rate.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

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

- Lagoon Cell No. 1 – Lagoon Cell No. 1 is non-aerated and has a surface area of approximately 0.24 acres and a wastewater volume of 245,000 gallons. This cell has 2 ft. of freeboard, 4 ft. of operating depth, and 1.5 ft. of sludge depth, and a compacted clay liner. This lagoon provides approximately 62.5 days of retention at the proposed design flow.

Construction will cover the following items:

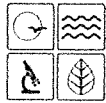
- The design flow of 3,920 gpd was based on seasonal campground usage and takes into account flow equalization provided in the lagoon. Components are designed for a population equivalent of 66 based on organic loading to the system.
- Flow Measurement –
 - Pump calibration time – Pump flow will be measured and calibrated at the beginning of operations and flow will be estimated based on pump run time.
- Septic Tank – Septic tanks provide passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Raw wastewater will flow by gravity to three single compartment septic tanks with a combined capacity of 4,000 gallons, with two (2) proposed 1,500-gallon tanks and one (1) proposed 1,000-gallon tank. The 1,500-gallon septic tanks will be 145 in. x 68 in. x 59.5 in. tall with a water level depth of 46.5 in. and the 1,000-gallon tank will be 96 in. x 64 in. x 65 in. tall with a water level depth of 51 in. The septic tanks provide approximately one day of detention at design average flow. Effluent from the septic tanks will flow by gravity into the existing lagoon. Settled solids in the septic tank shall be removed by a contract hauler.
- Land Application Pump Station – Installation of a land application pump to transfer treated wastewater from Lagoon Cell No. 1 to the land application site. The pump will be a Honda WH20XTAF high-pressure 7.5 HP water pump capable of operating at 80 gpm at 83 feet of TDH.
- Land Application Site – Construction of approximately 400 lf of 3-inch PVC SDR-21 force main to transfer wastewater from the land application pump station to the land application site. The land application site is in the vicinity of Highway 154, southwest of the intersection with State Highway E and roughly two and a half miles south of the city of Florida in Monroe County. The land application site is approximately 1.13 acres of pasture, with more land available on site as reserve. This application site is unfenced. In order to prevent access, signs shall be placed around the perimeter of the application area reading “Wastewater Treatment Land Application Area, No Trespassing/Do Not Enter.” Additionally, when possible, application will occur during the early week when the campground is expected to be empty. Maximum application rates are 0.003 inches/hour, 0.07 inch/day, 0.50 inches/week, and 19.55 inches/year.

- Wastewater Irrigation –
 - Irrigation Spray Gun – Wastewater irrigation will be completed with a spray gun mounted on a small trailer that has the capacity to irrigate at 80 gpm and is capable of operating in a full circle with a barrel trajectory of 27 degrees and capable of spraying a 125 ft. diameter circle (0.28 acres) at 25 psi of pressure. The force main described above will be buried to the center of the irrigation area, where it will come out of the ground and have a quick connect fitting. This will then connect to a 125 ft. long, 2.5-inch fire hose, which will allow the spray gun to be moved to four locations around the center pipe, and will allow for 1.13 acres of irrigation area. The facility currently owns a Rainbow Volume Gun Model 300. The wastewater will be irrigating at a hydraulic rate.

5. OPERATING PERMIT

This facility will require a general operating permit, MOG823127. Submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the general operating permit be issued when construction is complete.

Cailie Carlile, P.E.
Engineering Section
cailie.carlile@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

**APPLICATION FOR CONSTRUCTION PERMIT -
WASTEWATER FACILITY**

RECEIVED

AUG 28 2018

AP 30544
CP 0002028

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

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: _____
- 1.4 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☐ 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

Southfork Resort Sewer System

2.2 PROJECT DESCRIPTION

Southfork Resort is planning to construct a 30 space campground and construct a wastewater spray field in order to land apply all wastewater. The current lagoon is sufficient to allow for the additional flows. Some of the spray equipment is already existing will be sufficient for the additional proposed wastewater volumes.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

2.4 DESIGN INFORMATION

A. Current population: 15; Design population: 45

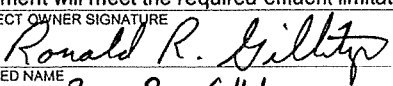
B. Actual Flow: 3920 gpd; Design Average Flow: 3920 gpd;
Actual Peak Daily Flow: 5580 gpd; Design Maximum Daily Flow: 5580 gpd;
Design Wet Weather Event: _____

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

\$ 10,000.00

3.0 WASTEWATER TREATMENT FACILITY				
NAME Southfork Resort		TELEPHONE NUMBER WITH AREA CODE (573) 206-3839		EMAIL ADDRESS reservations@southforkresort.net
ADDRESS (PHYSICAL) 36765 Highway 154	CITY Stoutsville	STATE MO	ZIP CODE 65283	COUNTY Monroe
Wastewater Treatment Facility: Mo- (Outfall Of)				
3.1 Legal Description: ¼, NE ¼, NE ¼, Sec. 21 , T 54N , R 8W (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:				
4.0 PROJECT OWNER				
NAME Southfork Resort - Ron Gillitzer		TELEPHONE NUMBER WITH AREA CODE (573) 206-3839		EMAIL ADDRESS reservations@southforkresort.net
ADDRESS 36765 Highway 154	CITY Stoutsville	STATE MO	ZIP CODE 65283	
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 Southfork Resort - Ron Gillitzer		TELEPHONE NUMBER WITH AREA CODE (573) 206-3839		EMAIL ADDRESS reservations@southforkresort.net
ADDRESS 36765 Highway 154	CITY Stoutsville	STATE MO	ZIP CODE 65283	
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 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				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Kyle Pociask/Four Points Land Surveying&Engineering		TELEPHONE NUMBER WITH AREA CODE (573) 406-5533		EMAIL ADDRESS kyle@fourpointssurvey.com
ADDRESS 17 Northport Plaza	CITY Hannibal	STATE MO	ZIP CODE 63401	
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 Ron R. Gillitzer			DATE 8/22/18	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE 573-206-3839		EMAIL ADDRESS reservations@southforkresort.net
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 ☐ Subsurface
☐ 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: ¹ (Use additional pages if greater than two 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 149 Width 69 Depth 4 Freeboard Depth Safety % Slope
Basin #2: 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 2.1 ft Minimum operating water level 6 ft
Basin #2: 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

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

Basin #1: ft Basin #2: ft

9.7 Total design sludge storage: dry tons and cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: ☐ Fixed Head Sprinklers ☐ Center Pivot ☐ Traveling Gun ☐ Drip Dispersal
☐ Subsurface Low Pressure Pipe ☒ Other (describe) Movable fixed head irrigation gun.

10.2 Number of irrigation sites 1 Total Acres 1.62 Maximum % field slopes 5%
Location: ¼, NE ¼, NE ¼, 21 Sec. 54N T 8W R Monroe County 1.62 Acres
Location: ¼, ¼, ¼, Sec. T R County Acres
Location: ¼, ¼, ¼, Sec. T R County Acres
(Use additional pages if greater than three irrigation sites.)

10.3 Type of vegetation: ☐ Grass hay ☒ Pasture ☐ Timber ☐ Row crops
☐ Other (describe)

10.4 Wastewater flow (dry weather) gallons per day: Average annual
Seasonal 3585 Off-season 1467

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

Design: 19.55 inches/year 0.003 inches/hour 0.07 inches/day 0.50 inches/week
Actual: inches/year inches/hour inches/day inches/week

10.6 Total irrigation per year (gallons): Design: 598,144 gal Actual: gal

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

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

10.8 Land application rate is based on:

☒ Hydraulic Loading ☐ Other (describe)
☐ Nutrient Management Plan (N and P) If N and P is selected, is the plan included? ☐ YES ☐ NO