

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

SMF Holdings
4827 S. Landon Ct.
Springfield, MO 65810

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.

03/29/2016
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

03/28/2018
Expiration Date


John Madros, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The project will consist of the construction and installation of a STEP collection system and wastewater treatment facility to serve Indian Trails Resort in Stone County with a 223.5 PE and a design average flow of 22,350 gpd.

Construction of the STEP collection system will consist of the construction and installation of approximately 492 lf of 1.5-inch PVC SDR-21 force main to serve the four existing cabins and 1,166 lf of 2-inch PVC SDR-21 force main to serve the rest of the resort. The system will contain one (1) 1,000 gallon, four (4) 1,500 gallon, and nine (9) 3,000 gallon STEP tanks, each with a Tuf-Tile Filter and a HE8-51 effluent pump capable of operating at 8 gpm at 240 feet TDH.

The wastewater treatment facility will consist of a 2,000 gallon precast concrete septic tank with 500 gallons of the tank serving as a dosing/mixing chamber and the remaining 1,500 gallons utilized as a coagulation chamber. Two 1,500 gallon precast concrete tanks will follow in series to serve as settling tanks. This will be followed by a recirculating sand filter with a surface area of 4,470 square feet (ft²), an 18,000 gallon recirculation tank, and one AdvanTex AX-MAX275-42 tank.

The AdvanTex will discharge to two (2) Tipton Environmental International, Inc. WWD UV-2L6 units in parallel to disinfect the wastewater. Before leaving the facility, the wastewater will travel through a V-notch flow measurement device and a sample port.

Project is in the vicinity of Harbor Lane in Village of Indian Point, MO in Stone County.

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 Michael Stalzer, P.E. on March 4, 2016.
3. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).
4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Southwest Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
 - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
 - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
 - C. Manholes shall be located with the top access at or above grade level.

- D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
- a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
 - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 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 www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the department's Water Protection Program at 573-751-1300 for more information. See www.dnr.mo.gov/env/wpp/401/ for more information.
10. A full closure plan shall be submitted to the department's Southwest Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO-0138266. Closure shall not commence until the submitted closure plan is approved by the department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.

11. Upon completion of construction;
 - A. SMF Holdings will become the continuing authority for operation, maintenance, and modernization of these facilities;
 - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit be issued; and
 - C. 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. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The facility's effluent limits, as stated in the Antidegradation Review completed in August of 2015, are 1.4 mg/L for summer and 2.1 mg/L for winter. The proposed winter limit is lower than water quality limits. The AdvanTex AX-MAX275-42 polishing filter will aid the facility in ammonia removal.

2. CONSTRUCTION PURPOSE

The resort currently consists of 14 cabins and 2 houses that are served by septic systems. There are 18 proposed units and therefore, a new collection system and wastewater treatment facility is necessary to treat the existing and new flow after the expansion.

3. FACILITY DESCRIPTION

The septic systems serving the existing units will be replaced and the new STEP collection system will serve the facility with a new design flow of 22,350 gpd. The new wastewater treatment facility will consist of a dosing and mixing tank for phosphorous removal, a recirculating gravel filter bed, an AdvanTex AX-MAX275-42 unit, and a UV disinfection system.

4. COMPLIANCE PARAMETERS

The construction project is expected to help the facility meet all the limits established in the facility's operating permit as the facility was previously served by septic systems.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

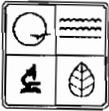
Using the typical loading rate of 5 gallons per day per square foot for domestic sewage, a required surface area of 4,470 ft² was determined. The recirculating sand filter consists of two beds, each with a surface area of 2,235 ft². The filter bed has six zones which each contain 12 laterals. Each lateral will have 16 orifices, which assumes that each orifice will dose 4 ft² of the filter bed. The orifices are one eighth an inch (1/8") in diameter.

The secondary unit process was sized in accordance with AdvanTex design criteria, which indicates a loading of 75 gpd per ft² for secondary treatment. Using the design flow of 22,350 gpd and a treatment capacity of 75 gpd per ft² of filter media, it was determined that approximately 298 square feet of filter media was required. Therefore, one unit is required.

6. OPERATING PERMIT

Operating permit MO-0138266 was public noticed from January, 15, 2016 to February, 15, 2016. No comments were received. Upon construction completion, submit a Statement of Work Completed and request the operating permit be issued.

Rachel Schneider, EI
Engineering Section
rachel.schneider@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT –
 WASTEWATER TREATMENT FACILITY**

RECEIVED
 OCT 6 2015

CP0001794

C1522

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
AMOUNT RECEIVED \$1000.00	CHECK NO. 1060
DATE RECEIVED 10/6/15	

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
 Indian Trails Resort

2.2 PROJECT DESCRIPTION
 18,000 gpd recirculating gravel filter bed with ammonia polishing filter. 441.80 lf 1.5"
 SDR-21 PVC, 1965.96 lf 2" SDR-21 PVC low pressure main.
 9- 3,000 gal step tanks, 6-1500 gal STEP tanks. HEB-51
 Effluent pump each tank.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
 Storage tank and contract hauler.

2.4 DESIGN INFORMATION
 A. Current population: _____; Design population: 240
 B. Actual Flow: _____ gpd; Design Average Flow: 18,000 gpd;
 Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____

2.5 ADDITIONAL INFORMATION
 A. Is a topographic map attached? YES NO
 B. Is a process flow diagram attached? YES NO

3.0 WASTEWATER TREATMENT FACILITY

NAME Indian Trails Resort		TELEPHONE NUMBER WITH AREA CODE 417-839-7900		E-MAIL ADDRESS	
ADDRESS (PHYSICAL) Harbor Lane		CITY Village of Indian Point	STATE MO	ZIP CODE 65616	COUNTY Stone
Wastewater Treatment Facility: Mo- (Outfall 1 Of 1)					
3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. 6, T 22, R 22W (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>Table Rock</u>					

4.0 PROJECT OWNER

NAME SMF HOLDINGS		TELEPHONE NUMBER WITH AREA CODE (417) 839-7900		E-MAIL ADDRESS	
ADDRESS 4827 S. LANDON CT.		CITY SPRINGFIELD	STATE MO	ZIP CODE 65810	

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 INDIAN TRAILS RESORT		TELEPHONE NUMBER WITH AREA CODE (417) 839-7900		E-MAIL ADDRESS	
ADDRESS 4827 S. LANDON CT		CITY SPRINGFIELD	STATE MO	ZIP CODE 65810	

5.1 A letter from the continuing authority, if different than the owner, is included with this application. YES NO N/A

5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.

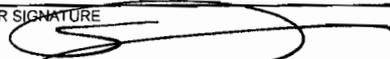
A. Is a copy of the certificate of convenience and necessity included with this application? YES NO

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? YES NOB. 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? YES NOC. 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? YES NOD. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? YES NO**6.0 ENGINEER**

ENGINEER NAME / COMPANY NAME Michael Stalzer, P.E.		TELEPHONE NUMBER WITH AREA CODE (417) 860-9697		E-MAIL ADDRESS	
ADDRESS 16210 2nd Street east		CITY Redington Beach	STATE FL	ZIP CODE 33708	

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 STEVE FARIA		DATE 9-18-15	
TITLE OR CORPORATE POSITION PNCS		E-MAIL ADDRESS Steve.Faria@HOTMAIL.COM	

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.**