

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Mark and Anne Rickmeyer
16334 Sheffield Point Ct.
Wildwood, MO 63021

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.

March 13, 2015
Effective Date

Sara Parker Pauley
Sara Parker Pauley, Director, Department of Natural Resources

March 12, 2017
Expiration Date

John Madros
John Madros, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction consists of installing a 3,000 gallon holding tank at the end of the outfall pipe from the existing recirculating sand filter treatment system equipped with a level indicator and a cellular dial-out system.

II. FINDING OF AFFORDABILITY

The Finding of Affordability is not applicable. The permittee is not a combined or separate sanitary sewer system or 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 in accordance with the plans and specifications submitted by Klingner & Associates, P.C. on September 12, 2014.
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. 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 ten 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 ten 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. 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 ten 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. Upon completion of construction;
 - A. The Rickmeyer Qualified Spousal Trust 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);
 - C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and
 - D. When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

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 holding tank installation will prevent a discharge that may not meet these effluent limits for ammonia.

2. CONSTRUCTION PURPOSE

The operating permit for the facility contains final effluent limits for Ammonia as N and E. coli. A discharge from this facility would likely not meet these effluent limits at the permitted design flow. The holding tank installation will prevent a discharge that may not meet these effluent limits.

3. FACILITY DESCRIPTION

The existing treatment facility consists of two 8,000 gallon septic tanks at the main lodge and two 1,000 gallon septic tanks at the cabins. The septic tanks contain effluent pumps that pump effluent to a 20,000 gallon recirculation tank. The effluent is treated at a 50 foot by 100 foot recirculating sand filter with a capacity of 25,000 gpd and an adjusted design flow of 4,999 gpd.

The camp is used mainly for family functions and a couple of weekends a year for around 40 people. The utilized facilities at the site are 3 two-bedroom cabins and a 14,000 ft² main lodge with a dining area, kitchen, and restrooms. The remaining facilities on the site are not utilized. The design flow of the camp as currently operated is 222 gpd.

The construction will install a 3,000 gallon holding tank at the end of the outfall pipe from the existing recirculating sand filter treatment system equipped with a level indicator and a cellular dial-out system to call the owner when the tank reaches a certain level. The tank would be pumped periodically and as needed by a contract hauler. The facility will operate as a non-discharging system.

4. COMPLIANCE PARAMETERS

The facility is expected to meet a BOD and TSS weekly average of 45 mg/L and monthly average of 30 mg/L, an E. coli daily maximum of 1030 #/100 mL and monthly average of 206 #/mL, an Oil & Grease daily maximum of 15 mg/L and monthly average of 10 mg/L, and April 1 – Sept 30 Ammonia as N daily maximum of 36 mg/L and monthly average of 1.4 mg/L, and Oct 1 – March 31 Ammonia as N daily maximum of 7.5 mg/L and monthly average of 2.9 mg/L.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The camp is used mainly for family functions and a couple of weekends a year for around 40 people. The utilized facilities at the site are 3 two-bedroom cabins and a 14,000 ft² main lodge with a dining area, kitchen, and restrooms. The remaining facilities on the site are not utilized. The design flow of the camp as currently operated is 1,320 gpd. However, historical water usage records indicate a design average flow of 222 gpd as currently operated.

The 3,000 gallon holding tank at the end of the outfall pipe from the existing recirculating sand filter treatment system will fill up in approximately 13 days at average flow and 4 days at the maximum anticipated daily flow. The tank will be pumped periodically and as needed. The tank is equipped with a level indicator (set 2 feet below the full mark) and a cellular dial-out system indicating the tank needs to be pumped out. The owner will record the amount pumped each month, the hauler information, and location it was hauled to and submit monthly reports to Missouri DNR.

Cindy LePage, P.E.
Engineering Section
cindy.lepage@dnr.mo.gov

APPENDICES

- **Summary of Design**



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

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
SEE RECEIVED 47-50100	CHECK NO. 1154
DATE RECEIVED 6/12/14	

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: _____
 Attached is the No Degradation Evaluation Conclusion of Antidegradation Review form
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: 6/14 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: G823
- 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

Camp Thunderbird - No-Discharge Facility

2.2 PROJECT DESCRIPTION

Project includes installing a 3,000 gallon holding tank with level indicator and cellular dialer for alarm.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

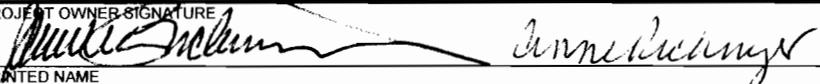
Wastewater will be hauled to nearest approved disposal facility as needed to prevent a bypass or overflow.

2.4 DESIGN INFORMATION

- A. Current population: 2.2; Design population: 2.2
- B. Actual Flow: 222 gpd; Design Average Flow: 222 gpd;
 Actual Peak Daily Flow: 782 gpd; Design Maximum Daily Flow: 782 gpd

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 Rickmeyer Qualified Spousal Trust -Camp Thunderbird		TELEPHONE NUMBER WITH AREA CODE 314-420-0783		E-MAIL ADDRESS anne_rickmeyer@yahoo.com
ADDRESS (PHYSICAL) 1610 Thunderbird Lane		CITY Cairo	STATE MO	ZIP CODE 65239
COUNTY Randolph				
Wastewater Treatment Facility: Mo- N/A (Outfall Of)				
3.1 Legal Description: <u> </u> ¼, <u>SW</u> ¼, <u>SE</u> ¼, Sec. <u>23</u> , T <u>55N</u> , R <u>13W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>557630</u> Northing (Y): <u>4377008</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Trib Mud Crk</u>				
4.0 PROJECT OWNER				
NAME Mark & Anne Rickmeyer		TELEPHONE NUMBER WITH AREA CODE (314) 420-0783		E-MAIL ADDRESS anne_rickmeyer@yahoo.com
ADDRESS 16334 Sheffield Point Court		CITY Wildwood	STATE MO	ZIP CODE 63021
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 Mark & Anne Rickmeyer		TELEPHONE NUMBER WITH AREA CODE (314) 420-0783		E-MAIL ADDRESS anne_rickmeyer@yahoo.com
ADDRESS 16334 Sheffield Point Court		CITY Wildwood	STATE MO	ZIP CODE 63021
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 Mark C. Bross, PE/Klingner & Associates, PC		TELEPHONE NUMBER WITH AREA CODE (573) 221-0020		E-MAIL ADDRESS mcb@klingner.com
ADDRESS 4510 Paris Gravel Road		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 Mark & Anne Rickmeyer				DATE 9.8.14
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE (314) 420-0783		E-MAIL ADDRESS anne_rickmeyer@yahoo.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.				

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 _____	Berm Width _____	% Slope _____
Basin #2:	Length _____	Width _____	Depth _____	Freeboard _____	Berm Width _____	% Slope _____
Basin #3:	Length _____	Width _____	Depth _____	Freeboard _____	Berm Width _____	% 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: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ 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.)

10.2 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