

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

LOST CANYON LAKES LOT OWNERS ASSOCIATION
Lost Canyon Lakes WWTF
7233 Wildwood Estates Drive
Steedman, MO 65077

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.

April 15, 2025
Effective Date

April 14, 2027
Expiration Date



John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Installation of a trench plug between the primary cell and the secondary cell of a three cell lagoon. Plug will be 4 feet vertical, 2 feet wide and span the length of the second cell; approximately 230 feet. Trench plug to consist of clay soil from a nearby borrow area.

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 to treat the waste from a population equivalent of 368 with an average discharge of 25,000 gallons per day (gpd). The design flow will remain the same, and the existing outfall will remain. Discharge is to Cow Creek in Sec. 26, T47N, R08W, Callaway 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 consistent with plans and specifications signed and sealed by Ethan Shackelford, P.E., Alpha Engineering & Surveying, LLC, 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 Northeast Regional Office per 10 CSR 20-7.015(9)(G).
5. 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.
6. 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.
7. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - Lagoon berms shall be constructed of relatively impervious material and compacted to at least 95 percent maximum dry density test method to form a stable structure. 10 CSR 20-8.200(5)(A)1.
 - The lagoon shall be sealed to ensure that seepage loss is as low as possible and has a design permeability not exceeding 1.0×10^{-7} cm/sec. 10 CSR 20-8.200(5)(C)1.
8. Upon completion of construction:
 - A. The LOST CANYON LAKES LOT OWNERS ASSOCIATION will become the continuing authority for operation and maintenance 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; and
- C. 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>)

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Activity is being conducted primarily to evaluate the source of water that is causing wet areas and saturation of the area between the first and second cells of the three-cell lagoon. The trench will be excavated 2 feet wide and 4.5 feet deep for the length of the second cell; approximately 230 feet. After evaluation and collection of samples the trench will be filled with clay soil, creating a clay plug. The clay plug will prevent water from passing through and will restore structural integrity. If groundwater is moving under the two cells, the plug may intercept the water and direct it around the second cell; this could stop groundwater from infiltrating the berms of the second cell of the three-cell lagoon.

2. FACILITY DESCRIPTION

The existing facility (outfall #001) is a three-cell lagoon treatment facility; the primary cell has a surface area of approximately 2.0 acres and is approximately 3.5 feet deep, the second cell has a surface area of approximately 0.6 acres and is approximately 3 feet deep, the third cell has a surface area of approximately 0.2 acres and is approximately 3 feet deep at the discharging elevation. Effluent from the third cell passes through a tablet chlorinator, chlorine contact chamber, and tablet dechlorinator, then is piped to the outfall. No-discharge has been reported on the facility Discharge Monitoring Reports for the last 8 years. The last reported discharge was in 2016.

Lost Canyon Lakes is located at 7233 Wildwood Estates Drive, Steedman, Callaway County, Missouri. The facility (outfall #001) is located near Beaver Lodge Ct., has a design average flow of 25,000 gpd, and has a design organic population equivalent of approximately 368 people. Outfall location: UTM Coordinates X = 605523, Y = 4297088

3. COMPLIANCE PARAMETERS

Compliance parameters are those contained in Missouri State Operating Permit MO-0035645, Outfall #001. Construction of the improvements does not change any terms of the Operating Permit.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction involves installing a clay plug between the first and second cell of the three cell lagoon. A 2-foot wide by 4.5-foot deep trench will be excavated and used for evaluation of any water movement. Clay rich soil will be placed and compacted in the trench for a depth of 4 feet. Six inches of organic soil will be placed on top of the plug to support grass. The trench and plug will extend the length of the second cell, approximately 230 feet. The compacted plug material is to have a permeability coefficient of 1.0×10^{-7} cm/sec or less; this is the required permeability coefficient of a lagoon seal.

It is noted that this construction is not intended to correct leakage that occurs in the third cell of the lagoon. It is also not intended to correct groundwater seeps into the berms of the first cell of the lagoon. Future projects will likely be necessary to correct such problems.

5. OPERATING PERMIT

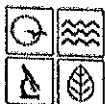
Operating permit MO-0035645 will not change as a result of this construction. Operating permit MO-0035645 expired on September 30, 2024. A renewal application was received March 29, 2024. If you have questions regarding the renewal application, please contact the NPDES permitting section at 573-522-4502 or cleanwaterpermits@dnr.mo.gov.

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: _____ ☒ 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 Repair to Lagoon Berm
- 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 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 Lost Canyon Lakes Wastewater Treatment Facility	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 50,000
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2.3 PROJECT DESCRIPTION

Excavate and install a clay plug on lower berm of primary cell to intercept ground water that is flowing under primary cell and surfacing at toe of berm.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

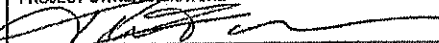
2.5 DESIGN INFORMATION

A. Current population: _____; Design population: _____

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

2.6 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 Lost Canyon Lakes Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE 573-220-5432		E-MAIL ADDRESS wildwoodmaintenance@wildwoodassocl
ADDRESS (PHYSICAL) 7233 Wildwood Estates Drive	CITY Steedman	STATE MO	ZIP CODE 65077	COUNTY Callaway
Wastewater Treatment Facility: Mo- 0035646 (Outfall Of)				
3.1 Legal Description: _____ 1/4, _____ 1/4, _____ 1/4, Sec. _____, T _____, R _____ (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 Lost Canyon Lakes Lot Owners Association		TELEPHONE NUMBER WITH AREA CODE 573-676-5317		E-MAIL ADDRESS trei.irwin@wildwoodassociation.com
ADDRESS 7233 Wildwood Estates Dr.	CITY Steedman	STATE MO	ZIP CODE 65077-9801	
5.0 CONTINUING AUTHORITY: 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 above		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS	CITY	STATE	ZIP CODE	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input 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 Ethan Shackelford/Alpha Engineering and Surveying		TELEPHONE NUMBER WITH AREA CODE 573-348-9799		E-MAIL ADDRESS ethan@alphaes.net
ADDRESS PO Box 282	CITY Osage Beach	STATE MO	ZIP CODE 65065	
7.0 APPLICATION FEE				
<input type="checkbox"/> CHECK NUMBER <input checked="" type="checkbox"/> JETPAY CONFIRMATION NUMBER 20049968				
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 				
PRINTED NAME Trei Irwin			DATE 01/20/2025	
TITLE OR CORPORATE POSITION President - Board of Director		TELEPHONE NUMBER WITH AREA CODE 836-262-8877		E-MAIL ADDRESS trei.irwin@wildwoodassociation.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.				