

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Faith Christian Family Church WWTF
17350 E Veterans Memorial Pkwy
Truesdale, MO 63380

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 9, 2020
Effective Date

Edward B. Galbraith
Edward B. Galbraith, Director, Division of Environmental Quality

November 8, 2022
Expiration Date

Chris Wieberg
Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Faith Christian Family Church WWTF is an existing facility with flow equalization, extended aeration, sludge holding tank, and sludge disposal by contract hauler.

The proposal is to install two closed vessel UV disinfection units in series to meet permit limits at peak hourly flow. The facility's average daily design flow will remain 0.0055 MGD. The effluent will flow by gravity from the new disinfection system and will tie into existing piping that leads to the outfall at Indian Camp Creek.

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 consistent with plans and specifications signed and sealed by Lewis-Bade Inc. on August 26, 2020 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 SLRO Regional Office per 10 CSR 20-7.015(9)(G).
5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment.
6. 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.
7. 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.
8. 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.
9. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - Flood protection shall apply to new construction and to existing facilities undergoing major modification. 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.
10 CSR 20-8.140 (2) (B)
 - Facilities shall be readily accessible by authorized personnel from a public Right-of-way at all times. 10 CSR 20-8.140 (3) (D)

- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for, the UV disinfection facilities. 10 CSR 20-8.140 (7) (C)
- Emergency Power. Disinfection and dechlorination processes, when used, shall be provided during all power outages. 10 CSR 20-8.190 (2) (A)
- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190 (5) (A) 1
- If no flow equalization is provided for a batch discharger, the UV dosage shall be based on the peak batch flow. 10 CSR 20-8.190 (5) (A) 2.
- The UV system shall deliver the target dosage based on equipment derating factors and, if needed, have the UV equipment manufacturer verify that the scale up or scale down factor utilized in the design is appropriate for the specific application under consideration. 10 CSR 20-8.190 (5) (A) 3.
- The UV system shall deliver a minimum UV dosage of thirty thousand microwatt seconds per centimeters squared ($30,000 \mu\text{W} \cdot \text{s}/\text{cm}^2$). 10 CSR 20-8.190 (5) (A) 4.
- Closed vessel UV systems. The combination of the total number of closed vessels shall be capable of treating the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190 (5) (B) 2.
- The UV system must continuously monitor and display at the UV system control panel the following minimum conditions:
 - The relative intensity of each bank or closed vessel system; 10 CSR 20-8.190 (5) (C) 1. A.
 - The operational status and condition of each bank or closed vessel system; 10 CSR 20-8.190 (5) (C) 1. B.
 - The ON/OFF status of each lamp in the system; 10 CSR 20-8.190 (5) (C) 1. C. and
 - The total number of operating hours of each bank or each closed vessel system. 10 CSR 20-8.190 (5) (C) 1. D.
- The UV system shall include an alarm system. Alarm systems shall comply with 10 CSR 20-8.140(7) (C). 10 CSR 20-8.190 (5) (C) 2.

10. Upon completion of construction:

- A. The Faith Christian Family Church 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 enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N). 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. CONSTRUCTION PURPOSE

The facility is installing UV disinfection to meet final *E. coli* effluent limits that become effective January 1, 2021.

2. FACILITY DESCRIPTION

The Faith Christian Family Church WWTF is an existing facility with flow equalization, extended aeration, and sludge holding tank, and sludge disposal by contract hauler.

The Faith Christian Family Church WWTF is located in the vicinity of the intersection of I-70 and Norfolk Southern Railroad with Franklin Rd, Truesdale City, in Warren County, Missouri. The facility has a design average flow of 0.0055 MGD. The peak estimated flow from the facility is expected to reach 0.0772 MGD and serves an organic population equivalent of approximately 65 people. The receiving stream for this facility is the Indian Camp Creek.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits of *E. coli* mg/l as established in Operating Permit MO-0129721 that becomes effective January 1, 2021.

Parameter	Units	Monthly average limit
<i>E. coli</i>	#/100mL	206

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction will cover the following items:

- Components are designed for a Population Equivalent of 65 based on organic loading to the system.
- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
 - Closed Vessel Ultraviolet (UV) – two closed vessel (Aquazul PVC-1S-HO-MW-VM), gravity flow, low pressure high intensity UV disinfection system capable of treating a peak flow of 14,400 gpd while delivering a minimum UV intensity of 30 mJ/cm² with an expected ultraviolet transmissivity of 65% or greater. The peak estimated flow from the facility is expected to reach 7,722 gpd which is less than the UV disinfection capability. The closed vessel UV system consists of 2 lamps per reactor. The two closed vessel UV reactors are arranged in series. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.
- Emergency Power – The facility will not have an emergency power generator. Wastewater is pumped to the UV system prior to discharge, so if the power is out, no wastewater will be discharged. The treatment system also has capacity for about 2.7 days through the stabilization tank to hold wastewater during a power outage.
- Audiovisual alarms - The facility will not have an audio alarm because if the power is out, no wastewater will be discharged. There is a visual LED alarm and a meter showing hours of operation on the control box for the UV units.
- One control box will be installed to support the UV disinfection system.

5. OPERATING PERMIT

These construction activities do not require a modification to the operating permit. It is expected that the facility owner will include a new facility description and process flow diagram in their next operating permit renewal application to reflect the installation of the UV disinfection system.

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:

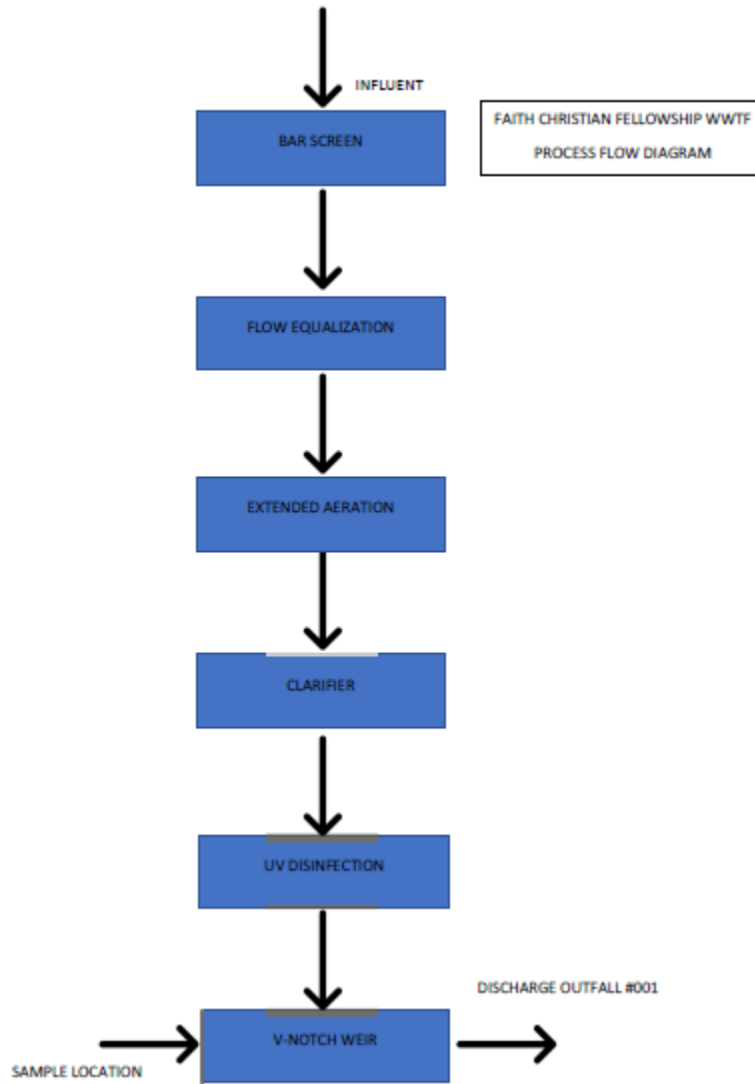
Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: <https://ahc.mo.gov>

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APPENDIX

• **Process Flow Diagram**





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 _____
- 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 FAITH CRISTIAN FAMILY CHURCH WWTF UV DISINFECTION	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 5,000
2.3 PROJECT DESCRIPTION The FCFC Church will install 2 UV disinfection units (Aquazul PVC-1S-HO-MW-VM) on their wastewater treatment facility in order to comply with MDNR permit regulations.	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION 1.1 Sludge removal when needed is pumped and disposed of by Masterson and Associates.	
2.5 DESIGN INFORMATION A. Current population: <u>20</u> ; Design population: <u>65</u> B. Actual Flow: <u>1,800</u> gpd; Design Average Flow: <u>5,500</u> gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: <u>5,500</u> gpd; Design Wet Weather Event: _____	
2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO B. Is a process flow diagram attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

3.0 WASTEWATER TREATMENT FACILITY				
NAME Faith Christian Family Church WWTF		TELEPHONE NUMBER WITH AREA CODE (636) 456-4748	E-MAIL ADDRESS rory@fcf.net	
ADDRESS (PHYSICAL) 17350 E Veterans Memorial Pkwy	CITY Truesdale	STATE MO	ZIP CODE 63380	COUNTY Warren
Wastewater Treatment Facility: Mo- 0129721 (Outfall 1 Of 1)				
3.1 Legal Description: <u>SW 1/4, SE 1/4, _____ 1/4, Sec. 23, T 47N, R 2W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>664787</u> Northing (Y): <u>4298187</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: Indian Camp Creek (C) , 8-20-13 MUDD V 1.0 (C) (3960)				
4.0 PROJECT OWNER				
NAME Faith Christian Family Church		TELEPHONE NUMBER WITH AREA CODE (636) 456-4748	E-MAIL ADDRESS rory@fcf.net	
ADDRESS 17350 E Veterans Memorial Pkwy	CITY Truesdale	STATE MO	ZIP CODE 63380	
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 Faith Christian Family Church		TELEPHONE NUMBER WITH AREA CODE (636) 456-4748	E-MAIL ADDRESS rory@fcf.net	
ADDRESS 17350 E Veterans Memorial Pkwy	CITY Truesdale	STATE MO	ZIP CODE 63380	
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 Robert L. Lewis / Lewis-Bade, Inc.		TELEPHONE NUMBER WITH AREA CODE (636)-456-2615	E-MAIL ADDRESS lewis-bade-engineers@hotmail.com	
ADDRESS 101 East Walton Street	CITY Warrenton	STATE MO	ZIP CODE 63383	
7.0 APPLICATION FEE				
<input checked="" type="checkbox"/> CHECK NUMBER <input type="checkbox"/> JETPAY 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 <i>Pastor Jerry Robert</i>				
PRINTED NAME <i>Terry Roberts</i>			DATE <i>8-18-2020</i>	
TITLE OR CORPORATE POSITION <i>Pastor</i>		TELEPHONE NUMBER WITH AREA CODE (636) 456-4748	E-MAIL ADDRESS <i>terry@fcf.net</i>	
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.				