

**STATE OF MISSOURI**  
**DEPARTMENT OF NATURAL RESOURCES**  
**MISSOURI CLEAN WATER COMMISSION**



**CONSTRUCTION PERMIT**

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

Construction Investment Company  
Fabick Foristell WWTF  
One Fabick Drive  
Fenton MO, 63026

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.

July 23, 2021  
Effective Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

July 22, 2023  
Expiration Date

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Construction includes installation of two sump pumps with runtime measurement discharging to a PVC manifold, a concrete wall to create a sump pit in the effluent box, and two UV disinfection units, as well as moving the existing effluent weir to accommodate the new pumps and UV units.

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 Robert Lewis with Lewis-Bade, Inc., 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 St. Louis Regional Office per 10 CSR 20-7.015(9)(G).

5. 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.
6. 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](http://dnr.mo.gov/env/wpp/epermit/help.htm). See [dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.
7. 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 [dnr.mo.gov/env/wpp/401/](http://dnr.mo.gov/env/wpp/401/) for more information.
8. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
  - All sampling points shall be designed so that a representative and discrete twenty-four (24) hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140(6)(B)
  - All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140(6)(C)
  - No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140(7)(D)1.
  - A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140(7)(E)

- Effluent twenty-four (24) hour composite automatic sampling equipment shall be provided at all mechanical wastewater treatment facilities and at other facilities where necessary under provisions of the operating permit. 10 CSR 20-8.140(7)(F)
- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
  - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140(8)(A)
  - Gratings over appropriate areas of treatment units where access for maintenance is necessary; 10 CSR 20-8.140(8)(B)
  - Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140(8)(L)
  - Provisions for an arc flash hazard analysis and determination of the flash protection boundary distance and type of PPE to reduce exposure to major electrical hazards shall be in accordance with NFPA 70E Standard for Electrical Safety in the Workplace (2018 Edition), as approved and published August 21, 2017. 10 CSR 20-8.140(8)(M)
- All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140(7)(A)1.
- Emergency Power. Disinfection processes, when used, shall be provided during all power outages. 10 CSR 20-8.140(2)(A). 10 CSR 20-8.140(7)(A)2.
- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.140(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 20-8.140(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 20-8.140(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 20-8.140(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 20-8.140(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 20-8.140(5)(C)1.A.
    - The operational status and condition of each bank or closed vessel system; 10 CSR 20-8.140(5)(C)1.B.
    - The ON/OFF status of each lamp in the system; 10 CSR 20-8.140(5)(C)1.C. and
    - The total number of operating hours of each bank or each closed vessel system. 10 CSR 20-8.140(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 20-8.140(5)(C)2.
  - 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 all wastewater treatment facilities. 10 CSR 20-8.140(7)(C)
9. Upon completion of construction:
- A. The Construction Investment Company will become the continuing authority for operation and maintenance of these facilities;
  - B. Submit an electronic copy of the as-built plans 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**

Construction of an ultraviolet disinfection system is required to meet the final effluent limits for *E. coli* bacteria.

##### **2. FACILITY DESCRIPTION**

The Fabick Foristell WWTF is located at 1043 N Service Rd, Foristell, in St. Charles County, Missouri. The facility has a design average flow of 9,000 gpd and serves a hydraulic population equivalent of approximately 100 people.

The Fabick Foristell WWTF is an existing extended-aeration package plant with bar screen, aeration basins, clarifier, aerated sludge holding, and an effluent flow-measuring V-notch weir. The construction will add two sump pumps and a 6-inch-diameter PVC manifold in the effluent weir box to pump through two UV units, add a concrete wall to create a sump pit, and move the V-notch weir to accommodate the installation.

### **3. COMPLIANCE PARAMETERS**

The facility has been in compliance with Ammonia limits as set forth in the reissued permit effective in January 2019. The proposed project is required to meet final effluent limits of 206 colonies per 100 mL as a most probable number calculated as a geometric mean, as established in Missouri State Operating Permit MO-0098060. Since final *E. coli* limits became effective on January 1, 2021, there are no changes required to effluent limits or permit conditions as a result of this construction.

The limits, following the completion of construction, that will be applicable to the facility are as follows:

Parameter	Units	Monthly geometric-mean limit
<i>E. coli</i>	#/100mL	206

### **4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

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

- Existing extended-aeration package plant with:
  - Small manual bar screen
  - Aeration basins
  - Clarifier
  - Aerated sludge holding
  - Effluent flow-measuring V-notch weir

**Construction will cover the following items:**

- Components are designed for a Population Equivalent of 100 based on hydraulic loading to the system.
- Flow Measurement – The existing V-notch weir will be moved to accommodate the new pumps and UV units, with a new concrete wall constructed to form a sump pit. Since the UV units will discharge just prior to the weir, the sump pumps will be equipped with runtime meters for flow measurement.
- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - Closed Vessel Ultraviolet (UV) – A closed vessel, low pressure, high intensity, UV disinfection system capable of treating a peak flow of 50 gpm while delivering a minimum UV intensity of 30 mJ/cm<sup>2</sup> with an expected

ultraviolet transmissivity of 45% or greater before an alarm activates. The closed vessel UV system consists of 1 lamp per reactor. Two closed vessel UV reactors are arranged in series. The disinfected effluent will then flow by gravity through flow measurement equipment and to Outfall No. 001.

- UV sump pumps – Two ¼-hp pumps, each capable of pumping 22 gpm at a TDH of 5 ft, will be used to pump partially-treated wastewater through the UV units. Both pumps operate in parallel. Running simultaneously, they will be capable of pumping 44 gpm, which is less than the 50 gpm design max of the UV units.

## **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.

This facility is not being converted to a general operating permit at this time, as the construction does not trigger a modification of the operating permit under 10 CSR 20-6.010 and as such it will be evaluated at operating permit renewal to determine if it qualifies for a general permit.

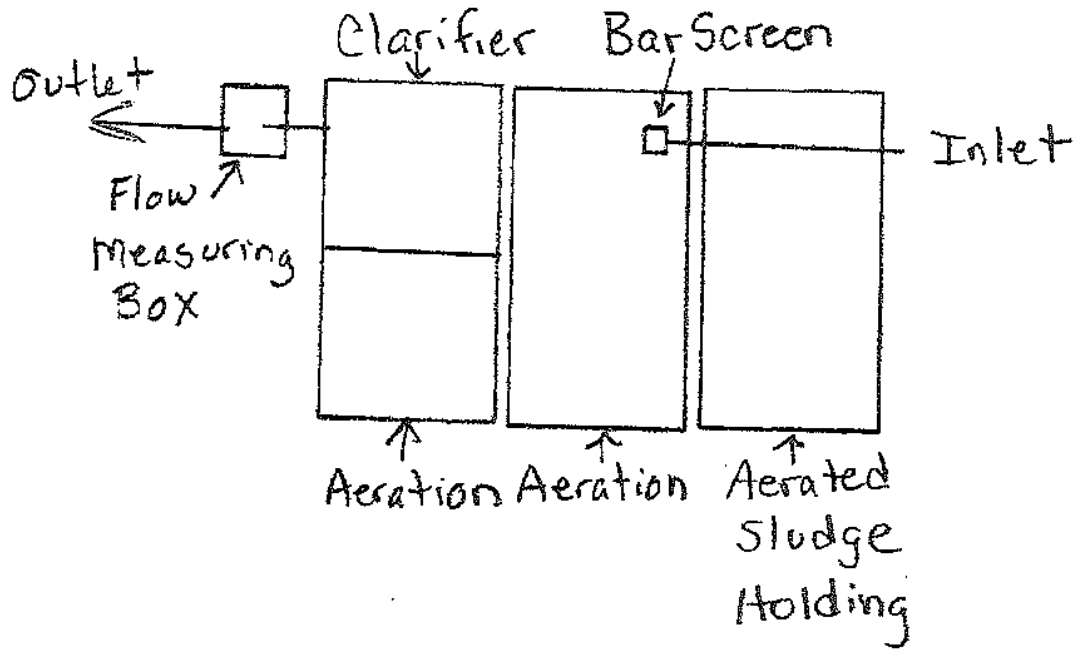
## **V. NOTICE OF RIGHT TO APPEAL**

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:

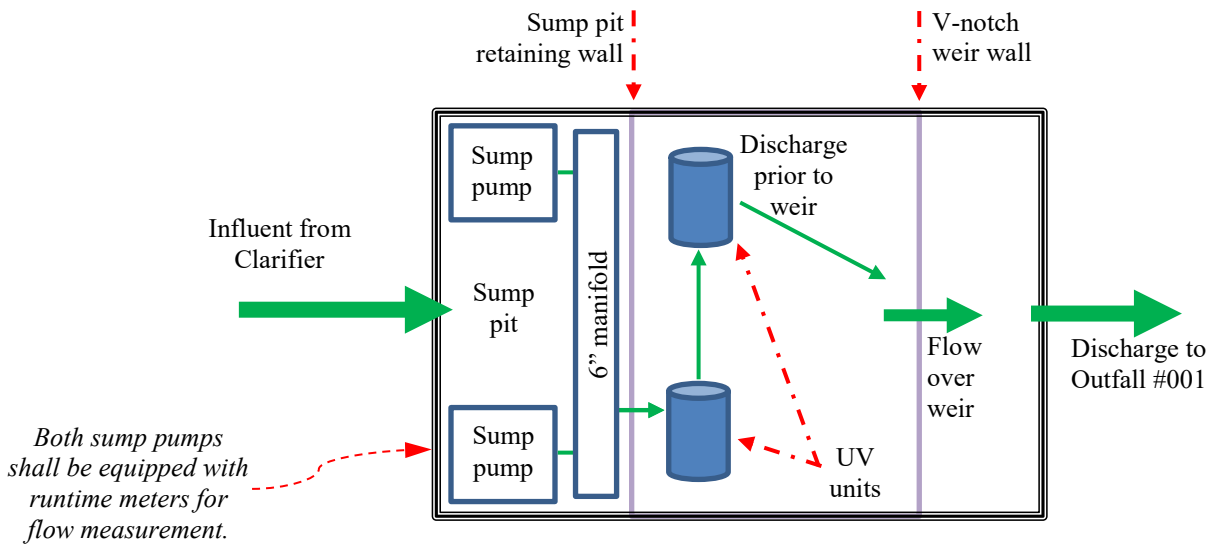
Administrative Hearing Commission  
U.S. Post Office Building, Third Floor  
131 West High Street, P.O. Box 1557  
Jefferson City, MO 65102-1557  
Phone: 573-751-2422  
Fax: 573-751-5018  
Website: <https://ahc.mo.gov>

Scott Adams, P.E.  
Engineering Section  
[scott.adams@dnr.mo.gov](mailto:scott.adams@dnr.mo.gov)

**APPENDIX - Facility Diagrams**



**Inside the Flow Measuring Box**







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 FABICK FORISTELL WWTF UV DISINFECTION	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 10,000
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2.3 PROJECT DESCRIPTION  
 Fabick Foristell will install 2 UV disinfection units on their wastewater treatment facility in order to comply with MDNR regulations.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION  
 1.1 Dry tons per year are pumped and disposed of by Masterson and Associates.

2.5 DESIGN INFORMATION  
 A. Current population: N/A; Design population: 100  
 B. Actual Flow: 700 gpd; Design Average Flow: 9,000 gpd;  
 Actual Peak Daily Flow: \_\_\_\_\_ gpd; Design Maximum Daily Flow: 9,000 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 Fabick Forstell Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE (636) 673-2530	E-MAIL ADDRESS	
ADDRESS (PHYSICAL) 1043 N Service Road	CITY Forstell	STATE MO	ZIP CODE 63348	COUNTY St. Charles
Wastewater Treatment Facility: Mo- 0129721 (Outfall 1 Of 1 )				
3.1 Legal Description: <u>SW ¼, SE ¼, NW ¼, Sec. 19, T 47N, R 1E</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>677350</u> Northing (Y): <u>4298623</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Tributary to McCoy Creek, 8-20-13 MUDD V 1.0 (C) (3960)</u>				

**4.0 PROJECT OWNER**

NAME Construction Investment Co.		TELEPHONE NUMBER WITH AREA CODE (636) 343-5900	E-MAIL ADDRESS	
ADDRESS One Fabick Drive	CITY Fenton	STATE MO	ZIP CODE 63206	

**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 Construction Investment Co.		TELEPHONE NUMBER WITH AREA CODE (636) 343-5900	E-MAIL ADDRESS	
ADDRESS One Fabick Drive	CITY Fenton	STATE MO	ZIP CODE 63206	

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 Robert L. Lewis		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
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**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 Gregory Trunk DATE 2/15/2021TITLE OR CORPORATE POSITION PROJECT mGR TELEPHONE NUMBER WITH AREA CODE 414 208 5502 E-MAIL ADDRESS gregory.trunkMail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
P.O. BOX 176  
JEFFERSON CITY, MO 65102-0176 @FABICKCAT.COM**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.****END OF PART A.**