

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

State Park Village Sewer, Inc.
101 SE 591
Warrensburg, MO 64093

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.

February 6, 2015
Effective Date

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

February 5, 2017
Expiration Date

John Madras
John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The proposed improvements to the State Park Village wastewater treatment facility (WWTF) include the installation of an aerated equalization basin, to be installed between the facility headworks and aeration basin, and an ultraviolet (UV) disinfection system, to replace an existing chlorination system.

The equalization basin has a working volume of approximately 14,600 gallons and is of sufficient size, according to 10 CSR 20-8.020(13)(B)B. *Design Guides*, to allow for modulation of diurnal flow patterns. The equalization basin is aerated for mixing and to maintain a minimum dissolved oxygen level of 2 mg/L. The blower has a 120 cubic feet per minute (CFM) @130 inches H₂O capacity. The equalization basin will be equipped with two 37,500 gallons per day (gpd) duplex pumps equipped with floats and timers to control forward flow.

Two UV disinfection units will be installed in series with a peak flow capacity of 75,000 gpd. The UV system will be designed to deliver a minimum UV dose of 30,000 $\mu\text{Ws}/\text{cm}^2$ in effluent with a UV radiation transmittance of 65% at 254 nanometers wave length.

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 MECO Engineering Company with a received on date of January 9, 2015.
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 Kansas City 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 ten 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. A full closure plan shall be submitted to the Department's Kansas City 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- 0113573. 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. State Park Village Sewer, Incorporated 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 built” drawings if the project was not constructed in accordance with previously submitted plans and specifications; and
 - D. When the permittee 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> .

EPA's ammonia criteria were brought to the attention of the permittee in an October 29, 2014 comment letter. No formal response was provided to this issue to date.

2. CONSTRUCTION PURPOSE

The permittee will install the UV disinfection system to improve the consistency of the disinfection process, which should improve the dependability of the permittee's ability to comply with its *E.coli* effluent limitations.

The equalization basin is being added to dampen the fluctuation of flow to the facility making operation of the facility more reliable.

3. FACILITY DESCRIPTION

The existing facility is an extended aeration system with a design flow of 20,000 gpd. The proposed improvements to the WWTF include the installation of an aerated equalization basin, to be installed between the facility headworks and aeration basin, and an ultraviolet (UV) disinfection system, to replace an existing chlorination system.

4. COMPLIANCE PARAMETERS

The UV disinfection system is intended to help the facility meet its *E.coli* effluent limitations (1030/206 #/100 ml) on a consistent basis. The equalization basin should facilitate ease of operation of the WWTF making it more reliable for removal of the standard waste pollutants (45/30 mg/L BOD & TSS, 6.5 to 9.0 pH, ammonia – 3.2/1.4 mg/L for 4/1 thru 9/30 and 8.2/2.8 mg/L for 10/1 thru 3/31) reflected by the effluent limitation in the permit.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The UV disinfection unit is designed to insure the contact chamber UV dose is at least 30,000 $\mu\text{W}\cdot\text{s}/\text{cm}^2$ as specified in *Recommend Standards for Wastewater Facilities* (i.e., "10 States Standards"). The existing treatment facility is capable of pretreating wastewater so that the UV Unit will provide at least 65% ultraviolet radiation transmittance at 254 nanometers wave length. The facility will maintain a spare bulb and ballast for the single bulb unit. The UV disinfection system is equipped with a visual and audible alarm for lamp failure.

The proposed equalization basin design is consistent with the criteria provide in 10 CSR 20-8.020(13)(B)B. of *Design Guides*. The size of approximately 14,600 gallons is consistent with Table I, *Recommended Flow Equalization Tank Volumes*, of the previously referenced design criteria. Aeration is sufficient to maintain 2 mg/L of dissolved oxygen in the mixed liquor at all times. Duplicate flow forward pumps will be provided, each having the capacity to accommodate the entire flow at the facility.

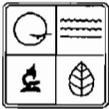
6. OPERATING PERMIT MODIFICATION

Operating permit MO-0113573 will not require a modification to reflect the construction activities. It is expected that the facility owner will include a new facility description in their next operating permit renewal application to reflect the installation of the UV disinfection and the equalization systems.

RECEIVED

AT 17320
CP0001682

SEP 10 2014



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 \$500.00	CHECK NO. 1215
DATE RECEIVED 9/10/14	<i>SB</i>

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: _____ 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: ATT
- 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

State Park Village Wastewater Facility Improvements

2.2 PROJECT DESCRIPTION

See Summary of Design - ATTACHED

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge is hauled by a contract hauler.

2.4 DESIGN INFORMATION

A. Current population: 200; Design population: 200

B. Actual Flow: 10,500 gpd; Design Average Flow: 20,000 gpd;
Actual Peak Daily Flow: 35,000 gpd; Design Maximum Daily Flow: 37,500 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 State Park Village WWTP		TELEPHONE NUMBER WITH AREA CODE 660-747-9900	E-MAIL ADDRESS stateparkvillagesewer@embarqmail.co	
ADDRESS (PHYSICAL) 133 SE 611	CITY Warrensburg	STATE MO	ZIP CODE 64093	COUNTY Johnson

Wastewater Treatment Facility: Mo- 0113573 (Outfall 1 Of 1)

3.1 Legal Description: SE ¼, SW ¼, NW ¼, Sec. 36, T 46N, R 25W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 3844098 Northing (Y): 09337439
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 State Park Village Sewer, Inc.		TELEPHONE NUMBER WITH AREA CODE (660) 747-9900	E-MAIL ADDRESS stateparkvillagesewer@embarqmail.co	
ADDRESS 101 SE 591	CITY Warrensburg	STATE MO	ZIP CODE 64093	

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 SAME AS OWNER		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. 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 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? YES NO

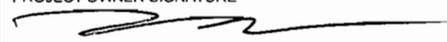
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? YES NO

D. 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 Jerry Lane/MECO Engineering Co., Inc.		TELEPHONE NUMBER WITH AREA CODE (573) 893-5558	E-MAIL ADDRESS jlane@mecoengineering.com	
ADDRESS 2701 Industrial Drive	CITY Jefferson City	STATE MO	ZIP CODE 65101	

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.

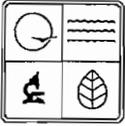
PROJECT OWNER SIGNATURE


PRINTED NAME
Bradley A. Come DATE
8-13-14

TITLE OR CORPORATE POSITION
Treasurer TELEPHONE NUMBER WITH AREA CODE E-MAIL ADDRESS

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.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
NO DEGRADATION EVALUATION
CONCLUSION OF ANTIDegradation REVIEW
 (Submit this form with the appropriate Permit Application)

1. FACILITY

NAME State Park Village Wastewater Treatment Plant		COUNTY Johnson	
ADDRESS (PHYSICAL) 133 SE 611	CITY Warrensburg	STATE MO	ZIP CODE 64093
FACILITY CONTACT: Lisa Simpson		TELEPHONE NUMBER WITH AREA CODE 660-747-9900	

2. NO DEGRADATION OPTIONS

- Renewal without changes
- Sewer extensions
- CSO elimination projects
- No-discharge with land application
- No-discharge with subsurface irrigation
- Recycle or reuse of effluent
- Discharge to a regional wastewater collection and treatment system.
- Addition or replacement of disinfection system for an existing wastewater facility: Ultraviolet or Ozone
 The facility will be required to meet regulatory effluent limits for bacteria.
- Addition or replacement for chlorination or dechlorination disinfection system of existing facility.
 The chlorination or dechlorination disinfection treatment system design must be for total removal of Total Residual Chlorine. Therefore, the facility will be required to meet the water quality-bases effluent limits determined by the permit writer or the following water quality-bases effluent limits:

Beneficial Use of Classified Water	MDL (µg/l)	AML (µg/l)
Warm-water fishery	17	8.2
Cold-water fishery	3.3	1.6

Note: These compliance limits for Total Residual Chlorine are much less than minimum quantification level, or ML, of 0.13. The facility will be required to meet regulatory effluent limits for bacteria.

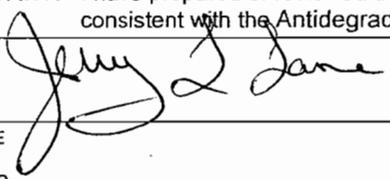
- Other, please describe: See Project Summary below.

Consulted with Water Protection Staff:

NAME 	DATE 8-13-14
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3. NO DEGRADATION PROPOSED PROJECT SUMMARY

1. Construct equalization basin with a volume of 14,625 gallons.
2. Removal of existing surface aerator.
3. Install diffusers in the existing aeration basin and proposed equalization basin.
4. Add two (2) regenerative blowers.
5. Removal of existing chlorinator and dechlorinator.
6. Add ultraviolet disinfection unit.
7. Design Average Daily Flow of Plant remains the same
8. The Equalization basin will reduce forward peak flow to aeration basin and clarifier which will improve the plants water quality performance.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.		
SIGNATURE 		DATE 8/13/14
PRINT NAME Jerry Lane		
TELEPHONE NUMBER WITH AREA CODE 573-893-5558		E-MAIL ADDRESS jlane@mecoengineering.com
Owner: I have read and reviewed the prepared documents and agree with this submittal.		
SIGNATURE		DATE
TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
Continuing Authority: Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf .		
I have read and reviewed the prepared documents and agree with this submittal.		
SIGNATURE		DATE
TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
<p>Return completed form with the appropriate Permit Application to: Missouri Department of Natural Resources Water Protection Program Water Pollution Control Branch P.O. Box 176 Jefferson City, MO 65102</p>		

MO780-2026 (01/09)