

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



**CONSTRUCTION PERMIT**

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

Missouri American Water Company  
727 Craig Road  
St. Louis, MO 63141

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.

October 5, 2018  
Effective Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

October 4, 2020  
Expiration Date

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

The facility proposed to convert the existing clarifier into an additional aeration basin, replace the existing solids trap with a new clarifier, and replace the chlorine contact chamber.

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 determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

### **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 Bartlett & West, Inc. on July 26, 3018.
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. 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.
6. 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/](http://dnr.mo.gov/env/wpp/401/) for more information.
7. Upon completion of construction:
  - A. The Missouri American Water Company will become the continuing authority for operation, maintenance, and modernization of these facilities;
  - B. Submit an electronic copy of the as built's 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)(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. CONSTRUCTION PURPOSE**

The purpose of the project is to improve operations at the facility by adding more aeration time, longer detention time in the clarifier, and more chlorine contact time. It will improve effluent water quality.

## **2. FACILITY DESCRIPTION**

The facility is an extended aeration plant with a clarifier, aerated sludge holding tank and chlorination/ dechlorination. Sludge hauled to Jefferson City WWTF.

The proposed project is converting the existing clarifier into an additional aeration basin, replacing the existing sludge holding tank with a new precast concrete hopped clarifier, and replacing a chlorine contact chamber. There will be no on-site sludge storage. The sludge is pumped into a truck and hauled to Jefferson City WWTP.

The MAWC Sunny Brook WWTF is located in the vicinity of Route 5 and South Country Club Drive, Jefferson City, in Cole County, Missouri. The facility has a design average flow of 8,000 gpd and serves a hydraulic population equivalent of approximately 80 people.

## **3. COMPLIANCE PARAMETERS**

The final effluent limits the project is required to meet are established in Operating Permit MO-0105759.

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

- Aeration Chambers – converting the existing clarifier 5.75 ft by 6 ft by 10.79 feet (372.26 ft<sup>3</sup>) into an additional aeration chamber along with the existing two aeration chambers operating in series by means of a transfer pipe with a total volume of 1,173.34 ft<sup>3</sup> will be provided. Aeration by means of duplex 3 hp blowers capable of supplying 31.78 scfm (to all three tanks) each including 7.67 scfm to 6 fine bubble diffusers in new chamber with a capacity of 1.28 scfm per diffuser. The aeration chambers are designed for an average daily loading of 17.6 lbs BOD<sub>5</sub>. A transfer pipe and elbow allows wastewater from the aeration chambers to move by gravity to the clarifier.
- Final Clarifier – The hopper type clarifier will have a surface area of 64 square feet. The volume of the clarifier is 4,300 gallons with an average overflow rate of 125 gpd/square foot. The hydraulic retention time is 13 hours which meets the minimum requirements of 10 CSR 20-8.020(13)(B)7. The clarifier has the dimensions of 6 feet wide by 8 feet long with a sidewater depth of 12 feet. The detention capacity of the hopper, using only the top third (by height) per 10 CSR 20-8.020(13)(B)7.C is 1,436 gallons.

- Chlorine Contact Tank – Installation of a pre-cast concrete tank approximately 7.5 ft x 5 ft x 2.21 ft with 4 end-around baffles allowing for a 43:1 length to width ratio. This tank will allow for a 28 minute contact time during a peak flow of 33,600 gpd. Existing tablet chlorination equipment will be salvaged and reinstalled in the new chlorine contact chamber.

## **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 in their next operating permit renewal application to reflect converting the existing clarifier into an additional aeration basin, replacing the existing sludge holding tank with a new precast concrete hoppered clarifier, and adding a chlorine contact chamber.

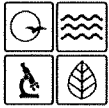
Lei Hou, PE  
Engineering Section  
[lei.hou@dnr.mo.gov](mailto:lei.hou@dnr.mo.gov)

RECEIVED

JUL 26 2018

AP 30333

CP 000 2018



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

FOR DEPARTMENT USE ONLY

APP NO. CP NO. FEE RECEIVED CHECK NO. DATE RECEIVED

75 812

APPLICATION OVERVIEW

The Application for Construction Permit - Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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?
1.2 Is this an application for an agrichemical?
1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
1.4 Has the department approved the proposed project's facility plan?
1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report\* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
1.6 Is a copy of the appropriate plans\* and specifications\* included with this application?
1.7 Is a summary of design\* included with this application?
1.8 Is a general operating permit applicable?
1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency?
1.10 Is the appropriate fee included with this application?

\* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Sunny Brook WWTF Improvements

2.2 PROJECT DESCRIPTION

The driver of the project is to improve operations of the Sunny Brook WWTF located in Cole County, Missouri. Capacity upgrades are not being pursued. In general, the scope of this project is to convert the existing clarifier into an aeration basin, replace the existing solids trap with a new hopped clarifier, and replace the chlorine contact chamber.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

MAWC pumps waste sludge out of this facility and hauls it to the Jefferson City WWTF for processing. The sludge handling will remain the same. Sludge is retained in the hopped clarifier until it is loaded into a truck and transported to the Jefferson City WWTF.

2.4 DESIGN INFORMATION

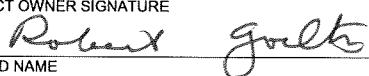
A. Current population: ; Design population: 80
B. Actual Flow: 3,500 gpd; Design Average Flow: 8,000 gpd;
Actual Peak Daily Flow: N/A gpd; Design Maximum Daily Flow: N/A gpd;
Design Wet Weather Event: N/A

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached?
B. Is a process flow diagram attached?

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$

3.0 WASTEWATER TREATMENT FACILITY				
NAME MAWC, Sunny Brook Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE (866) 430-0820		EMAIL ADDRESS Robert.Goeltz@amwater.com
ADDRESS (PHYSICAL) Route 5, South Country Club Drive		CITY Jefferson City	STATE MO	ZIP CODE 65109
COUNTY Cole				
Wastewater Treatment Facility: Mo- 0105759 (Outfall 001 Of 001 )				
3.1 Legal Description: ¼, SW ¼, NE ¼, Sec. 30 , T 44N , R 12W (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 561985 Northing (Y): 4265724 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: Unnamed tributary to Moreau River (U)				
4.0 PROJECT OWNER				
NAME Missouri American Water Company		TELEPHONE NUMBER WITH AREA CODE (314) 469-6050		EMAIL ADDRESS timothy.ganz@amwater.com
ADDRESS 727 Craig Rd		CITY St. Louis	STATE MO	ZIP CODE 63141
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 Missouri American Water Company		TELEPHONE NUMBER WITH AREA CODE (314) 469-6050		EMAIL ADDRESS timothy.ganz@amwater.com
ADDRESS 727 Craig Rd		CITY St. Louis	STATE MO	ZIP CODE 63141
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 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 Gary W. Davis, P.E. / Bartlett & West, Inc.		TELEPHONE NUMBER WITH AREA CODE (573) 659-6731		EMAIL ADDRESS gary.davis@bartwest.com
ADDRESS 1719 Southridge Drive, Suite 100		CITY Jefferson City	STATE MO	ZIP CODE 65109
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 Robert Goeltz			DATE 7/18/18	
TITLE OR CORPORATE POSITION Senior Project Engineer		TELEPHONE NUMBER WITH AREA CODE 314-996-2309		EMAIL ADDRESS robert.goeltz@amwater.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.				