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
Creve Coeur, 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.

May 2, 2018
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

May 1, 2020
Expiration Date

Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Modification to an existing sewage treatment facility by the addition of a tablet chlorinator, a chlorine contact chamber with an effective volume of approximately 260 gallons, a tablet dechlorinator, and all the necessary appurtenances to make the facilities complete and usable to treat the waste from a population equivalent of 75 with an average daily discharge of 5,625 gallons. This facility discharges to a Tributary to Cason Branch, Callaway County.

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 in accordance with the plans and specifications submitted by Flinn Engineering on January 11, 2018.

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. See 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/ for more information.

7. Upon completion of construction:

   A. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and

   B. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Seasonal E. coli. limits become effective September 1, 2018. This construction permit allows construction of the necessary disinfection equipment to meet bacteria limitations.

2. FACILITY DESCRIPTION

The existing treatment facility is a recirculating sand filter, the design population equivalent is 75 and the design flow is 5,625 GPD. The facility will be modified with the addition of a tablet chlorinator, a chlorine contact tank, and a tablet dechlorinator. The new construction will be located such that it intercepts the facility outfall pipe. The existing design flow and outfall location will remain unchanged. Outfall location: UTM zone 15; X = 580244, Y = 4279305

The MAWC, Cedar Hills Subd. WWTF is located at the end of Sherry Lane, north of Highway AA, City of Holts Summit, Callaway County, Missouri.

3. COMPLIANCE PARAMETERS

The proposed project is expected to help the facility meet the following final effluent limits of 206 #/100mL monthly average and 1030 #/100mL daily maximum E. coli and less than 130 µg/L monthly average and daily maximum total residual chlorine.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Tablet Chlorinator – Installation of a tablet chlorination dispenser [Norweco Bio-Dynamic®, Model ITR 2000S] receiving sand filter effluent and prior to the chlorine contact tank. The tablet chlorinator has a design flow capacity of 20,000 gpd and a maximum peak flow capacity of 100,000 gpd. The system will dispense hypochlorite as the wastewater comes into contact with the tablets.

Chlorine Contact Tank – Installation of a pre-cast concrete tank with inside dimensions of 5 ft. x 5 ft., effective water depth of 22 inches, with five end-around baffles allowing for at least 40:1 length to width ratio. Total effective contact volume of approximately 264 gallons. This volume allows for a 15 minute contact time during a peak flow of 22,500 gpd.

Tablet Dechlorinator – Installation of a tablet dechlorination dispenser [Norweco Bio-Dynamic®, Model ITR 2000S] receiving the chlorinated effluent and prior to the outfall. The tablet dechlorinator has a design flow capacity of 20,000 gpd and a maximum peak flow capacity of 100,000 gpd. The system will dispense sodium sulfite as the effluent comes into contact with the tablets.

5. OPERATING PERMIT

Operating permit MO-0121061 will require a modification to reflect the construction activities. Form B - Application for an Operating Permit for Domestic or Municipal Wastewater (≤100,000 gallons per day) along with the modification fee of $75.00 was received by the Department on January 11, 2018. The modified MAWC, Cedar Hills Subd. WWTF, MO-0121061, was placed on public notice on April 20, 2018.

Upon construction completion, submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.

Andrew Appelbaum P.E.
Engineering Section
andy.appelbaum@dnr.mo.gov

CP0001960

AP 29145

RECEIVED
JAN 11 2018
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED $1000.00	CHECK NO. 7000 45177
DATE RECEIVED 1-11-18	

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? ☐ YES ☑ N/A Funding Agency: _____ Project #: _____

1.2 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A

1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____

1.4 Has the department approved the proposed project's facility plan*?
☑ YES Date of Approval: 08/30/2017 ☐ NO ☐ N/A (If Not Applicable, complete No. 1.5.)

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?
☐ YES ☐ NO

1.6 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

1.7 Is a summary of design* included with this application? ☑ YES ☐ NO

1.8 Is a general operating permit applicable?
☐ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
☑ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☑ B ☐ B2

1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☑ NO

1.10 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
Cedar Hills Subdivision WWTF - Disinfection Upgrades

2.2 PROJECT DESCRIPTION
Installation of a chlorination chamber and calcium hypochlorite and sodium sulfite tablet feeders.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Sludge is retained in the septic tank.

2.4 DESIGN INFORMATION
A. Current population: 63 ; Design population: 75

B. Actual Flow: 5,000 gpd; Design Average Flow: 5,625 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd;
Design Wet Weather Event: _____

2.5 ADDITIONAL INFORMATION
A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

2.6 ESTIMATED PROJECT CONSTRUCTION COST
$ 45,900.00

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
Cedar Hills Subdivision WWTF	(573) 291-4977	Aaron.Lachowicz@amwater.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
0.25 Miles NE of Sherry Lane & Highway AA	Holts Summit	MO	65043	Callaway

Wastewater Treatment Facility: Mo- 0121061 (Outfall 001 Of 001)

3.1 Legal Description: NE ¼, SW ¼, ¼, Sec. 20 , T 45N , R 10W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 580244 Northing (Y): 4279305
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Cason Branch

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
Missouri American Water Company	(314) 996-2308	Robert.Goeltz@amwater.com

ADDRESS	CITY	STATE	ZIP CODE
727 Craig Road	Creve Coeur	MO	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	TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
Missouri American Water Company	(573) 291-4977	Aaron.Lachowicz@amwater.com

ADDRESS	CITY	STATE	ZIP CODE
727 Craig Road	Creve Coeur	MO	63141

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	TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
Jamie Richardson/Flinn Engineering	(309) 231-5086	

ADDRESS	CITY	STATE	ZIP CODE

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

Robert W Goeltz

PRINTED NAME	DATE
Robert W. Goeltz	01/08/18

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
Senior Project Manager	(314) 996-2308	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.

PART B – LAND APPLICATION ONLY
(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☐ Domestic ☐ State/National Park ☐ Seasonal business
☐ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain)

8.2 Months when the business or enterprise will operate or generate wastewater:
☐ 12 months per year ☐ Part of the year (list months):

8.3 This system is designed for:
☐ No-discharge ☐ Subsurface
☐ Partial irrigation when feasible and discharge rest of time
☐ Irrigation during recreational season, April – October, and discharge during November – March
☐ Other (explain)

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than two basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
Basin #1: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: _____ ft Basin #2: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: ☐ Fixed Head Sprinklers ☐ Center Pivot ☐ Traveling Gun ☐ Drip Dispersal
☐ Subsurface Low Pressure Pipe ☐ Other (describe) _____

10.2 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.3 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe)

10.4 Wastewater flow (dry weather) gallons per day: Average annual _____
Seasonal _____ Off-season _____

10.5 Land application rate (design flow including 1-in-10 year storm water flows):
Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.6 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.7 Actual months used for irrigation (check all that apply):
☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.8 Land application rate is based on:
☐ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N and P) If N and P is selected, is the plan included? ☐ YES ☐ NO