

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Gilman City
429 Main St.
Gilman City, MO 64642

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.

April 11, 2018

Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

April 10, 2020

Expiration Date

Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Existing discharging 3 cell lagoon system will be converted to a no-discharge land application system with the installation of a lift station, forcemain, and sprinkler heads in the nearby land application area. Existing discharge structure will be maintained in the third cell but is not designed to be used.

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

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 Allstate Consultants, LLC on July 26, 2017.
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. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment.

6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. Wastewater treatment facility shall not be located within one hundred feet (100'), and preferably three hundred feet (300') of any water well or water supply structure.
8. 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.
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 dnr.mo.gov/env/wpp/401/ for more information.
10. Upon completion of construction:
 - A. The City of Gilman City 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) and request the operating permit modification be issued; and
 - C. Submit an electronic copy of the as built's if the project was not constructed in accordance with previously submitted plans and specifications.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The existing three cell lagoon system does not meet effluent limits in the new operating permit. The facility was redesigned to serve as a no-discharge, land application system

2. FACILITY DESCRIPTION

This facility was constructed in 1982. Existing berms on the lagoon cells will be modified and stabilized, a lift station will be constructed, and connecting drawdown structures will be maintained and modified to achieve required storage volumes. Land application area is adjacent to the lagoon system.

The Gilman City WWTF is located east of Gilman City, in Harrison County, Missouri. The facility has a design average flow of 54,855 gpd and serves a population equivalent of approximately 500 people.

3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Existing major components which will remain in use include the following:

Lagoon Cell No. 1 – The influent is gravity fed into Lagoon Cell No. 1. Lagoon Cell No. 1 has a surface area of 2.9 acres and a wastewater volume of 3,820,436 gallons. Cell No. 2 has a surface area of .9 acres and a wastewater volume of 1,064,809 gallons. Cells 1 and 2 each have 6.9 ft of operating depth and 2 ft of sludge depth and share a common berm. Cell No. 3 has a surface area of 1.1 acres and a wastewater volume of 1,816,110 gallons with 9.9 ft of operating depth, a 0.5 deep emergency spillway, 1.1 ft. of freeboard, and 2 ft of sludge depth. Cell 3 shares a common berm with cells 1 and 2. This system provides approximately 122 total days of retention at the proposed design flow.

Construction will cover the following items:

Construction of a duplex, land application pump station to transfer treated wastewater from Lagoon Cell No. 3 to the land application site with each 125 HP pump capable of operating at 1182 gpm at 253 feet of TDH.

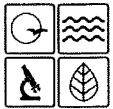
Construction of approximately 156 lf of 3-inch, 1238 lf of 4-inch, 3198 lf of 6-inch, 1661 lf of 8-inch, and 2857 lf of 10-inch PVC SDR-21 force main with cleanouts and air release valves to transfer wastewater from the land application pump station to the land application site. The land application site is adjacent to the storage lagoons and is approximately 41.6 acres in grass. This site is fenced. Maximum application rates are 0.5 inch/hour, 1 inch/day, 3 inches/week, and 24 inches/year.

The distribution system includes 7 solid set sprinklers per zone with 4 zones, for a total of 28 sprinklers. The sprinklers will be Nelson 100 taper bore series. The sprinklers will be set with a height 4 ft above existing grade and have a nozzle size of a 0.9 inch.

4. OPERATING PERMIT MODIFICATION

Operating permit MO-0098663 will require a modification to reflect the construction activities. The modified Gilman City WWTF, MO-0098663, was successfully public noticed from March 2, 2018 to April 2, 2018 with no comments received.

Diane Reinhardt
Engineering Section
Diane.reinhardt@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

**APPLICATION FOR CONSTRUCTION PERMIT -
WASTEWATER FACILITY**

Water Protection Program

RECEIVED

JUL 26 2017

CP0001928

AP27687

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
SEE RECEIVED	CHECK NO.
\$3000.00	2146
DATE RECEIVED	
7-26-17	

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: USDA-RD/CDBG Project #: MO-0098663
- 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: N/A
- 1.4 Has the department approved the proposed project's facility plan*?
☒ YES Date of Approval: April 13, 2016 ☐ 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
Form B
- 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
Enforcement with MDNR
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.) \$ 3,000

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Gilman City, Missouri - Wastewater Treatment Facility

2.2 PROJECT DESCRIPTION

Construction of Land Application No-Discharge System.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Lagoon Storage

2.4 DESIGN INFORMATION

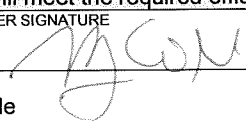
- A. Current population: 372; Design population: 500
- B. Actual Flow: 18,000 gpd; Design Average Flow: 50,000 gpd;
Actual Peak Daily Flow: 300,000 gpd; Design Maximum Daily Flow: 200,000 gpd;
Design Wet Weather Event: 200,000 gpd

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

\$ 1,333,326 - Construction, \$ 2,292,578 Total Estimated Cost

3.0 WASTEWATER TREATMENT FACILITY					
NAME City of Gilman City		TELEPHONE NUMBER WITH AREA CODE (660) 876-5613		EMAIL ADDRESS gchall@grm.net	
ADDRESS (PHYSICAL) 429 Main Street		CITY Gilman City	STATE Missouri	ZIP CODE 64642	COUNTY Harrison
Wastewater Treatment Facility: Mo- 0098663 (Outfall 001 Of 001)					
3.1 Legal Description: ¼, SE ¼, NE ¼, Sec. 30 , T 62N , R 26W (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): 426612 Northing (Y): 4443837 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: Unnamed Tributary to Tomestone Creek					
4.0 PROJECT OWNER					
NAME City of Gilman City		TELEPHONE NUMBER WITH AREA CODE (660) 876-5613		EMAIL ADDRESS gchall@grm.net	
ADDRESS 429 Main Street		CITY Gilman City	STATE Missouri	ZIP CODE 64642	
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 City of Gilman City		TELEPHONE NUMBER WITH AREA CODE (660) 876-5613		EMAIL ADDRESS gchall@grm.net	
ADDRESS 429 Main Street		CITY Gilman City	STATE Missouri	ZIP CODE 64642	
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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> NO					
6.0 ENGINEER					
ENGINEER NAME / COMPANY NAME Cary D. Sayre - Allstate Consultants LLC		TELEPHONE NUMBER WITH AREA CODE (660) 376-2941		EMAIL ADDRESS carysayre@allstateconsultants.net	
ADDRESS 30601 Highway 5, P.O. Box 156		CITY Marceline	STATE Missouri	ZIP CODE 64658	
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 Michelle Cole				DATE 7-11-17	
TITLE OR CORPORATE POSITION Mayor		TELEPHONE NUMBER WITH AREA CODE (660) 876-5613		EMAIL ADDRESS gchall@grm.net	
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: 3 (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	<u>170</u>	Width	<u>198</u>	Depth	<u>5</u>	Freeboard	<u>2</u>	Depth	<u>5</u>	Safety	<u>1</u>	% Slope	<u>33</u>
Basin #2:	Length	<u>560</u>	Width	<u>200</u>	Depth	<u>5</u>	Freeboard	<u>2</u>	Depth	<u>5</u>	Safety	<u>1</u>	% Slope	<u>33</u>
Basin #3:	Length	<u>350</u>	Width	<u>140</u>	Depth	<u>9</u>	Freeboard	<u>2</u>	Depth	<u>9</u>	Safety	<u>1</u>	% Slope	<u>33</u>

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level 5 ft Minimum operating water level 2 ft
Basin #2: Maximum operating water level 5 ft Minimum operating water level 2 ft
Basin #3: Maximum operating water level 8 ft Minimum operating water level 2 ft

9.5 Design depth of sludge in storage basins.
Basin #1: 2 ft Basin #2: 2 ft Basin #3: 2 ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: <1 ft Basin #2: <1 ft Basin #3: <1 ft

9.7 Total design sludge storage: 510 dry tons and 272,860 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 1 Total Acres 49 Maximum % field slopes 5
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, 33 Sec. 62N T 26W R Harrison County 49 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 18,250,000
Seasonal _____ Off-season _____

10.5 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 24 inches/year 0.39 inches/hour 1 inches/day 3 inches/week
Actual: 9.6 inches/year 0.7 inches/hour 0.39 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