



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

www.dnr.mo.gov

October 14, 2015

Ms. Mari Macomber, City Manager
City of Kirksville
201 South Franklin
Kirksville, MO 63501

RE: C295250-11 City of Kirksville, MO – Kirksville Wastewater Treatment Plant Upgrade,
MO-0049506, Construction Permit No. CP0001609

Dear Ms. Macomber:

The Department of Natural Resources' Water Protection Program has reviewed and approved the plans and specifications submitted by HDR Engineering, Inc. for the city of Kirksville, MO. Please find enclosed Construction Permit No. CP0001609 and one set of approved specifications. One set of approved plans has been sent under separate cover by Mr. Mark Bockstruck of my staff. You must maintain these with your official project file for a minimum of four years following completion of the project.

This permit will terminate 24 months from the date of issuance. In accordance with 10 CSR 20-6.010(4)(G), the department may grant an extension only one time. If you believe that an extension is necessary, you must submit a request and a justification in writing for the extension at least 30 days prior to the permit expiration date.

Nothing in this permit removes any obligations to comply with county or other local ordinances or restrictions.

If you were adversely affected by this decision, you may appeal to have the matter heard by the Administrative Hearing Commission. To appeal, you must file a petition with the Administrative Hearing Commission 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 Administrative Hearing Commission.

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If you have any questions concerning this matter, please contact Mr. Mark Bockstruck, of the Water Protection Program, at (573) 526-5631 or Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176.

Thank you for your efforts to help ensure clean water in Missouri.

Sincerely,

WATER PROTECTION PROGRAM



Shawn Muenks, P.E., Clean Water SRF Engineering Unit Chief
Financial Assistance Center

SM:mbc

Enclosures

c: Ms. Amanda Bagwell, P.E., HDR Engineering, Inc.
Northeast Regional Office
Mr. Mark Bockstruck, Water Protection Program, Financial Assistance Center
Mr. Terry Nelson, Water Protection Program, Financial Assistance Center

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

City of Kirksville 201 South Franklin Kirksville, MO 63501
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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.

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 14, 2015
Effective Date

October 13, 2017
Expiration Date

Sara Parker Pauley, Director, Department of Natural Resources

Director, Water Protection Program

CONSTRUCTION PERMIT

WASTEWATER TREATMENT PLANT:

Improvements to the current Kirksville Wastewater Treatment Plant include increasing the plant's overall average daily flow capacity to 4.0 million gallons per day (MGD) with the ability to handle peak flows of 12.0 MGD, a new influent pump station, a new headworks building with mechanical screening and vortex grit removal, new aeration basins with fine bubble diffusers and pre-anoxic basin, new secondary clarifiers, a new return activated sludge/waste activated sludge lift station, a new scum pump station, modifications to the existing anaerobic digesters to convert them to aerobic digesters with floating aerators, and modifications to the existing control building, including supervisory control and data acquisition (SCADA) control.

The project also includes the construction and installation of all necessary appurtenances to make a complete and usable wastewater treatment plant. The project will also include general site work appropriate to the scope and purpose of the project.

PERMIT CONDITIONS:

The permittee is authorized to construct subject to the following conditions:

1. All construction shall be in accordance with the plans and specifications submitted by HDR Engineering, Inc. on August 31, 2015. The specifications were signed and sealed by Ms. Amanda Bagwell, P.E. on August 17, 2015 and the plans were signed and sealed by Mr. Ryan Saffels, P.E. on August 17, 2015. The plans and specifications were approved by the department on October 14, 2015.
2. Regulation 10 CSR 20-4.040(19)(B)1 requires that projects be publicly advertised, allowing sufficient time for bids to be prepared and submitted. Projects should be advertised at least 30 days prior to bid opening.
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. As per 10 CSR 20-4.040, all changes in contract price or time within the approved scope of work must be by change order in accordance with Section 20 of this rule.

5. This construction permit does not authorize discharge.
6. 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.
7. 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."
 - A. 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.
 - B. 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.
 - C. Manholes should be located at least ten feet horizontally from any existing or proposed water main.
 - D. 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:
 - 1) 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

- 2) 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 may 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. Upon completion of construction:
 - A. The city of Kirksville 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
 - C. Submit an electronic copy of the as builts.

C:295252-11



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
NOV 25 2013
APPLICATION FOR CONSTRUCTION PERMIT -
WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO. 17014	CP NO. CP0001609
FEE RECEIVED \$2200.00	CHECK NO. 131106
DATE RECEIVED 11/25/13	

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: SRF Project #: _____
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: _____ Antideg submitted August 2012, not approved
 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: 11-12
 Enclosed is the appropriate operating permit application submittal. Denote which form: A B B2
 N/A Please explain: _____
- 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.)
Plans and Specifications submitted under separate cover.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Kirksville Wastewater Treatment Plant Improvements

2.2 PROJECT DESCRIPTION

Improvements to increase plant capacity to 4.0 MGD average and 12.0 MGD peak. Improvements include new Influent Pump Station, new Headworks Building with mechanical screening and vortex grit removal, new aeration basins (fine bubble diffusers) with pre-anoxic basin (mixers), new secondary clarifiers, new RAS/WAS Lift Station, new Scum Pump Station, modifications to existing anaerobic digesters to convert them to aerobic digesters (floating aerators), and modifications to the existing Control Building including SCADA control.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

The existing anaerobic digesters will be converted to aerobic digesters. From there, sludge will be sent to the sludge lagoon for storage. Sludge is pulled from the sludge lagoon and land applied.

2.4 DESIGN INFORMATION

- A. Current population: 17,505 ; Design population: 40,000
- B. Actual Flow: 2,920,000 gpd; Design Average Flow: 4,000,000 gpd;
 Actual Peak Daily Flow: >9,000,000 gpd; Design Maximum Daily Flow: 12,000,000 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 Kirksville WWTP		TELEPHONE NUMBER WITH AREA CODE 660-665-2861		E-MAIL ADDRESS
ADDRESS (PHYSICAL) 23002 Atlas Lane	CITY Kirksville	STATE MO	ZIP CODE 63501	COUNTY Adair
Wastewater Treatment Facility: Mo- 0049506 (Outfall 001 Of 002)				
3.1 Legal Description: SW <u>1/4</u> , SW <u>1/4</u> , SE <u>1/4</u> , Sec. <u>22</u> , T <u>62N</u> , R <u>15W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>537369</u> Northing (Y): <u>4445118</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Bear Creek</u>				
4.0 PROJECT OWNER				
NAME City of Kirksville		TELEPHONE NUMBER WITH AREA CODE (660) 627-1224		E-MAIL ADDRESS
ADDRESS 102 S. Franklin	CITY Kirksville	STATE MO	ZIP CODE 63501	
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 Kirksville		TELEPHONE NUMBER WITH AREA CODE (660) 627-1224		E-MAIL ADDRESS
ADDRESS 102 S. Franklin	CITY Kirksville	STATE MO	ZIP CODE 63501	
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 Ryan Saffels/HDR Engineering, Inc.		TELEPHONE NUMBER WITH AREA CODE (816) 554-3019		E-MAIL ADDRESS ryan.saffels@hdrinc.com
ADDRESS 3741 NE Troon Drive	CITY Lee's Summit	STATE MO	ZIP CODE 64064	
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 Mari E. Macomber			DATE 10-14-13	
TITLE OR CORPORATE POSITION City Manager		TELEPHONE NUMBER WITH AREA CODE 660-627-1225		E-MAIL ADDRESS mmacomber@kirksvillecity.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.
 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 three 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 _____	Berm Width _____	% Slope _____
Basin #2:	Length _____	Width _____	Depth _____	Freeboard _____	Berm Width _____	% Slope _____
Basin #3:	Length _____	Width _____	Depth _____	Freeboard _____	Berm Width _____	% 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
Basin #3:	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 Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.

Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

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

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____

Location: _____ 1/4, _____ 1/4, _____ 1/4, _____	Sec. _____ T _____ R _____	County _____	Acres _____
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____	Sec. _____ T _____ R _____	County _____	Acres _____
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____	Sec. _____ T _____ R _____	County _____	Acres _____

(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: Grass hay Pasture Timber Row crops
 Other (describe) _____

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

10.4 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

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

10.6 Actual months used for irrigation (check all that apply):

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

10.7 Land application rate is based on:

Hydraulic Loading Other (describe) _____
 Nutrient Management Plan (N&P) If N&P is selected, is the plan included? YES NO