

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 Herculaneum
Mr. James Kasten, City Administrator
One Parkwood Court
Herculaneum, MO 63048

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

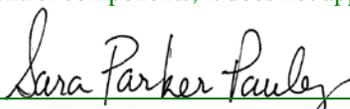
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

January 5, 2015
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

January 4, 2017
Expiration Date


John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The installation of a Flygt submersible pump and new valve vault will replace the existing dry well pump pit that has failed. A six-inch force main will connect the new pump station to the plant's existing influent pump station. The new pump will convey domestic waste generated by the two plant employees, the sludge dewatering process, and some rainwater to the treatment plant influent pump station.

II. FINDING OF AFFORDABILITY

The Finding of Affordability is not applicable. The Department is not adding any new environmental requirements by issuance of this construction permit.

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 CMV Engineering, LLC on December 2, 2014.
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 St. Louis 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. Upon completion of construction;
 - A. The City of Herculaneum 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 if the project was not constructed in accordance with previously submitted plans and specifications.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The existing pump station consists of a concrete wet well with a buried dry well pump pit 40 feet deep. The dry well pump pit has deteriorated to the point of failure. The existing pumps are outdated and replacement parts are unavailable. The city chose to replace the system with the installation of a Flygt submersible pump and new valve vault.

2. FACILITY DESCRIPTION

The existing facility includes an influent lift station, oxidation ditch, two clarifiers, ultraviolet disinfection, aerobic sludge digester, and sludge dewatering. The facility description will not change. The construction will convert an existing wet well/dry well pump station to a submersible pump station with a valve vault. The pump station conveys domestic waste generated at the on-site lab, the sludge dewatering process, and stormwater basins to the treatment plant influent pump station.

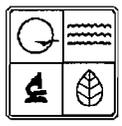
3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Maximum flow with the dewatering operation running while it is raining is 200 gpm. The pump is capable of 200 gpm at 52.1 feet TDH. The total pump cycle time is 34 minutes, 17 minutes on and 17 minutes off. If the pump goes out of service no sludge dewatering will take place and a portable temporary pump will be moved into place within a 12 hour period.

Cidny LePage, P.E.
Engineering Section
cindy.lepage@dnr.mo.gov

RECEIVED

APR 18 110-002/1111
CP0001689 C13934



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT -
SEWER EXTENSION

SEP 23 2014

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
RECEIVED \$750.00	CHECK NO. 64759
DATE RECEIVED 9/23/14	SB

WATER PROTECTION PROGRAM

NOTE ► PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

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 Department of Natural Resources approved the proposed project's engineering report**?
 YES Date of Approval: _____ NO N/A
- 1.3 Is a copy of the appropriate plans* and specifications* included with this application? YES NO
- 1.4 Is a summary of design* included with this application? YES NO
- 1.5 Is the appropriate fee included with this application? (See instructions for appropriate fee.) YES NO
- * Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT
TREATMENT PLANT DRAIN PUMP STATION

ADDRESS	CITY	STATE	ZIP CODE	COUNTY
MAIN STREET	HERCULANEUM	MO	63048	JEFFERSON

2.2 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. _____, T _____, R _____

- 2.3 Project Components (check all that apply):
 Gravity sewers Pumping stations Force mains Alternative sewer system Other (Describe below.)

2.4 PROJECT DESCRIPTION
REPLACE DRY PIT / WET WELL PUMP STATION WITH A WET WELL, SUBMERSIBLE PUMP STATION

2.5 DESIGN INFORMATION

- A. Population or number of lots to be served by this extension: _____
- B. Estimated flow to be contributed by this extension: Design Average Flow: 200 gpd Design Peak Hourly Flow: _____ gph
- C. Industrial Wastes: Type: _____ Flow: _____ gpd
- D. Receiving Sewer: Size: _____ inches Capacity: _____ gpm

3.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS	
CITY OF HERCULANEUM	(636) 475-4447		
ADDRESS	CITY	STATE	ZIP CODE
ONE PARKWOOD CT	HERCULANEUM	MO	63048

4.0 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	E-MAIL ADDRESS	
SAME			
ADDRESS	CITY	STATE	ZIP CODE

4.1 A letter from the continuing authority, if different than the owner, is included with this application. YES NO N/A

5.0 ENGINEER

ENGINEER NAME / COMPANY NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS	
CARL M. VOGT, P.E. CMV ENGINEERING, LLC	(314) 487-5354	CMVENGIN@EARTHLINK.NET	
ADDRESS	CITY	STATE	ZIP CODE
5751 GREENTON WAY	ST. LOUIS	MO	63128

6.0 RECEIVING WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
HERCULANEUM TREATMETN PLANT	(636) 475-4447	

MISSOURI STATE OPERATING PERMIT #		REMAINING CAPACITY (GPD) NO CHANGE	
6.1 Has the receiving treatment facility agreed to accept the additional wastewater flow? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
6.2 A letter from the receiving wastewater treatment facility, if different than the continuing authority, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A			
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.			
PROJECT OWNER SIGNATURE <i>James Kasten</i>			
PRINTED NAME James Kasten		DATE 09-15-2014	
TITLE OR CORPORATE POSITION City Administrator		TELEPHONE NUMBER WITH AREA CODE 314-808-5736	E-MAIL ADDRESS jKasten@cityofherculaneum.org
Mail completed copy to:		MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176	