



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

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

FEB 28 2014

Rhonda Elliot
Cannon WSD #1 WWTF
P.O. Box 430
Perry, MO 63462

RE: AP#16991 Wastewater Treatment Plant Improvements at Center, MO – Cannon Water Supply District #1 (Cannon WSD #1) Wastewater Treatment Facility, MO-0107719, Construction Permit No. 1608

Dear Ms. Elliot:

The Missouri Department of Natural Resources' (Department) Water Protection Program has reviewed the plans and specifications submitted by MECO Engineering Company, Incorporated for the Cannon WSD #1 – Center WWTF. Please find the enclosed Construction Permit No. CP0001608.

This permit will terminate 12 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.

This construction permit does not supersede any requirements of the operating permit or enforcement actions. Nothing in this permit removes any obligations to comply with county or other local ordinances or restrictions.

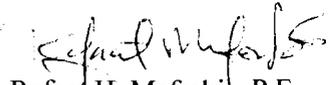
If you were adversely affected by this decision, you may appeal to have the matter heard by the Administrative Hearing Commission. To appeal, you must file a petition with the Administrative Hearing Commission within 30 days after the date this decision was mailed or the date it was delivered, whichever 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.

If you have any questions concerning this matter, please contact Steve Busch, of the Water Protection Program, at (573) 526-7558 or steve.busch@dnr.mo.gov or Missouri Department of Natural Resources, 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



Refaat H. Mefrakis, P.E.
Engineering Section Chief

RHM:ig

Enclosures

c: Leland Neher, P.E.; MECO Engineering Company, Inc.
Northeast Regional Office
Brittnie Brauner, Enforcement Case Manager, Water Protection Program
File Copy

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Cannon Water Supply District #1
P.O. Box 430
Perry, MO 63462

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.

February 27, 2014
Effective Date

February 26, 2015
Expiration Date

Sara Parker Pauley, Director, Department of Natural Resources

Director of Staff, Clean Water Commission or Designee

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The existing facility consists of a three (3) cell lagoon system. This system has a combined surface area of seven (7.0) acres with a storage capacity of 12.75 million gallons. The proposed modification includes the addition of a single cell irrigation feed storage lagoon (7.0 million gallons storage capacity) and a sixty (60) acre irrigation facility, at the current site, to land apply the effluent from the existing lagoon system. Two reel type irrigation units will be utilized to land apply the treated wastewater to a designated, zoned area. The facility will become a no-discharge facility when the proposed modification has been completed.

The proposed modification will eliminate the discharge from the facility to waters of the State. As a no-discharge facility effluent limitations that were consistently exceeded will be eliminated.

II. FINDING OF AFFORDABILITY

The Finding of Affordability is not applicable. The permittee is not a combined or separate sanitary sewer system or a publicly 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 MECO Engineering Company, Incorporated, which were received November 5, 2013.
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 NE 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."
 - 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:

 - 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.
7. 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.
8. 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.

9. Upon completion of construction;
 - A. Cannon WSD #1 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);
 - C. Submit an electronic copy of the “as built” drawings if the project was not constructed in accordance with previously submitted plans and specifications; and

IV. REVIEW SUMMARY

1. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA’s published ammonia criteria for aquatic life protection is lower than the current Missouri criteria and will be proposed in the 2014 Missouri Water Quality Standards triennial review. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The Department has had a variety of communications pertaining to ammonia with the permittee and/or its engineer. A letter was sent to the permittee October 23, 2013; to provide background information on EPA’s published ammonia criteria and to inform them of the Departments intent to implement such standards. The Department’s review engineer also discussed ammonia criteria with Cannon WSD #1’s consulting engineer several times. The wastewater management approach selected took nutrient management issues into consideration in the Facility Plan. The ultimate wastewater management selection was influenced by the anticipation of more stringent nutrient discharge limitations.

2. CONSTRUCTION PURPOSE

Based on discharge monitoring reports (DMRs) the existing facility has consistently exceeded permit limits for biochemical oxygen demand (BOD), total suspended solids (TSS), and fecal coliform the past several years. Other permit limits were also exceeded during the permit; however, with far less frequency than BOD, TSS, and fecal coliform. Based on the permit limit exceedances and anticipated imminent increase in nutrient effluent limitations, the permittee concluded it was necessary to upgrade their wastewater treatment facility.

3. FACILITY DESCRIPTION

The existing facility consists of a three (3) cell lagoon system. This system has a combined surface area of seven (7.0) acres with a storage capacity of 12.75 million gallons. The current facility discharges to Sugar Creek. The proposed modification includes the addition of a single cell irrigation feed storage lagoon (7.0 million gallons storage capacity) and a sixty (60) acre irrigation facility, at the current site, to land apply the effluent from the existing lagoon system. Two reel type irrigation units will be utilized to land apply the treated wastewater to a designated, zoned area. The facility will become a no-discharge facility when the proposed modification has been completed.

4. COMPLIANCE PARAMETERS

The proposed modification will eliminate the discharge from the facility to waters of the State. As a no-discharge facility effluent limitations that were consistently exceeded will be eliminated.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The design of this no-discharge facility is consistent with the criteria specified in 10 CSR 20-8.220, Land Treatment.

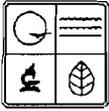
6. OPERATING PERMIT MODIFICATION

Operating permit MO-0107719 requires modification to reflect the construction activities. The operating permit will be converted from a discharge permit with effluent limitations to a no-discharge permit. A copy of the operating permit that will become effective upon completion of the proposed modification is provided as Appendix A.

Review Engineer: Stephen P. Busch
Unit Chief Approval: Cindy LePage
Date: February 20, 2014

RECEIVED CPOW 11/08

AP16991 C12480



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
NOV 05 2013
APPLICATION FOR CONSTRUCTION PERMIT -
WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
\$750.00	14453
DATE RECEIVED	
11/5/13	SB

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: RD Project #: _____
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: _____
 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: _____
 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.)

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Wastewater Treatment Plant Improvements at Center Mo

2.2 PROJECT DESCRIPTION

The addition of a storage cell, irrigation pump and distribution to irrigate effluent on 60 acres of land to achieve no discharge.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge will be retained in the existing lagoon cells

2.4 DESIGN INFORMATION

- A. Current population: 508; Design population: 1000
- B. Actual Flow: 60000 gpd; Design Average Flow: 99,000 gpd;
Actual Peak Daily Flow: 445,900 gpd; Design Maximum Daily Flow: 445,900 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 CWSD #1 wastewater Treatment Facility at Center Mo		TELEPHONE NUMBER WITH AREA CODE 573-565-2656	E-MAIL ADDRESS	
ADDRESS (PHYSICAL) 1.5 miles east of Center Mo on hwy 19	CITY Center	STATE MO	ZIP CODE 63436	COUNTY Ralls
Wastewater Treatment Facility: Mo- 0107719 (Outfall Of)				
3.1 Legal Description: _____ ¼, SE _____ ¼, NW _____ ¼, Sec. 30, T 55N, R 5W (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>+3931158</u> Northing (Y): <u>-99130162</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Sugar Creek</u>				

4.0 PROJECT OWNER

NAME Cannon Water Supply District #1		TELEPHONE NUMBER WITH AREA CODE (573) 565-2656	E-MAIL ADDRESS cwater@rallstech.com	
ADDRESS PO Box 430	CITY Perry	STATE MO	ZIP CODE 63462	

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 Same as Above		TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS	
ADDRESS	CITY	STATE	ZIP CODE	

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 Scott Vogler/MECO Engineering Co.		TELEPHONE NUMBER WITH AREA CODE (573) 893-5558	E-MAIL ADDRESS svogler@mecoengineering.com	
ADDRESS 2701 Industrial Drive	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
Rhonda Elliott for Cannon Water Dist #1

PRINTED NAME Rhonda Elliot	DATE 10/23/13
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TITLE OR CORPORATE POSITION Manager	TELEPHONE NUMBER WITH AREA CODE (573) 565-2656	E-MAIL ADDRESS cwater@rallstech.com
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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: 4 (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 <u>547</u>	Width <u>447</u>	Depth <u>9.5</u>	Freeboard <u>2</u>	Berm Width <u>12</u>	% Slope <u>3:1</u>
Basin #2:	Length <u>290</u>	Width <u>251</u>	Depth <u>9.5</u>	Freeboard <u>2</u>	Berm Width <u>12</u>	% Slope <u>3:1</u>
Basin #3:	Length <u>122</u>	Width <u>257</u>	Depth <u>12.5</u>	Freeboard <u>2</u>	Berm Width <u>12</u>	% Slope <u>3:1</u>

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1:	Maximum operating water level <u>7.5</u> ft	Minimum operating water level <u>2</u> ft
Basin #2:	Maximum operating water level <u>7.5</u> ft	Minimum operating water level <u>2</u> ft
Basin #3:	Maximum operating water level <u>10.5</u> ft	Minimum operating water level <u>2</u> ft

9.5 Design depth of sludge in storage basins.
Basin #1: 1.5 ft Basin #2: 1.5 ft Basin #3: 1.5 ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: 0.92 ft Basin #2: 0.74 ft Basin #3: 0.54 ft

9.7 Total design sludge storage: 312 dry tons and 250,067 cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites 1 Total Acres 60 Maximum % field slopes 5
Location: _____ ¼, _____ ¼, NW ¼, 30 Sec. 55N T 5W R _____ County 60 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.)

10.2 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: 22 inches/year 0.5 inches/hour 0.5-1 inches/day 0.5-1 inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: 36,135,000 gal Actual: 21,900,000 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

Form 780-2189

Cannon Water Supply District Wastewater Treatment Facility at Center Mo

Continuation of Item 9.3

Basin #4: Area of basin at top edge of berm is 106,604 sq ft

Total Depth is 14 feet

Freeboard is 2 feet

Berm Width is 12 feet

Inner Slopes are 3:1

Continuation of Item 9.4

Basin #4 Maximum operating water level is 12 feet

Minimum operating level is 2 feet

Continuation of Item 9.5

Basin #4 Design sludge storage depth is 1.5 feet

Continuation of Item 9.6

Basin #4 Existing sludge depth will be 0.0 feet