

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Ayers Oil Company
P.O. Box 229
Canton, MO 63435

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.

December 23, 2014
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

December 22, 2016
Expiration Date


John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The proposed project is to add an Orenco UV Disinfection Unit prior to wastewater entry to the discharge basin of the Ayerco Station #26 wastewater treatment facility (WWTF). The Orenco UV unit has a capacity to disinfect 10 gallons per minute of wastewater (after secondary treatment); which is greater than the peak design flow.

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 Klingner & Associates with a received on date of December 5, 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 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."

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. A full closure plan shall be submitted to the Department's NE Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO-0128597. Closure shall not commence until the submitted closure plan is approved by the Department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri State Operating Permit, once closure is completed in accordance with the approved closure plan.
11. Upon completion of construction;
 - A. The Ayers Oil Company 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
 - D. When the permittee applies for the renewal of their operating permit, they will be expected to include an updated facility description on their application.

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. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

2. CONSTRUCTION PURPOSE

The proposed project is to add an Orenco UV Disinfection Unit prior to wastewater entry to the discharge basin of the Ayerco Station #26 wastewater treatment facility (WWTF). The Orenco UV unit is intended to disinfect up to 10 gallons per minute of wastewater (after secondary treatment); which is greater than the peak design flow.

3. FACILITY DESCRIPTION

The existing WWTF consists of two septic tanks in series followed by a 520 square foot recirculating sand filter and a 2,000-gallon recirculating tank. The WWTF effluent flows to a discharge basin where is pumped to a unnamed tributary to the Mississippi River. The UV disinfection unit is being added to treat the WWTF effluent as it flows into the discharge basin.

4. COMPLIANCE PARAMETERS

The purpose of this project is to insure the facility can comply with the *E. coli* limit in its operating permit (MO0128597).

5. REVIEW OF MAJOR TREATMENT DESIGN CRITERIA

The UV disinfection unit is designed to insure the contact chamber UV dose is a least $30,000 \mu\text{W}\cdot\text{s}/\text{cm}^2$ as specified in *Recommend Standards for Wastewater Facilities* (i.e., "10 States Standards"). The existing treatment facility is capable of pretreating wastewater so that the UV Unit will provide at least 65% ultraviolet radiation transmittance at 254 nanometers wave length. The facility will maintain a spare bulb and ballast for the single bulb unit. The UV disinfection system is equipped with a visual and audible alarm for lamp failure.

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0128597 will not require a modification to reflect the construction activities. The permittee is expected to include a new facility description in their next operating permit renewal application to reflect the installation of a UV disinfection system.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT
 WASTEWATER TREATMENT FACILITY**

RECEIVED

DEC 05 2014

120011
 CP0001703
 AP20138

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1750.00	CHECK NO. 181597
DATE RECEIVED 12-5-14	

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: _____ 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: Exist.
- 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

UV Disinfection Unit Installation - Ayers Oil Co. - Alexandria MO Facility

2.2 PROJECT DESCRIPTION

Installation of a UV disinfection unit in the pump discharge well for effluent from a recirculating sand filter wastewater treatment system. One UV unit with a rating of 10 gpm will be installed.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

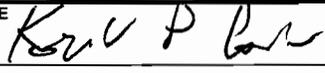
None.

2.4 DESIGN INFORMATION

- A. Current population: 6; Design population: 40
- B. Actual Flow: 300 gpd; Design Average Flow: 2000 gpd;
 Actual Peak Daily Flow: 600 gpd; Design Maximum Daily Flow: 4000 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 Ayerco #26 Alexandria Station		TELEPHONE NUMBER WITH AREA CODE 573-288-4464		E-MAIL ADDRESS Kevin@moayerco.com
ADDRESS (PHYSICAL) US Rt. 61	CITY Alexandria	STATE MO	ZIP CODE 63430	COUNTY Clark
Wastewater Treatment Facility: Mo- 0128597 (Outfall 1 Of 1)				
3.1 Legal Description: SE $\frac{1}{4}$, NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 4, T 64N, R 5W (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>631932.754</u> Northing (Y): <u>4470554.188</u> X: 631932.754 Y: 4470554.188 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Unnamed Tributary to Mississippi River</u>				
4.0 PROJECT OWNER				
NAME Ayers Oil Company		TELEPHONE NUMBER WITH AREA CODE (573) 288-4464		E-MAIL ADDRESS Kevin@moayerco.com
ADDRESS 610 N. 4th St., PO Box 229	CITY Canton	STATE MO	ZIP CODE 63435	
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 Same as above	CITY	STATE	ZIP CODE	
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 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 Daniel L. Oliver / Klingner & Assoc.		TELEPHONE NUMBER WITH AREA CODE (217) 223-3670		E-MAIL ADDRESS doliver@klingner.com
ADDRESS 616 N. 24th St.	CITY Quincy	STATE IL	ZIP CODE 62301	
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 X 				
PRINTED NAME Kevin Cain			DATE 12/2/14	
TITLE OR CORPORATE POSITION Facilities Manager		TELEPHONE NUMBER WITH AREA CODE (573) 288-4464		E-MAIL ADDRESS Kevin@moayerco.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.				