

**STATE OF MISSOURI**  
**DEPARTMENT OF NATURAL RESOURCES**  
MISSOURI CLEAN WATER COMMISSION



## CONSTRUCTION PERMIT

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

Agape Land Management, L.P.  
12998 East 1400 Road  
Stockton, MO 65785

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

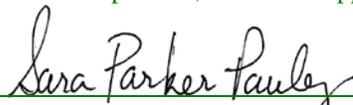
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

March 2, 2015  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

March 1, 2017  
Expiration Date

  
John Madras, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Modification to an existing wastewater treatment facility by the addition of ultraviolet disinfection, Aqua Azul AZHO-400 or equal; 2 UV lamp modules, with 2 UV lamps per module, having a peak capacity of 83,500 GPD, and all the necessary appurtenances to make the facilities complete and usable to treat the effluent from an existing recirculating sand filter, with a design average daily discharge of 29,900 gallons. This facility discharges to a Tributary to Polecat Creek, Cedar County, Missouri.

### **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 Sherman Engineering Services on January 5, 2015.
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 Southwest 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](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://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/](http://www.dnr.mo.gov/env/wpp/401/) for more information.

10. Upon completion of construction;
  - A. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D);
  - B. Submit an electronic copy of the as-builts if the project was not constructed in accordance with previously submitted plans and specifications; and
  - C. When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application. Ensure that "Ultraviolet Disinfection" is included in the facility description.

#### **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>.

Ammonia limits were discussed with the owner's consultant, Warner Sherman, P.E. on 2-8-2015. The current operating permit contains "monitoring only" for ammonia. Mr. Sherman said he will help the facility try to adjust operations to achieve optimum ammonia treatment. If capital improvements are necessary they will be done at a later time. Ammonia treatment is not being addressed with this construction permit. The Ammonia fact sheet, Pub2481 was sent to Mr. Sherman.

##### **2. CONSTRUCTION PURPOSE**

Missouri State Operating Permit, MO-0127680 issued June 20, 2011, requires compliance with whole body contact recreation (B), e-coli limitations by January 1, 2014. E-coli limitations are effective April 1, through October 31. E-Coli limits will be met by providing ultraviolet disinfection.

##### **3. FACILITY DESCRIPTION**

The existing treatment facility is a recirculating sand filter with a design flow of 29,900 GPD and a design PE of 399. The filter area is based on a design of 5 GPD per sq. ft. The facility will be modified with the addition of an Ultraviolet Disinfection unit.

**4. COMPLIANCE PARAMETERS**

E-coli limitations are effective April 1, through October 31. E-Coli limits will be met by providing ultraviolet disinfection. The e-coli limits are: monthly average of 206 colonies/100 ml; daily maximum of 1030 colonies/100 ml. The construction improvements do not intend to aid the facility in the treatment of ammonia.

**5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

The ultraviolet disinfection equipment provided will consist of two modules with 2 UV lamps each. The ultraviolet disinfection equipment is specified to provide adequate disinfection to a peak flow rate of 58 gallons per minute with a UV transmittance of 65%. The UV dose will be a minimum of 30,000 micro watt seconds/square cm. with a wavelength of 254 nanometers.

**6. OPERATING PERMIT MODIFICATION**

It is expected that the facility owner will include a new facility description in their next operating permit renewal application to reflect the installation of an ultraviolet disinfection system.

Andrew Appelbaum, P.E.  
Engineering Section  
[andy.appelbaum@dnr.mo.gov](mailto:andy.appelbaum@dnr.mo.gov)

RECEIVED

MO 01276803 CR 0027717

11/20/15 114277



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH  
FORM B - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR  
FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE (5100,000 gallons per  
day) UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	21587
DATE RECEIVED	11/15/15
FEE SUBMITTED	\$7500.00

NOTE ► PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. This application is for:

- An operating permit and antidegradation review public notice.
- A construction permit following an appropriate operating permit and antidegradation review public notice.
- A construction permit and a concurrent operating permit and antidegradation review public notice.
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- An operating permit for a new or unpermitted facility. Construction Permit # \_\_\_\_\_
- An operating permit renewal: Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_
- An operating permit modification: Permit #MO- \_\_\_\_\_ Reason: \_\_\_\_\_

1.1 Is this a Federal/State Funded Project?  YES  NO Funding Agency/Project #: \_\_\_\_\_

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)?  YES  NO

2. FACILITY (Outfall of )

NAME Agape Boarding School WWTF (MO - 0127680)	TELEPHONE WITH AREA CODE (417) 276-7215
ADDRESS (PHYSICAL) 12998 East 1400 Road	CITY Stockton
STATE MO	ZIP CODE 65785

2.1 LEGAL DESCRIPTION: NW ¼, NW ¼, NE ¼, Sec. 13 , T 34 , R 27 Cedar County

2.2 UTM Coordinates Easting (X): 425885 Northing (Y): 417218  
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: \_\_\_\_\_

3. OWNER

NAME Agape Land Management, L.P. (jim@agapeboardingschool.org)	E-MAIL ADDRESS see left	TELEPHONE WITH AREA CODE (417) 276-7215
ADDRESS 12998 East 1400 Road	CITY Stockton	STATE MO
		ZIP CODE 65785

3.1 Request review of draft permit prior to Public Notice?  YES  NO

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME same as 3.	TELEPHONE WITH AREA CODE
ADDRESS	CITY
	STATE
	ZIP CODE

5. OPERATOR

NAME Not Applicable	CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE
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6. FACILITY CONTACT

NAME Jim Clemensen	TITLE Director	TELEPHONE WITH AREA CODE (417) 276-7215
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7.0 ADDITIONAL FACILITY INFORMATION

7.1 Description of facilities (Attach additional sheet if required). Attach a 1" = 2,000' scale U.S. Geological Survey topographic map showing location of all outfalls and downstream landowners. (See Item 9.)

7.2 Facility SIC code: n/a ; Discharge SIC code: 4952 ; Facility NAICS code: n/a ; Discharge NAICS code: \_\_\_\_\_

7.3 Number of people presently connected or population equivalent (P.E.) 150 Design P.E. 399  
Number of units presently connected: Homes 30 Trailers \_\_\_\_\_ Apartments \_\_\_\_\_ Other \_\_\_\_\_  
Design flow for this outfall: 0.03 Total design flow for the facility: .03 mgd Actual flow for this outfall: .01 mgd  
Commercial Establishment: Daily number of employees working N/A Daily number of customers/guests N/A

7.4 Length of pipe in the sewer collection system? N/A feet/miles (Please denote which unit is appropriate.)

7.5 Does any bypassing occur in the collection system or at the treatment facility?  Yes  No (If yes, attach explanation.)

7.6 Does significant infiltration occur in the collection system?  Yes  No (If yes, attach explanation and proposed repair.)

7.7 Is industrial waste discharged to the facility identified in Item 2?  Yes  No (If yes, see instructions.)

7.8 Will the discharge be continuous through the year?  Yes  No  
a. Discharge will occur during the following months: January - December  
b. How many days of the week will the discharge occur? 7

7.9 Is wastewater land applied?  Yes  No (If yes, attach Form I.)

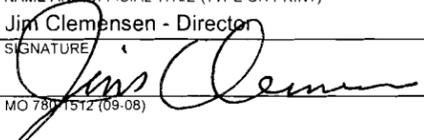
7.10 Will chlorine be added to the effluent?  Yes  No  
a. If chlorine is added, what is the resulting residual? \_\_\_\_\_ µg/l (micrograms per liter)

7.11 Does this facility discharge to a losing stream or sinkhole?  Yes  No

7.12 Attach a flow chart showing all influents, treatment facilities and outfalls.

7.13 Has a waste load allocation study been completed for this facility?  Yes  No

7.14 List all permit violations, including effluent limit exceedances in the last five years. Attach a separate sheet if necessary.  
If none, write none. None

<b>8. SLUDGE HANDLING, USE AND DISPOSAL</b>			
8.1	Is the sludge a hazardous waste as defined by 10 CSR 25? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
8.2	Sludge Production, including sludge received from others: <u>11.4</u> Design Dry Tons/Year <u>2.3</u> Actual Dry Tons/Year		
8.3	Capacity of sludge holding structures: Sludge storage provided: <u>3,000</u> cubic feet; <u>120</u> days of storage; <u>3</u> average percent solids of sludge; <input type="checkbox"/> No sludge storage is provided.		
8.4	Type of Storage:	<input checked="" type="checkbox"/> Holding tank <input type="checkbox"/> Basin <input type="checkbox"/> Concrete Pad	<input type="checkbox"/> Building <input type="checkbox"/> Other (Please describe) _____
8.5	Sludge Treatment:	<input type="checkbox"/> Anaerobic Digester <input checked="" type="checkbox"/> Storage Tank <input type="checkbox"/> Lime Stabilization	<input type="checkbox"/> Lagoon <input type="checkbox"/> Aerobic Digester <input type="checkbox"/> Air or Heat Drying <input type="checkbox"/> Composting <input type="checkbox"/> Other (Attach description)
8.6	Sludge Use or Disposal:	<input checked="" type="checkbox"/> Land Application <input type="checkbox"/> Contract Hauler <input type="checkbox"/> Hauled to Another Treatment Facility <input type="checkbox"/> Solid Waste Landfill	<input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years) <input type="checkbox"/> Incineration <input type="checkbox"/> Sludge Retained in Wastewater treatment lagoon <input type="checkbox"/> Other _____ Attach explanation sheet.
8.7	<b>PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY</b> <input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (complete below)		
NAME			
ADDRESS		CITY	STATE ZIP CODE
CONTACT PERSON		TELEPHONE WITH AREA CODE	PERMIT NO. MO-
<b>8.8 SLUDGE USE OR DISPOSAL FACILITY</b> <input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (Please complete below.)			
NAME			
ADDRESS		CITY	STATE ZIP CODE
CONTACT PERSON		TELEPHONE WITH AREA CODE	PERMIT NO. MO-
8.9	Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Please attach explanation)		
<b>9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.</b>			
NAME			
Gene and Andrea Harvey			
ADDRESS		CITY	STATE ZIP CODE
12210 East 1400 Road		Stockton	MO 65785
<b>10. DRINKING WATER SUPPLY INFORMATION</b>			
10.1	WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY: A. Public supply (municipal or water district water) _____ If public, please give name of the public supply _____ B. Private well <u>MO5172802</u> C. Surface water (lake, pond or stream) _____		
10.2	Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
10.3	Does your supply serve housing which is occupied year round by the same people? This does not include housing which is occupied seasonally? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
11.	I certify that I am familiar with the information contained in the application, that 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 the Missouri Clean Water Law.		
NAME AND OFFICIAL TITLE (TYPE OR PRINT)		TELEPHONE WITH AREA CODE	
Jim Clemensen - Director		(417) 276-7215	
SIGNATURE		DATE SIGNED	
		12-31-14	