

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

American Resorts Cottage Owners Association of Lake Stockton, Inc.
1816 Northwest 450 Road
Kingsville, MO 64061

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

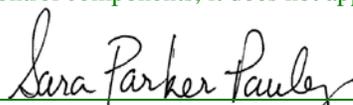
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

May 5, 2016
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

May 4, 2018
Expiration Date


John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The American Resorts Subdivision WWTF is a 7,800 gallon per day (gpd) treatment facility. The proposal includes demolishing the existing treatment facility and replacement with a new extended aeration package plant with disinfection. Construction will include a new coarse bar screen, flow equalization, an extended aeration process with two aeration chambers, final clarifier, tablet chlorination, tablet dechlorination, and an aerobic sludge holding chamber.

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-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 Schultz Surveying & Engineering on February 25, 2016 and February 29, 2016.
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 10 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 10 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 10 feet horizontally from any existing or proposed water main.
 - C. Manholes shall be located with the top access at or above grade level.
 - 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 10 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 American Resorts Cottage Owners Association of Lake Stockton Inc. 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 builts if the project was not constructed in accordance with previously submitted plans and specifications; and
 - D. When the facility applies for their next operating permit renewal, 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>.

In a facility plan response letter dated June 10, 2014, the proposed treatment facility is expected to be able to meet an ammonia effluent limit of 1.4 milligrams per liter. EPA's ammonia criteria will be addressed at a future time.

2. CONSTRUCTION PURPOSE

The existing extended aeration treatment facility has reached the end of its useful life. In addition, the existing facility has had many effluent limit value exceedances and the previous department inspection on March 29, 2012 resulted in a notice of violation. The current Missouri State Operating Permit (MSOP) No. MO-0093220 contains a schedule of compliance to meet Ammonia as N effluent limitations, which began August 1, 2015. Future effluent limitations cannot be reliably expected from the present treatment facility. The American Resorts Cottage Owners Association of Lake Stockton, Inc. elected to construct and install a new wastewater treatment facility without changing the effluent discharge to the unnamed tributary to Stockton Lake.

3. FACILITY DESCRIPTION

The proposed facility will include a coarse bar screen, flow equalization, an extended aeration process with two aeration chambers, clarifier, tablet chlorination, tablet dechlorination, aerated sludge holding tank, and sludge removed by contract hauler. The discharge location remains the same to the receiving waterbody of the unnamed tributary to Stockton Lake.

The treatment facility is located at 15071 East 1810 Road, Stockton, in Cedar County, Missouri. The facility will remain with the same design flow of 7,800 gpd and serving a population equivalent of approximately 78 people.

4. COMPLIANCE PARAMETERS

The new treatment facility will meet the current effluent limits in the American Resorts Subdivision WWTF, MSOP No. MO-0093220:

- BOD₅ limits of 20 mg/L monthly average and 30 mg/L weekly average.
- TSS limits of 20 mg/L monthly average and 30 mg/L weekly average.
- pH range of 6.5 to 9.0.
- Ammonia limits (April 1 – Sept 30) of 1.4 mg/L monthly average and 3.6 mg/L daily maximum.
- Ammonia limits (Oct 1 – March 31) of 2.9 mg/L monthly average and 7.7 mg/L daily maximum.
- E. coli limits of 126 colonies/100 mL monthly average and 630 colonies/100 mL daily maximum.
- Total Residual Chlorine limits of 130 µg/L monthly average and daily maximum.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction will cover the following items:

- Screening – A manual coarse bar screen shall be provided for the removal of large inorganics from the influent wastewater stream. The coarse bar screen will have clear bar spacings of 1 inch and be placed at an angle of 40 degrees to allow for manual raking of the screen.

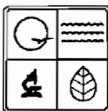
- Jet Wastewater Treatment Solutions Model JCP-3000 Extended Aeration Package Plant capable of treating a design average flow of 12,000 gpd. The following components are integrated into the pre-cast concrete package plant:
 - Flow Equalization – A flow equalization chamber with a 5,957 gallon capacity will be provided. Aeration by means of duplicate blowers with one horsepower motors capable of supplying 10 standard cubic feet of air per minute (scfm) each to six diffusers with a capacity of one scfm per diffuser. Duplex flow equalization pumps which are time dosed transfer wastewater to the first aeration chamber.
 - Aeration Chambers – Two aeration chambers operating in series by means of a transfer pipe with a total volume of 1,636 cubic feet will be provided. Aeration by means of duplicate blowers with three horsepower motors capable of supplying 57 scfm each to six diffusers per chamber with a capacity of 3.15 scfm per diffuser. The aeration chambers are designed for an average daily loading of 20.4 pounds of applied BOD₅. A transfer pipe and elbow allows wastewater from the second aeration chamber to move by gravity to the clarifier.
 - Final Clarification – The final clarifier will have a settling volume of 4,416 gallons and a detention time of four hours with a settling rate of 160 gpd/ft². An air lift surface skimmer is provided to remove grease and floatables and return to the second aeration chamber. An adjustable v-notch weir provides one linear foot of skimming surface for each 1,090 gpd. The clarified effluent will flow by gravity to the chlorine contact chamber. An air lift pump with a ½ horsepower motor will be provided to move settled sludge from the two square hopper bottoms to the sludge holding chamber or return to the aeration chamber. Sludge removal shall be by contract hauler.
 - Sludge Holding Chamber – The sludge holding chamber will have a volume of 5,957 gallons. The duplicate aeration chamber blowers will supply air to the six diffusers with a capacity of one scfm per diffuser.
- Disinfection – Disinfection shall be provided by tablet chlorination and tablet dechlorination. The chlorine contact chamber will be a 1,500 gallon pre-cast concrete tank with seven baffles. The Jet-Chlor Model 110 tablet feeder will provide chlorination and effluent flow measurement by means of a calibrated outlet weir plate. The detention time in the chlorine contact chamber is 180 minutes. Dechlorination will be provided by the Jet-Dechlor Model 110 tablet feeder. Prior to the dechlorination tablet feeder, one diffuser with a three scfm capacity is installed and supplied by the duplicate aeration chamber blowers. The chlorine contact chamber also includes a sump pit to allow dewatering and maintenance of the tank.
- Emergency Power – A standby generator and automatic transfer switch will be provided to operate the treatment facility in event of power failure.

6. OPERATING PERMIT MODIFICATION

It is expected that the facility owner will include a new facility description in their next operating permit renewal application, for MSOP No. MO-0093220, to reflect the construction of the new wastewater treatment facility.

Emily T. Carpenter
Engineering Section
emily.carpenter@dnr.mo.gov

AP 22299
 CP0001806 C15344



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

RECEIVED

NOV 02 2015

Water Protection Program

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 2185
DATE RECEIVED 11/2/15	<i>EB</i>

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: _____
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: 10/14 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: 4/12
 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.)

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

American Resorts Wastewater Treatment Facility

2.2 PROJECT DESCRIPTION

Construction of a new wastewater treatment facility. Existing facility will be abandoned in place. Treatment to consist of bar screen, equalization basin, activated sludge, tablet chlorination, chlorine contact chamber and tablet de-chlorination.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

off site disposal

2.4 DESIGN INFORMATION

- A. Current population: 115; Design population: 115
- B. Actual Flow: 3,151 gpd; Design Average Flow: 7,800 gpd;
 Actual Peak Daily Flow: 12,374 gpd; Design Maximum Daily Flow: 12,374 gpd; Design Wet Weather Event: 12,000

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 American Resorts Subd. Wastewater Treat. Facility		TELEPHONE NUMBER WITH AREA CODE (816) 679-2043		E-MAIL ADDRESS kreed2938@gmail.com
ADDRESS (PHYSICAL) 15071 East 1810 Road	CITY Stockton	STATE MO	ZIP CODE 65785	COUNTY Cedar
Wastewater Treatment Facility: Mo- 0093220 (Outfall 1 Of 1)				
3.1 Legal Description: <u>NW ¼, NE ¼, NE ¼, Sec. 05, T 33 N, R 26 W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>429410</u> Northing (Y): <u>4165611</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Unnamed</u>				
4.0 PROJECT OWNER				
NAME Am. Resorts Cottage Owners Assoc. of Lake Stockton		TELEPHONE NUMBER WITH AREA CODE (816) 679-2043		E-MAIL ADDRESS kreed2938@gmail.com
ADDRESS 15071 East 1810 Road	CITY Stockton	STATE MO	ZIP CODE 65785	
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 Am. Resorts Cottage Owners Assoc. of Lake Stockton		TELEPHONE NUMBER WITH AREA CODE (816) 679-2043		E-MAIL ADDRESS kreed2938@gmail.com
ADDRESS 15071 East 1810 Road	CITY Stockton	STATE MO	ZIP CODE 65785	
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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> YES <input type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Stanley Schultz / Schultz Surveying & Engineering		TELEPHONE NUMBER WITH AREA CODE (417) 337-8820		E-MAIL ADDRESS sjschultz@sseeng.com
ADDRESS 800 Hwy. 248, Bldg. 4D	CITY Branson	STATE MO	ZIP CODE 65616	
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 Gary Lane			DATE 1.0/25/15	
TITLE OR CORPORATE POSITION President		TELEPHONE NUMBER WITH AREA CODE (816) 679-2043		E-MAIL ADDRESS kreed2938@gmail.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.				