

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0133892
Owner:	Chalets on Table Rock Lake LLC
Address:	4827 S. Landon Court, Springfield, MO 65810
Continuing Authority:	Chalets on Table Rock Lake LLC
Address:	4827 S. Landon Court, Springfield, MO 65810
Facility Name:	Table Rock Chalets WWTF
Facility Address:	112 Cove Lane Court, Lampe MO 65681
Legal Description:	NE¼, NW¼, Sec. 6, T21N, R23W, Stone County
UTM Coordinates:	X=458020 , Y=4046015
Receiving Stream:	Table Rock Lake (L2) 303 (d)
First Classified Stream and ID:	Table Rock Lake (L2) (7313) 303 (d)
USGS Basin & Sub-watershed No.:	(11010001-1203)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

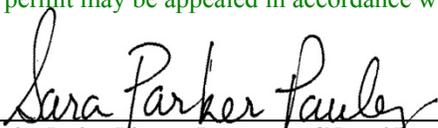
Outfall #001 – Subdivision / Sewerage Works - SIC #4952 / 4952

Septic Tank / Recirculating sand or pea gravel filter system / Chemical feed to facilitate phosphorus removal / Chlorination / Coagulation / Dechlorination / Sludge disposal by contract hauler.

Design organic population equivalent is 12.5.
Design average daily flow is 1,250 gallons per day.
Design sludge production is 0.0875 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

January 1, 2013
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

December 31, 2012
Expiration Date


John Madros, Director, Water Protection Program

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	GPD	*		*	once/week	24 hr. estimate
Biochemical Oxygen Demand ₅ **	mg/L		30	20	once/week	grab
Total Suspended Solids**	mg/L		30	20	once/week	grab
pH – Units	SU	***		***	once/week	grab
<i>E. coli</i> (Note 1)	#/100 ml	1030		206	once/week	grab
Total Residual Chlorine (Note 2)	mg/L	0.019 (130ML)		0.0095 (130ML)	once/week	grab
Total Phosphorus as P	mg/L			0.5	once/week	grab
Ammonia as N	mg/L	12.1		4.6	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE February 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** This facility is required to provide a 30-day average percent removal of at least 85%.
- *** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

Note 1 - Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean.

- (a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Disinfection is required during the recreational season from April 1 through October 31. Do not chlorinate during the non-recreational months.
- (c) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**
- (d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 µg/L” TRC.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.

C. SPECIAL CONDITIONS (continued)

6. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.
- (c)

Missouri Department of Natural Resources
Fact Sheet
Chalets on Table Rock Lake WWTF
NPDES #: MO-0133892
Stone County

A Statement of Basis (Statement) gives pertinent information regarding the applicable regulations and rationale for the development of the NPDES Missouri State Operating Permit (operating permit). This Statement does not include calculations for the effluent limits provided herein and in the operating permit, and does not discuss the public comment process. This Statement also does not pertain to operating permits that include sewage sludge land application plans and variance procedures.

A Statement is not an enforceable part of a Missouri State Operating Permit.

Rationale of Effluent Limitations & Permit Language Determination

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402I; CFR §122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- New facility.

ANTIDEGRADATION:

As per [10 CSR 20-7.031(2)(D)], the three (3) levels of protection provided by the antidegradation policy in subsections (A), (B), and (C) of this section shall be implemented according to procedures developed by the department. *Missouri Antidegradation Rule and Implementation Procedure*, when approved, shall be applicable to new or upgraded/expanded facilities only.

APPLICABLE PERMIT PARAMETERS:

Effluent parameters for conventional, non-conventional, and toxic pollutants have been obtained from the technology based effluent limits, water quality based limits, and from appropriate sections of the application.

BASIS FOR LIMITATIONS:

Effluent limits established in this Statement of Basis and Missouri State Operating Permit are derived from State or Federal Regulation, Water Quality Standards, Lagoon Policy, Ammonia Policy, Antidegradation Policy, Best Professional Judgement, TMDL or Permit in lieu of TMDL, or WET Test Policy.

COMPLIANCE AND ENFORCEMENT:

Action taken by the department to resolve violations of the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

Applicable ;

Not Applicable ;

The permittee/facility is not under enforcement action and is considered to be in compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR §403.3(q)].

Applicable ;

Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference. Permittee shall submit to the department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year.

Not Applicable ;

At this time, the permittee is not required to implement and enforce a Pretreatment Program.

RECEIVING STREAM INFORMATION:

10 CSR 20-7.031 Missouri Water Quality Standards, the department “defines the Clean Water Commission water quality objectives in terms of water uses to be maintained and the criteria to protect those uses.” The 1st receiving stream for this facility is Table Rock Lake, which is a class (L2) stream, and its Beneficial Water Uses* to be maintained are LWW, AQL, WBC, SCR.

- - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND).

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

SANITARY SEWER OVERFLOWS (SSOs), AND INFLOW & INFILTRATION (I&I):

Collection systems are a critical element in the successful performance of the wastewater treatment process. Under certain conditions, poorly designed, built, managed, operated, and/or maintained systems can pose risks to public health, the environment, or both. Causes of SSOs include, but are not limited to, the following: high levels of I&I during wet weather; blockages; structural, mechanical, or electrical failures; collapsed or broken sewer pipes; insufficient conveyance capacity; and vandalism. Effective and continuous management, operation, and maintenance, as well as ensuring adequate capacity and rehabilitation when necessary are critical to maintaining collection system capacity and performance while extending the life of the system.

Applicable ;

The permittee is required to develop or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance.

Not Applicable ;

This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ;

The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)].

Not Applicable ;

This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

A plan to schedule activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Applicable ;

A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

Not Applicable ;

At this time, the permittee is not required to develop and implement a SWPPP.

WHOLE EFFLUENT TOXICITY (WET) TEST:

As per [10 CSR 20-7.031(1)(CC)], a toxicity test conducted under specified laboratory conditions on specific indicator organism; and as per [40 CFR §122.2], the aggregate toxic effect of an effluent measured directly by a toxicity test.

Applicable ;

Effective July 15, 2005, upon revision, renewal, modification, or issuance, all Missouri State Operating Permits under the NPDES will incorporate use of the following guidelines for determining the applicability and requirements for WET testing. WET testing requirements are established by the WET Test Policy, 120 § 308 of the Federal Water Pollution Control Act, and 40 CFR § 136. Please check WET tests applicability for this facility:

- All major discharge facilities ;
- Facilities that are exceeding or routinely exceed their design flow ;
- Most municipals, domestic sewage dischargers ;
- Industrial dischargers or other dischargers that may alter their production processes throughout the year ;
- Facilities that may handle large quantities of toxic substances, or substances that are toxic in large amounts ; and
- Facilities that have been granted seasonal relief of numeric limitations .

Not Applicable ;

At this time, the permittee is not required to conduct WET test for this facility.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Applicable ;

Table Rock Lake is listed on the 2000 Missouri 303(d) List for Nutrients.

– This facility is not considered to be a source of the above listed pollutant(s) or considered to contributed to the impairment of (stream name).

– This facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s). 10 CSR 20-7.015 (3) (G) states that all new facilities shall not exceed 0.5 mg/L of phosphorus as a monthly average.

Not Applicable ;

This facility does not discharge to a 303(d) listed stream.

Outfall #001 – Main Facility Outfall

EFFLUENT LIMITATIONS TABLE

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED
FLOW	GPD	1	*		*	N/A
BOD ₅ **	MG/L	1		30	20	N/A
TSS **	MG/L	1		30	20	N/A
pH (S.U.)	SU	1	6-9		6-9	N/A
AMMONIA AS N	MG/L	3	12.1		4.6	N/A
ESCHERICHIA COLI	***	1		1030	206	N/A
CHLORINE, TOTAL RESIDUAL (MG/L)	MG/L	3	0.019		0.0095	N/A
TOTAL PHOSPHORUS AS P (MG/L)	MG/L	1			0.5	N/A
MONITORING FREQUENCY	N/A	1	WEEKLY		WEEKLY	N/A

* - Monitoring requirement only

** - % removal language (if needed).

*** - # of colonies/100mL; the Monthly Average for E. coli is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

N/A – Not applicable

N/C – No Change

Basis for Limitations Codes:

- | | |
|--|-----------------------------------|
| 1. State or Federal Regulation/Law | 6. Antidegradation Policy |
| 2. Water Quality Standard ² | 7. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 8. Best Professional Judgement |
| 4. Lagoon Policy | 9. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 10. WET test Policy |

² – Water Quality Standards also includes Reasonable Potential Analysis.

Sampling Frequency Justification:

This facility is a new facility that has been operating without a permit. A construction permit application for an upgrade has been received. Weekly sampling and monthly reporting is required until the permit is modified to include the proposed construction.

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

- Effluent limitations are protective and have been retained from previous state operating permit.
- 30 mg/L Weekly Average and 20 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015]

Total Suspended Solids (TSS).

- Effluent limitations are protective and have been retained from previous state operating permit.
- 30 mg/L Weekly Average and 20 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015]

pH.

- Effluent limitation has been retained from previous state operating permit,
- pH is to be maintained at or above 6.0 pH units. for Daily Maximum and Monthly Average, as per [10 CSR 20-7.015]. pH is measured in pH units and is not to be averaged.
- pH is limited to the range of 6.0 – 9.0 pH units, as per [10 CSR 20-7.015]. pH is measured in pH units and is not to be averaged.
- Other – please specify.

Ammonia as N: Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Mar 1 – May 31	16	7.8	2.8	12.1
Jun 1 – Aug 31	28	7.8	1.3	12.1
Sept 1 – Nov 30	16	7.8	2.8	12.1
Dec 1 – Feb 29	6	7.8	3.1	12.1

Spring: Mar 1 – May 31, Summer: Jun 1 – Aug 31, Fall: Sep 1 – Nov 30, Winter: Dec 1 – Feb 29

Summer – Zone of Initial Dilution is not allowed. Mixing Zone is allowed = 32.25 cfs

Acute

$$((Q_e + Q_s) * C - (Q_s * C_s)) / Q_e$$

$$((Q_e + 0) * 12.1 - 0 * 0.037) / Q_e = 12.1$$

$$LTA_a = 12.1 \text{ mg/L } (0.321) = 3.9 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile]

Chronic

$$((Q_e + Q_s) * 1.3 - Q_s * 0.037) / Q_e = 37.995$$

$$LTA_c = 37.995 \text{ mg/L } (0.780) = 39.07 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile, n = 30]

Acute is more protective

$$MDL = 3.9 \text{ mg/L } * 3.11 = 12.1 \text{ mg N/L}$$

[CV = 0.6, 99th Percentile]

$$AML = 3.9 \text{ mg/L } * 1.19 = 4.6 \text{ mg N/L}$$

[CV = 0.6, 95th Percentile, n = 30]

Because the chronic summer number is the smallest compared to fall, spring, and winter and the summer chronic was higher than the acute, the other seasons for chronic were not calculated because it would have shown that the acute value would be more protective.

Maximum Daily Limit (mg N/L)	Average Monthly Limit (mg N/L)
12.1	4.6

Escherichia coli (E. coli). Monthly average of 206 per 100 ml as a geometric mean and Weekly Average of 1030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). Weekly Average effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).

Total Residual Chlorine: Table A – warm body criteria. Chronic 0.01 mg/L, Acute 0.019 mg/L

$$((Q_e + Q_s) * C - (Q_s * C_s)) / Q_e$$

$$C_e = ((Q_e + 0) * 0.019 - (0 * 0)) / Q_e = 0.019$$
$$WLA_a = 0.019 \text{ mg/L}$$

$$LTA_a = 0.019 (0.321) = \mathbf{0.0061} \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 0.0061(3.114) = 0.019 \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$
$$AML = 0.0061(1.5524) = 0.0095 \text{ mg/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

Standard compliance language for TRC, including the minimum level (ML), should be included in the permit.

Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein or within the operating permit. The proposed determinations are tentative pending public comment.

Date of Statement: May 17, 2007

Kristen Pattinson
Permitting & Assistance Unit
(417) 891-4300
kristen.pattinson@dnr.mo.gov

Revised: December 5, 2012

Cindy LePage, P.E.
Engineering Section
(573) 751-6618
cindy.lepage@dnr.mo.gov