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-0132756
Owner:	Lake Area Wastewater Association, Inc.
Address:	2765 South Hwy 5, Camdenton, MO 65020
Continuing Authority:	Same as Above
Address:	Same as Above
Facility Name:	Sierra Bay Condominiums WWTF
Facility Address:	153 Blue Dolphin Drive, Camdenton MO 65020
Legal Description:	SE¼, SE¼, Sec. 5, T38N, R17W, Camden County
Lat/Long:	+380324 / -0924849
Receiving Stream:	Lake of the Ozarks (L2) 303 (d)
First Classified Stream and ID:	Lake of the Ozarks (L2) (07205) 303 (d)
USGS Basin & Sub-watershed No.:	(10290110-030009)

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 - Condominiums / Sewerage Works - SIC #8641 / 4952

Flow equalization / extended aeration / secondary clarification / chlorination / aerated sludge holding / sludge disposal by contract hauler

Design organic population equivalent is 192.4.
Design average daily flow is 14,430 gallons per day.
Design sludge production is 3.46 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 644.051.6 of the Law.

June 22, 2010
Effective Date

Mark N. Templeton, Director Department of Natural Resources

June 21, 2015
Expiration Date

Cynthia S. Davies, Regional Director, Southwest Regional Office

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until **May 31, 2013**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	GPD	*		*	once/quarter**	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/quarter**	****
Total Suspended Solids	mg/L		30	20	once/quarter**	****
pH – Units	SU	***		***	once/quarter**	grab
Fecal Coliform (Note 1)	#/100 ml	1000		400 (Note 2)	once/quarter**	grab
Total Residual Chlorine as Cl_2	mg/L	1.0 (**Note 3**)		1.0 (**Note 3**)	once/quarter**	grab
Total Phosphorus as P	mg/L	*		*	once/quarter**	****
Total Nitrogen	mg/L	*		*	once/quarter**	****
Ammonia as N	mg/L	*		*	once/quarter**	grab
Temperature	°C	*		*	once/quarter**	grab

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Dissolved Oxygen	mg/L	*		*	once/quarter**	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE **October 28, 2010**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

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 **June 1 2013** 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
Outfall #001						
Flow	GPD	*		*	once/quarter**	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/quarter**	****
Total Suspended Solids	mg/L		30	20	once/quarter**	****
pH – Units	SU	***		***	once/quarter**	grab
Fecal Coliform (Note 1)	#/100 ml	1000		400 (Note 2)	once/quarter**	grab
Total Residual Chlorine as Cl_2	mg/L	0.019 (**Note 3**) (0.13 ML)		0.0095 (**Note 3**) (0.13 ML)	once/quarter**	grab
Total Phosphorus as P	mg/L	*		*	once/quarter**	****
Total Nitrogen	mg/L	*		*	once/quarter**	****
Ammonia as N	mg/L	12.1		4.6	once/quarter**	grab
Temperature	°C	*		*	once/quarter**	grab

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Dissolved Oxygen	mg/L	*		*	once/quarter**	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 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.

** **Sampling shall occur once per quarter in the periods of January through March, April through June, July through September, and October through December, please note that monitoring reports shall be submitted no later than the 28th day of the month following the monitoring period (April 28th, July 28th, October 28th, and January 28th, respectively).**

*** pH is measured in pH units and is not to be averaged. The pH for all facilities except lagoons is limited to the range of 6.0-9.0 pH units.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

**** A composite sample made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample. A person may physically collect the four grab samples or a composite sampler may be set up to collect the four grab samples.

Note 1 - Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31.

Note 2 - Monthly average limit for Fecal Coliform is expressed as a geometric mean. Geometric mean for n samples = $[a_1 \times a_2 \times a_3 \ldots . \times a_n]^{1/n}$

Note 3 - This permit contains a Total Residual Chlorine (TRC) limit.

(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 0.13 mg/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 0.13 mg/L will be considered violations of the permit and values less than the minimum quantification level of 0.13 mg/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 year-round unless the permit specifically states that "Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31." If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.

(c) Do not chemically dechlorinate **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 mg/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 a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.

C. SPECIAL CONDITIONS (continued)

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.

(b) 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.

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.

D. SCHEDULE OF COMPLIANCE

For Total Residual Chlorine

1. By **June 22, 2011** submit a completed application construction permit, application fee, and one copy each of an engineering report, plans and specifications prepared by a professional engineer registered in the State of Missouri to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807, for providing wastewater treatment dechlorination improvements to comply with the final effluent limitations as listed in Part A of this permit, designed in accordance with Missouri Clean Water Law Regulation 10 CSR 20 Chapter 8.

   Please note that you may be able to meet the Ammonia final effluent limits without a construction permit. If the final effluent limits can be achieved without a construction permit please submit in writing by **June 22, 2011** how you are planning to meet the new effluent limits.

2. Within fifteen (15) calendar days of receipt of any request for additional information or changes in the engineering report, plans or specifications, respond and if necessary submit engineering modifications to the department.

3. Within 365 calendar days of issuance of the construction permit, construct the permitted wastewater treatment dechlorination improvements.

4. Within fifteen (15) calendar days of completion of construction of wastewater treatment dechlorination improvements, submit a Statement of Work Completed form, signed, sealed, and dated by a professional engineer registered in the State of Missouri certifying that the project has been completed substantially in accordance with the approved plans and specifications. In addition to the Statement of Work Completed, submit an application for a Missouri State Operating Permit modification complete with the appropriate modification fee to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807.

5. Annual progress reports shall be submitted on January 28th of each year until the construction completed. The report shall include what step of the process the facility is at, how much construction has been completed, approximately time of completion, etc. The first report is due **January 28, 2011.**

If you have questions you may contact the Missouri Department of Natural Resources, Southwest Regional Office by calling 417-891-4300 or by mail at 2040 West Woodland, Springfield, Missouri, 65807.

Missouri Department of Natural Resources
Statement of Basis
Sierra Bay Condominiums WWTF
MSOP #: MO-0132756
Camden County

A Statement of Basis (Statement) gives pertinent information regarding the applicable regulations and rational for the development of the NPDES Missouri State Operating Permit (operating permit). This Statement includes Wasteload Allocations, Water Quality Based Effluent Limitations, and Reasonable Potential Analysis calculations as well as any other calculations that effect the effluent limitations of this operating permit. This Statement does not pertain to operating permits that include sewage sludge land application plans and variance procedures, and does not include the public comment process for this operating permit.

A Statement is not an enforceable part of an operating permit.

Part I – Facility Information

Facility Type: (NON-POTW)
Facility SIC Code(s): 4952

Facility Description: Flow equalization / extended aeration / secondary clarification / chlorination / aerated sludge holding / sludge disposal by contract hauler

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.02	Secondary	Domestic	Direct discharge

Receiving Water Body's Water Quality & Facility Performance History:
None-new facility

This is for a new permit.

Comments: The facility was issued a construction permit (SWRO 1508) on July 27, 2006. The facility was constructed sometime after that but never submitted a Statement of Work Complete. There are new Water Quality Standards for Total Residual Chlorine and Ammonia as N. The Department has included a Schedule of Compliance to meet these new standards.

During the public notice period the developer filed for bankruptcy and the bank to ownership of the facility soon after. The bank then transferred the ownership of the WWTF to Lake Area Wastewater Association, Inc

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Not Applicable ☒; This facility is not required to have a certified operator.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category list effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☐
Lake or Reservoir [10 CSR 20-7.015(3)]: ☒
Losing [10 CSR 20-7.015(4)]: ☐
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☐

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 receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Lake of the Ozarks	L2	07205	General Criteria, LWW, AQL, SCR, WBC-A	10290110	Ozark / Osage

* - 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).
** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Lake of the Ozarks	289	423	444

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(a)]		
1Q10	7Q10	30Q10
72.25	105.75	111

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ☒;
The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☒ - New facility.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(8)(A)10.], when a Continuing Authority under paragraph 10 CSR 20-6.010(3)(B)1. or 2. is expected to be available for connection within the next five (5) years, any operating permit issued to a permittee under this paragraph, located within the service area of the paragraph (3)(B)1. or 2. facility, shall contain the following special condition… This language is contained in Special Condition #3 of this operating permit.

ANTIDEGRADATION:
Policies which ensure protection of water quality for a particular water body where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as outstanding natural resource waters. Antidegradation requirements are consistent with 40 CFR 131.12 that outlines methods used to assess activities that may impact the integrity of a water and protect existing uses. This policy may compel the state to maintain a level of water quality above those mandated by criteria.

Not Applicable ☒;
This facility was constructed prior to August 31, 2008.

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.

Bio-solids, Sludge, & Sewage Sludge:
Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Not Applicable ☒
This condition is not applicable to the permittee for this specific facility.

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.

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 Part 403.3(q)].

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

REASONABLE POTENTIAL ANALYSIS (RPA):
Limitations must control all pollutants or pollutant parameters that are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above the Missouri Water Quality Standards.

Not Applicable ☒;
A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs). Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

Not Applicable ☒;
This wastewater treatment facility is not a POTW. Influent monitoring is not being required to determine percent removal.

SANITARY SEWER OVERFLOWS (SSOS), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:
Sanitary Sewer Systems (SSSs) are municipal wastewater collection system that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSOs is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

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 where established in accordance with [10 CSR 20-7.031(10)].

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* [EPA 832-R-92-006] (Storm Water Management), BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined to total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ☒;
Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow
C_e = effluent concentration
Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

WLA MODELING:

Not Applicable ☒;
A WLA study was either not submitted or determined not applicable by department staff.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

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 ☒;
Lake of the Ozarks is listed on the 2004 / 2006 Missouri 303(d) List for fish trauma.

☒ – This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of Lake of the Ozarks.

Adjusted Design Flow:
10 CSR 20-6.011(1)(B)1. provides for an Adjusted Design Flow when calculating permit fees on human sewage treatment facilities. If the average flow is sixty percent (60%) or less than the system's design flow, the average flow may be substituted for the design flow when calculating the permit fee on human sewage treatment facilities. If the facility's actual average flow is consistently 60% or less than the permitted design flow, the facility may qualify for a reduction in your fee when:

- The facility has a valid permit, or has applied for re-issuance, is in compliance with the terms, conditions and effluent limitations of the permit, and the facility has a good compliance history; and

- Flow is not expected to exceed 60% of design flow for the remaining term of the existing operating permit.

Not Applicable ☒;
At this time, the permittee has not requested an Adjusted Design Flow modification.

Outfall #001 – Main Facility Outfall
EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD_5	MG/L	1		30	20	YES	S
TSS	MG/L	1		30	20	YES	S
pH (S.U.)	SU	1	6.0-9.0		6.0-9.0	NO	S
AMMONIA AS N	MG/L	5	12.1		4.6	NO	NONE
FECAL COLIFORM	***	1	1000		400	NO	S
CHLORINE, TOTAL RESIDUAL	MG/L	3	0.019		0.0095	YES	1.0, 1.0
TEMPERATURE	°C	11	*		*	NO	NONE
DISSOLVED OXYGEN	MG/L	1	*		*	NO	NONE
TOTAL PHOSPHORUS	MG/L	8	*		*	NO	NONE
TOTAL NITROGEN	MG/L	8	*		*	NO	NONE
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

<u>* - Monitoring requirement only</u>
*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.
**** - Parameter not previously established in previous state operating permit.
N/A – Not applicable
S – Same as previous operating permit

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Antidegradation Policy
7. Water Quality Model
8. Best Professional Judgment
9. TMDL or Permit in lieu of TMDL
10. WET test Policy
11. Dissolved Oxygen Policy

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

<u>Flow</u>. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

<u>Biochemical Oxygen Demand (BOD_5)</u>.
☒ – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **<u>Receiving Stream Information.</u>**

<u>Total Suspended Solids (TSS)</u>.
☒ – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **<u>Receiving Stream Information.</u>**

<u>pH.</u>
☒ – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **<u>Receiving Stream Information.</u>**

Temperature. Monitoring requirement due to the toxicity of Ammonia varies by temperature.

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 (^oC)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Oct. 1 – March 31	6	7.8	3.1	12.1
April 1 – Sept. 30	27	7.8	1.4	12.1

Winter: Oct 1 – March 31, Summer: April 1 – Sept. 30

Summer – Zone of Initial Dilution is not allowed. Mixing Zone is allowed = 111 cfs
Acute
((Qe + Qs)*C-(Qs*Cs))/Qe
((0.02 +0)*12.1 –(0*0.01))/0.02 = 12.1
LTA_a = 12.1 mg/L (0.321) = 3.9 mg N/L [CV = 0.6, 99th Percentile]

Chronic
((0.02 +111)*1.4 –(111*0.01))/0.02 = 8626.254
LTA_c = 8626.254 mg/L (0.780) = 6728.48 mg N/L [CV = 0.6, 99th Percentile, 30 day average]

Acute is more protective

MDL = 3.9 mg/L * 3.11 = 12.1 mg N/L [CV = 0.6, 99th Percentile]
AML = 3.9 mg/L * 1.19 = 4.6 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

Fecal Coliform. Discharge shall not contain more than a monthly geometric mean of 400 colonies/100 mL and a daily maximum of 1000 colonies/100 mL, [10 CSR 20-7.015.].
Future renewals / construction modifications of the facility operating permit will contain effluent limitations for E. coli, which will replace fecal coliform as the applicable bacteria criteria in Missouri's water quality standards

Total Residual Chlorine (TRC). Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L. Due the fact the flows through the lakes are large, Acute criteria will be used only.

((Qe + Qs)*C-(Qs*Cs))/Qe

Acute: C_e = ((0.02+0)*0.019-(0*0)) / 0.02 = 0.019
WLA_a = 0.019 mg/L

LTA_a = 0.019 (0.321)= 0.0061 mg/L [CV = 0.6, 99th Percentile]

MDL = 0.0061(3.114)= 0.019 mg/L [CV = 0.6, 99th Percentile]
AML = 0.0061(1.55)= 0.0095 mg/L [CV = 0.6, 95th Percentile, n = 4]

Total Phosphorus. New nutrient criteria will be coming out in the near future for Lakes. Monitoring only to gather information about facilities and to determine the impacts if any to the lake for this parameter.

Total Nitrogen. New nutrient criteria will be coming out in the near future for Lakes. Monitoring only to gather information about facilities and to determine the impacts if any to the lake for this parameter.

Dissolved Oxygen. Monitoring requirement only. Monitoring for dissolved oxygen are included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	QUARTERLY	ONCE/QUARTER
BOD_5	QUARTERLY	ONCE/QUARTER
TSS	QUARTERLY	ONCE/QUARTER
pH	QUARTERLY	ONCE/QUARTER
TEMPERATURE	QUARTERLY	ONCE/QUARTER
AMMONIA AS N	QUARTERLY	ONCE/QUARTER
FECAL COLIFORM	QUARTERLY	ONCE/QUARTER
TOTAL RESIDUAL CHLORINE	QUARTERLY	ONCE/QUARTER
DISSOLVED OXYGEN	QUARTERLY	ONCE/QUARTER
TOTAL NITROGEN	QUARTERLY	ONCE/QUARTER
TOTAL PHOSPHORUS	QUARTERLY	ONCE/QUARTER

Sampling Frequency Justification:
At least ten (10) samples are needed to determine Reasonable Potential for ammonia, dissolved oxygen, and total nitrate limits, therefore, quarterly sampling is appropriate

Sampling Type Justification
As per 10 CSR 20-7.015samples collected for mechanical plants shall be 24 hour composites.

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 and within the operating permit. The proposed determinations are tentative pending public comment.

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