

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-0030287

Owner: US Army Corps of Engineers (USACE)
Address: 16435 E. Stockton Lake Dr., Stockton, MO 65785

Continuing Authority: Same as above
Address: Same as above

Facility Name: USACE, Orleans Trail Park WWTF
Facility Address: 16435 E. Stockton Lake Dr., Stockton MO 65785

Legal Description: NE¼, SW¼, Sec. 21, T34N, R26W, Cedar County
UTM Coordinates: X= 430549, Y= 4169370

Receiving Stream: Stockton Lake (L2)
First Classified Stream and ID: Stockton Lake (L2) (07235)
USGS Basin & Sub-watershed No.: (10290106-0703)

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 – POTW – Federal Park / Sewerage Works- SIC #7996 / 4952
The use or operation of this facility does not require a Certified Operator.
Recirculating Gravel Filter / Biological Nutrient Removal System / Ultraviolet Disinfection.
Design population equivalent is 92.
Design flow is 7,500 gallons per day.
Actual flow is 381 gallons per day.
Design sludge production is 1.0 dry ton/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.

December 2, 2011 July 1, 2014
Effective Date Revised

Sara Parker Pauley, Director, Department of Natural Resources

December 1, 2016
Expiration Date

John Madras, Director, Water Protection Program

OUTFALL #001	TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 2 of 4	
					PERMIT NUMBER MO-0030287	
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 on issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		15	10	once/month	composite**
Total Suspended Solids	mg/L		20	15	once/month	composite**
<i>E. coli</i> (Note 1)	#/100 ml		630	126	once/month	grab
pH – Units	SU	***		***	once/month	grab
Ammonia as N	mg/L	12.1		4.6	once/month	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE NEXT REPORT IS DUE <u>AUGUST 28, 2014</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

- * Monitoring requirement only.
- ** 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.
- *** 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. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated November 1, 2013, May 1, 2013, and March 1, 2014, and hereby incorporated as though fully set forth herein.

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.
4. Water Quality Standards
 - (a) To the extent required by law, 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.

5. 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 by the Director in accordance with 40 CFR 122.44(f).
- (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.

D. SPECIAL CONDITIONS (continued)

6. Report as no-discharge when a discharge does not occur during the report period.
7. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
8. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southwest Regional Office.
9. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
10. A least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.
11. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.
12. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.
13. An all-weather access road shall be provided to the treatment facility.
14. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF MODIFICATION
OF
MO-0030287
USACE, ORLEANS TRAIL PARK WWTF

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

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

This Factsheet is for a Minor .

Part I – Facility Information

Facility Type: POTW - Federal Park / Sewerage Works- SIC #7996 / 4952

Facility Description:

Recirculating Gravel Filter / Biological Nutrient Removal System / Ultraviolet Disinfection

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- Yes; The owner is replacing the existing extended aeration treatment system with a new recirculating gravel filter and biological nutrient removal system with ultraviolet disinfection. The design flow will be expanded from 5,000 GPD to 7,500 GPD.

Application Date: 12/31/2012

Expiration Date: 12/01/2016

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.012	Secondary	Domestic

Facility Performance History:

A review of discharge monitoring report data for the last five years indicated the following exceedances: BOD₅ – once in 2009, total residual chlorine – once in 2009, fecal coliform – twice in 2009 and once in 2010, TSS – once in 2009, once in 2011, and twice in 2012, as well as several DMR non-receipts. The last DMR record review on 12/18/2012 indicated that the facility was not in compliance due to not meeting effluent limits.

Comments:

The owner applied for a construction permit on 12/31/2012 to build a new treatment system to accommodate the bathroom and public restroom facility and 60 camp sites. The existing extended aeration system is not able to meet effluent limits, as indicated by the facility performance history described above. Please see **APPENDIX B: ANTIDegradation Review** for a more detailed description and diagram of the proposed biological nutrient removal system.

Part II – Operator Certification Requirements

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

Part III– Operational Monitoring

As per [10 CSR 20-9.010(4)], the facility is not required to conduct operational monitoring.

Part IV – 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 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: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Stockton Lake	L2	7235	AQL, DWS, LWW, WBC(A)	10290106-0703	0

* - 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), Groundwater (GRW).

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Stockton Lake (L2)	-	-	-

MIXING CONSIDERATIONS

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

Mixing Zone:

Mixing Zone (MZ) Parameters: According to the USGS 1:24,000K Quadrangle, the mainstem lake width near the *assumed* new facility outfall location is approximately 160 feet (ft.). Using "normal" water levels of 160 ft. wide and one-quarter of this width equals 40 ft. Therefore, because 40 feet is less than 100 ft., MZ = 40 feet [10 CSR 20-7.031(4)(A)5.B.(IV)(a)].

Mixing Zone Volume: The flow volume approximates a triangular prism because of the slope of the lake bottom, where the formula is Volume = L*W*(D*0.5). Assuming that the width will be either side of the discharge (MZ) length (40 feet) to form the plume effect, the box dimensions are length (L) = 40 ft., width (W) = 40 ft., and depth (D) = 6 ft. Depth was obtained using mixing zone length projected 40 ft.

$$\text{Volume} = L * W * (D * 0.5) = (40') * (40') * (6') * (0.5) = 4,800 \text{ ft}^3$$

The flow volume of 4,800 ft³ is assumed as the daily mixing zone. Therefore;
 (4,800 ft³/day)*(1 day/86,400 sec) = **0.056 ft³/sec.**

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Receiving Water Body's Water Quality

Stockton Lake was listed on the 2010 303(d) list as impaired for chlorophyll a and nitrogen. After the EPA's disapproval of Missouri's submitted general lake nutrient criteria on August 16, 2011, the EPA has approved the delisting of Stockton Lake for chlorophyll a and nitrogen on the 2012 303(d) report.

Part V – 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.

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDegradation:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- New and/or expanded discharge, please see **APPENDIX B: ANTIDegradation REVIEW.**

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). 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. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Permittee is not authorized to land apply biosolids.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ; The permittee/facility is not currently under Water Protection Program enforcement action.

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)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ; The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

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 (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Applicable ; Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

- 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.

Not Applicable ; This permit does not contain a SOC.

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 *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], 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.

VARIANCE:

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ; This operating permit is not drafted under premises of a petition for variance.

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 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:

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

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = 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).

Number of Samples “n”:

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of “n” for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for “n” must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is “n = 4” at a minimum. For Total Ammonia as Nitrogen, “n = 30” is used.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

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.

Applicable ; Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

Not Applicable ; At this time, the permittee is not required to conduct WET test for this facility

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

Not Applicable ; This facility does not anticipate bypassing.

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

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

Part VI –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Typical effluent limits for ammonia for a facility in a location such as this, under current regulations, with lake mixing criteria, would be 12.1 mg/L daily maximum, 4.6 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this, with lake mixing criteria, will be 8.1 mg/L daily maximum, 3.1 mg/L monthly average.

Actual effluent limits will depend in part on the actual performance of the facility.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of

compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VII – Effluent Limits Determination

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 lists 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)]:
- Lossing [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)]:

OUTFALL #001 – MAIN FACILITY OUTFALL

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	MGD	1	*		*	N	
BOD ₅	mg/L	1, 6		15	10	Y	30/20
TSS	mg/L	1, 6		20	15	Y	30/20
pH	SU	1	6.5– 9.0		6.5 – 9.0	N	
Ammonia as N	mg/L	2, 3, 5	12.1		4.6	N	
Dissolved Oxygen (DO)**	mg/L	3, 9	*		*	N	
Escherichia coli	***	1, 3		630	126	N	

* - Monitoring requirement only.

** - For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

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

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 Review
- 7. Antidegradation Policy
- 8. Water Quality Model
- 9. Best Professional Judgment
- 10. TMDL or Permit in lieu of TMDL
- 11. WET Test Policy

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

See APPENDIX B: ANTIDegradation REVIEW.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow	once/month	once/month
BOD ₅	once/month	once/month
TSS	once/month	once/month
pH	once/month	once/month
Ammonia as N	once/month	once/month
<i>E. coli</i>	once/month	once/month
Dissolved Oxygen	once/month	once/month

Sampling Frequency Justification:

This facility is a new facility; monthly sampling is required to determine if the facility will be in compliance with the operating permit in accordance with Appendix U of Missouri's Water Pollution Control Permit Manual. The Clean Water Commission has directed the Department to proceed with amending 10 CSR 20-7.015 to reduce the sampling frequency required for *E. coli* to a lesser frequency, still protective of water quality standards, for smaller facilities, including those with discharges of 100,000 gallons per day or less.

Sampling Type Justification

As per 10 CSR 20-7.015, BOD₅, TSS, and WET test samples collected for mechanical plants shall be a 24 hour modified composite sample. Due to the small size of this facility this composite sample shall be 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. Grab samples, however, must be collected for pH, Ammonia as N, Dissolved Oxygen, and *E. coli*. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia, and the fact that pH and DO cannot be preserved and must be sampled in the field. As Ammonia samples must be immediately preserved with acid, these samples are to be collected as a grab.

Part VII – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Applicable; The Department is required to determine findings of affordability because the permit applies to a **combined or separate sanitary sewer system for a publically-owned treatment works**.

Finding of affordability - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **APPENDIX A: AFFORDABILITY ANALYSIS**.

Part VIII – 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.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from April 19, 2013 to May 20, 2013. No responses received.

DATE OF FACT SHEET: MARCH 15, 2013

COMPLETED BY:

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Appendices

APPENDIX A: AFFORDABILITY ANALYSIS:

Missouri Department of Natural Resources Water Protection Program Affordability Determination and Finding

(In accordance with RSMo 644.145)

MO-0030287

USACE, Orleans Trail Park WWTF Missouri State Operating Permit (MSOP) Modification

Section 644.145 RSMo requires DNR to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system or publicly-owned treatment works.”

Description:

The wastewater treatment facility serving The Orleans Trail Park Campground B Recreational Area currently consists of an extended aeration treatment system with chlorine disinfection. The existing system is not able to meet existing permitted effluent limits and has experienced considerable deterioration. The USACE is proposing to build a new treatment system that will accommodate the bathhouse and public restroom facility and 60 camp sites. The design flow will be expanded from 5,000 GPD to 7,500 GPD with a design population equivalent of 92.

New Permit Requirements or Requirements Now Being Enforced:

This is a modification of an operating permit that contains more protective requirements for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS); however the Federal government has allotted funds for operation, maintenance, repair and potential replacement of infrastructure including wastewater treatment facilities. Federal agencies accomplish capital improvements through an appropriation process that does not affect individuals or their communities. Due to the USACE having already acquired funding for purposes such as necessary improvements to wastewater treatment facilities, this new condition has been determined to cause a low cost burden on the USACE. The facility is upgrading because it is having trouble meeting existing effluent limits. Because the new conditions are technology-based effluent limits based on the USACE's preferred new treatment option, they should not incur additional costs beyond what is already being spent to replace the existing treatment system.

Range of Anticipated Costs Associated with Complying with Requirements:

This is a modification of an operating permit with new or expanded conditions. It is anticipated that by building the proposed new treatment system, the permittee should incur additional costs above the existing normal operating costs for this facility.

(1) A community's financial capability and ability to raise or secure necessary funding;

This is a modification of an operating permit with new or expanded conditions; therefore, there are new anticipated costs for the permittee to comply with this permit. Further, professional services for Federal agencies are required to be obtained by an appropriation process through the Civil Works Program¹. This budgetary process does not depend on a community's financial capability to secure funding; rather existing Capital Improvement project funds delegated to the Agency are reallocated. Therefore, as a Federal Agency, the procurement process does not require changes to rate structures, and no communities incur additional financial burden.

(2) *Affordability of pollution control options for the individuals or households of the community;*

This is a modification of an operating permit with new or expanded conditions; therefore, there are new anticipated costs for the permittee to comply with this permit. Federal agencies accomplish capital improvements through an appropriation process that does not affect individuals or their communities.

(3) *An evaluation of the overall costs and environmental benefits of the control technologies;*

This is a modification of an operating permit with new or expanded conditions. The permittee is proposing to construct a new treatment system which will expand on the existing overall costs and environmental benefits of compliance with permit conditions.

(4) *An assessment of other community investments relating to environmental improvements;*

This operating permit modification requires new or expanded conditions; therefore new financial burdens are anticipated. Federal Agencies accomplish capital improvements through an appropriation process that does not affect individuals or their communities.

(5) *An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards; and,*

This operating permit modification requires new or expanded conditions; therefore new financial burdens are anticipated. Federal agencies accomplish capital improvements through an appropriation process that does not affect individuals or their communities.

(6) *An assessment of any other relevant local community economic condition.*

This operating permit modification contains new conditions; therefore new financial burdens are anticipated. Federal agencies accomplish capital improvements through an appropriation process that does not affect individuals or their communities.

Conclusion and Finding

As a result of reviewing the above affordability criteria, the Department hereby finds that the action described above will result in a low cost burden for the USACE but no burden with regard to the community's or Federal agency's overall financial capability. This operating permit modification contains new permit conditions; therefore, new anticipated costs are expected to be incurred to comply with the permit. However, Federal agencies accomplish capital improvements through an appropriation process that does not affect individuals or their communities.

¹Civil Works Budget and Appropriations Process-

http://www2.mvr.usace.army.mil/projects/dsp_factsheet.cfm?ProjID=703C7BB7-1143-30FB-26D03D86A64FC719

Water Quality and Antidegradation Review

*For the Protection of Water Quality and Determination of Effluent Limits
for Discharge to Stockton Lake*

by

USACE, Orleans Trail Park WWTF



February 2013

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1. FACILITY INFORMATION

FACILITY NAME: USACE, Orleans Trail Park WWTF NPDES #: MO-0030287

FACILITY TYPE/DESCRIPTION: The wastewater treatment facility serving The Orleans Trail Park Campground B Recreational Area currently consists of an extended aeration treatment system with chlorine disinfection. The existing system is not able to meet effluent limits and has experienced considerable deterioration. The campground plans to build a new treatment system that will accommodate the bathhouse and public restroom facility and 60 camp sites. As a result of the submitted alternative analysis, the applicant's preferred alternative is a recirculating gravel filter system with ultraviolet disinfection. The design flow will be expanded from 5,000 GPD to 7,500 GPD with a design population equivalent of 92.

COUNTY: Cedar UTM COORDINATES: X= 430549 / Y= 4169370
12- DIGIT HUC: 10290106-0703 LEGAL DESCRIPTION: NE ¼, SW ¼, Section 21, T34N, R26W
EDU*: Ozark/Osage COREGION: Ozark Highlands
* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, a facility is required to use *Missouri's Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

A review of discharge monitoring report data for the last five years indicated the following exceedances: BOD₅ – once in 2009, total residual chlorine – once in 2009, fecal coliform – twice in 2009 and once in 2010, TSS – once in 2009 and once in 2011, as well as several DMR non-receipts.

Stockton Lake was listed on the 2010 303(d) list as impaired for chlorophyll a and nitrogen. After the EPA's disapproval of Missouri's submitted general lake nutrient criteria on August 16, 2011, the EPA has approved the delisting of Stockton Lake for chlorophyll a and nitrogen on the 2012 303(d) report.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.012	Secondary	Stockton Lake	0

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Stockton Lake	L2	7235	-	-	-	AQL, DWS, LWW, WBC(A), General Criteria

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

RECEIVING WATER BODY SEGMENT #1: Stockton Lake

Upper end segment* UTM coordinates: X= 430549 / Y= 4169370 (Outfall)

Lower end segment* UTM coordinates: X= 431608 / Y= 4169029 (cove confluence with Stockton Lake)

*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. GENERAL COMMENTS

Sherman Engineering Services, LLC prepared, on behalf of the U.S. Army Corps of Engineers, the *Engineering Report including Antidegradation Review, Information, Design Criteria, and Cost Estimates*

for the US Army Corps of Engineers Orleans Trail Park – Campground B Wastewater Treatment Facility dated December 7, 2012. Geohydrological Evaluation was submitted with the request and the receiving waterbody is gaining for discharge purposes (Appendix A: Map). Applicant elected to assume that all pollutants of concern (POC) are significantly degrading the receiving stream in the absence of existing water quality. An alternatives analysis was conducted to fulfill the requirements of the AIP. Dissolved oxygen modeling was not completed because the Streeter-Phelps dissolved oxygen model cannot simulate the impacts of dissolved oxygen to the lake segment. Information that was provided by the applicant in the submitted report and summary forms in Appendix C was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and no federally-listed threatened or endangered species or critical habitats are known to occur on or near the project site. State endangered species, other species, or natural communities of conservation concern are known to occur in the project area. The applicant will be contacting the Missouri Department of Conservation for further consultation, however because the new treatment plant will be located in the same general area as the existing treatment plant, no problems are anticipated.

5. ANTIDegradation REVIEW INFORMATION

The following is a review of the *Engineering Report* dated December 7, 2012.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix C: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants “proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge.” (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix C).

TABLE 1. POLLUTANTS OF CONCERN AND TIER DETERMINATION

POLLUTANTS OF CONCERN	TIER*	DEGRADATION	COMMENT
BOD ₅ /DO	2	Significant	
Total Suspended Solids (TSS)	**	Significant	
Ammonia	2	Significant	
pH	***	Significant	Permit limits applied
<i>Escherichia coli</i> (<i>E. coli</i>)	2	Significant	

* Tier assumed. Tier determination not possible: ** No in-stream standards for these parameters. *** Standards for these parameters are ranges

The following Antidegradation Review Summary attachments in Appendix C were used by the applicant:

- Tier Determination and Effluent Summary
- For pollutants of concern, the attachments are:
- Attachment A, Tier 2 with significant degradation.

5.2. EXISTING WATER QUALITY

No existing water quality data was submitted. All POCs were considered to be Tier 2 and significantly degraded in the absence of existing water quality.

5.3. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Five alternatives from non-degrading to less degrading to degrading were evaluated.

Alternative one, and the applicant's preferred alternative, is a recirculating gravel filter. The applicant states in the Engineering Report that the recirculating filter has a historical proven record of reliability and affordability for the planned design flow, and recovers better with hydraulic and organic shock loading.

Alternative two was an AdvanTex treatment system which would include a primary septic tank for anaerobic digestion and sedimentation followed by filtration through the textile filter media. The septic tankage required is approximately twice as much as for the recirculating gravel filter system. Operation and maintenance costs are similar to the recirculating gravel filter. The applicant states that this system handles surges of inflow very well. This alternative was considered not economically efficient.

Alternative three was an extended aeration treatment system which would be built on-site. Operation and maintenance costs are considerably higher than for the recirculating gravel filter, and construction scheduling will take approximately twice as long as other systems. The applicant states that this system is historically very reliable and effective, but that operation is complex as compared to the recirculating gravel filter. This alternative was considered not economically efficient.

The amount of land necessary for land application is approximately 4.2 acres. The cost for a no discharge land application system was calculated and this alternative was determined to be not economically efficient (see Table 2).

Alternative five was connection to a regional treatment plant. The nearest facility that could handle the waste from this facility would be the Stockton WWTF (MO-0055280). Access to the sewer would require installation of approximately three miles of sewer collection system. The topography and presence of the lake make this alternative more difficult to accomplish. This alternative was considered to be not economically efficient.

This analysis showed that the return on environmental benefits with increasing cost of treatment did not justify more expenditure beyond the base case treatment alternative (see Appendix C, Attachment A). The applicant stated that present worth costs were not calculated because the preferred alternative had not only the lowest capital cost, but also the lowest operation and maintenance cost. Therefore, the present worth analysis would also show it as being the only economically efficient alternative. The recirculating gravel filter was the preferred alternative based on this analysis.

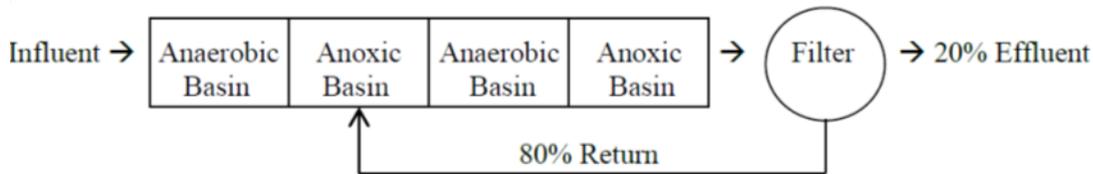
TABLE 2: ALTERNATIVES ANALYSIS COMPARISON

	Alternative 1: Recirculating Gravel Filter	Alternative 2: AdvanTex	Alternative 3: Extended Aeration	Alternative 4: Land Application	Alternative 5: Connect to Regional
BOD	10	10	10	-	-
TSS	15	15	15	-	-
Ammonia (s/w)	3	3	3	-	-
Practical	Y	Y	Y	Y	Y
Economical	Y	N	N	N	N
Capital Cost	\$313,260	\$386,160	\$470,660	\$454,980	\$718,200
Ratio	1:1 (Base Case)	1:1.23	1:1.50	1:1.45	1:2.29

The applicant will also be installing a biological phosphorus removal system ahead of their preferred treatment alternative, the recirculating gravel filter. The system will consist of two anaerobic basins and two anoxic basins configured as shown in Figure 1 below. The 80% return of filtered wastewater will allow for additional BOD control and equalization. The system will also be able to accommodate chemical phosphorus removal, should phosphorus be a problem in the future, with the capability of chemical dosing and mixing in the second septic tank chamber (the first anoxic basin). As noted in Section 11.

ANTIDegradation REVIEW PRELIMINARY DETERMINATION, the Department is not currently requiring nutrient limitations for this facility, and this antidegradation review does not include a specific approval of the nutrient removal system for meeting future nutrient effluent limits. This review also does not provide an evaluation or approval of the chemical dosing and mixing system which may be pursued in the future.

FIGURE 1: BIOLOGICAL PHOSPHORUS REMOVAL SYSTEM.



5.3.1. REGIONALIZATION ALTERNATIVE

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional waste water collection system is mentioned. The applicant provided discussion of this alternative. The nearest regional facility is Stockton WWTF (MO-0055280) and the proposed facility is not located within the city limits of the City of Stockton. Connecting to their facility was determined to be not economically efficient in the alternatives analysis.

NEEDS A WAIVER TO PREVENT CONFLICT WITH AREA WIDE MANAGEMENT PLAN APPROVED UNDER SECTION 208 OF THE CLEAN WATER ACT AND/OR UNDER 10 CSR 20-6.010(3) (B) 1 OR 2 CONTINUING AUTHORITIES? (Y OR N) N

5.3.2. SOCIAL AND ECONOMIC IMPORTANCE EVALUATION

The applicant first identified the community that will be affected by the proposed degradation of water quality. The Orleans Trail Resort area in Cedar County is the affected community. The applicant is concerned about the possible environmental impact of the existing, but aged, treatment system. The proposed system will provide quality sewage treatment without excessive electrical costs, while causing no additional negative impact to the surrounding environment. The proposed system will enable the resort area to help sustain itself, which will provide more local income, taxes, and employment opportunities to the local Cedar County area.

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

7. MIXING CONSIDERATIONS

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

Mixing Zone:

Mixing Zone (MZ) Parameters: According to the USGS 1:24,000K Quadrangle, the mainstem lake width near the *assumed* new facility outfall location is approximately 160 feet (ft.). Using “normal” water levels of 160 ft. wide and one-quarter of this width equals 40 ft. Therefore, because 40 feet is less than 100 ft., MZ = 40 feet [10 CSR 20-7.031(4)(A)5.B.(IV)(a)].

Mixing Zone Volume: The flow volume approximates a triangular prism because of the slope of the lake bottom, where the formula is $\text{Volume} = L * W * (D * 0.5)$. Assuming that the width will be either side of the discharge (MZ) length (40 feet) to form the plume effect, the box dimensions are length (L) = 40 ft., width (W) = 40 ft., and depth (D) = 6 ft. Depth was obtained using mixing zone length projected 40 ft.

$$\text{Volume} = L * W * (D * (0.5)) = (40') * (40') * (6') * (0.5) = 4,800 \text{ ft}^3$$

The flow volume of 4,800 ft³ is assumed as the daily mixing zone. Therefore;
(4,800 ft³/day)*(1 day/86,400 sec) = **0.056 ft³/sec.**

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELoad ALLOCATION
STUDY CONDUCTED (Y OR N):

N

USE ATTAINABILITY
ANALYSIS CONDUCTED (Y OR N):

N

WHOLE BODY CONTACT
USE RETAINED (Y OR N):

Y

OUTFALL #001

WET TEST (Y OR N): N F FREQUENCY: N/A AEC: N/A METHOD: N/A

TABLE 3. EFFLUENT LIMITS OUTFALL #001

PARAMETER	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	BASIS FOR LIMIT (NOTE 2)	MONITORING FREQUENCY
FLOW	MGD	*		*	FSR	ONCE/MONTH
BIOCHEMICAL OXYGEN DEMAND ₅ ***	MG/L		15	10	PEL	ONCE/MONTH
DISSOLVED OXYGEN	MG/L	*		*	N/A	ONCE/MONTH
TOTAL SUSPENDED SOLIDS***	MG/L		20	15	PEL	ONCE/MONTH
pH	SU	6.5–9.0		6.5–9.0	FSR	ONCE/MONTH
AMMONIA AS N	MG/L	12.1		4.6	WQBEL	ONCE/MONTH
<i>ESCHERICHIA COLIFORM (E. COLI)</i>	NOTE 1		630**	126**	FSR	ONCE/MONTH

NOTE 1 – COLONIES/100 ML

NOTE 2– WATER QUALITY-BASED EFFLUENT LIMITATION --WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT--MDEL; OR PREFERRED ALTERNATIVE EFFLUENT LIMIT-PEL; TECHNOLOGY-BASED EFFLUENT LIMIT-TBEL;OR NO DEGRADATION EFFLUENT LIMIT--NDEL; OR FSR --FEDERAL/STATE REGULATION; OR N/A--NOT APPLICABLE. ALSO, PLEASE SEE THE **GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.**

* - Monitoring requirements only.

** - The Monthly and Weekly Averages for *E. coli* shall be reported as a Geometric Mean.

***This facility is required to meet a removal efficiency of 85% or more for BOD₅ and TSS. Influent BOD₅ and TSS data should be reported to ensure removal efficiency requirements are met.

9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

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

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 flow volume of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

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).

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD₅ and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and TSS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD₅ and TSS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. OUTFALL #001 – MAIN FACILITY OUTFALL

10.2. LIMIT DERIVATION

- **Flow.** 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.
- **Biochemical Oxygen Demand (BOD₅).** Applicant proposed BOD₅ limits of 10 mg/L monthly average and 15 mg/L weekly average. Dissolved oxygen modeling was not completed because the Streeter-Phelps dissolved oxygen model cannot simulate the impacts of dissolved oxygen to the lake segment. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **Total Suspended Solids (TSS).** Applicant proposed TSS limits of 15 mg/L monthly average and 20 mg/L weekly average were proposed. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **Dissolved Oxygen.** Monitoring requirement only. Retained from previous state operating permit.
- **pH.** pH shall be maintained in the range from six and one-half to nine (6.5– 9.0) standard units [10 CSR 20-7.015(3)(A)1.B.].
- **Total Ammonia Nitrogen.** Applicant proposed water quality-based technology limits of 12.1 mg/L daily maximum and 4.6 mg/L monthly average for the preferred alternative treatment (see Appendix C). Department staff has determined that these limits are appropriate.

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)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30, Winter: October 1 – March 31.

Summer

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

Chronic WLA: $C_e = ((0.012 + 0.056)1.5 - (0.056 * 0.01)) / 0.012$

$$C_e = 8.45 \text{ mg/L}$$

Acute WLA: $C_e = ((0.012 + 0.0)12.1 - (0.0 * 0.01)) / 0.012$

$$C_e = 12.1 \text{ mg/L}$$

$$LTA_c = 8.45 \text{ mg/L } (0.780) = 6.59 \text{ mg/L}$$

[CV = 0.6, 99th Percentile, 30 day avg.]

$$LTA_a = 12.1 \text{ mg/L } (0.321) = \mathbf{3.88 \text{ mg/L}}$$

[CV = 0.6, 99th Percentile]

$$MDL = 3.88 \text{ mg/L } (3.11) = 12.1 \text{ mg/L}$$

[CV = 0.6, 99th Percentile]

$$AML = 3.88 \text{ mg/L } (1.19) = 4.6 \text{ mg/L}$$

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

The acute LTA is more protective, therefore limits were not calculated for winter because they would be the same.

Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
12.1	4.6

- E. coli.** Effluent limitations for WBC(A) are 126 colonies per 100 ml monthly average and 630 colonies per 100 ml weekly average [10 CSR 20-7.015 (3)(A)1.C.].and [10 CSR 20-7.031(4)(C), Table A]. For facilities less than 100,000 gpd: Per the Clean Water Commission Directive in January 2011, the *E. coli* sampling/monitoring frequency shall be set to match the monitoring frequency of other parameters in the permit during the recreational season (April 1 – October 31), with compliance to be determined by calculating the geometric mean of all samples collected during the reporting period (samples collected during the calendar week for the weekly average, and samples collected during the calendar month for the monthly average). The weekly average requirement is consistent with EPA federal regulation 40 CFR 122.45(d). Further, the limit may change depending on the outcome of future state effluent regulation revision. Please see **GENERAL ASSUMPTIONS OF THE WQAR #7.**

- **Total Phosphorus & Total Nitrogen**. After the EPA's disapproval of Missouri's submitted general lake nutrient criteria on August 16, 2011, the EPA has approved the delisting of Stockton Lake for chlorophyll a and nitrogen on the 2012 303(d) report. The department recommends that the facility collect monitoring data for their own use; however it is not required. The potential exists that the facility will be given effluent limits or monitoring requirements for nutrients in the future.

11. ANTIDegradation Review Preliminary Determination

The proposed new facility discharge, USACE, Orleans Trail Park WWTF, 0.0075 MGD will result in significant degradation of the segment identified in Stockton Lake. A recirculating gravel filter was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations). The cost effectiveness of the other technologies were evaluated, and the recirculating gravel filter was found to be cost effective and was determined to be the preferred alternative.

Please note that the Department is not currently requiring nutrient limitations for this facility, and this antidegradation review does not include a specific approval of the nutrient removal system for meeting future nutrient effluent limits. The proposed biological nutrient removal system is not covered in 10 CSR 20-8 Design Guides and may be considered a new treatment technology. If nutrient limitations are added in the future, the applicant may be required to provide evidence that this system can consistently achieve proposed limits or provide an alternate method of nutrient removal.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Cailie McKinney

Date: 02/25/2013

Unit Chief: John Rustige, P.E.

APPENDIX A: MAP OF DISCHARGE LOCATION



On-line LEVEL 2 Report

Your project information

First Name: Warner

Last Name: Sherman

Email Address: buds@buildit.us

Business: Sherman Engineering Services

Project: none selected

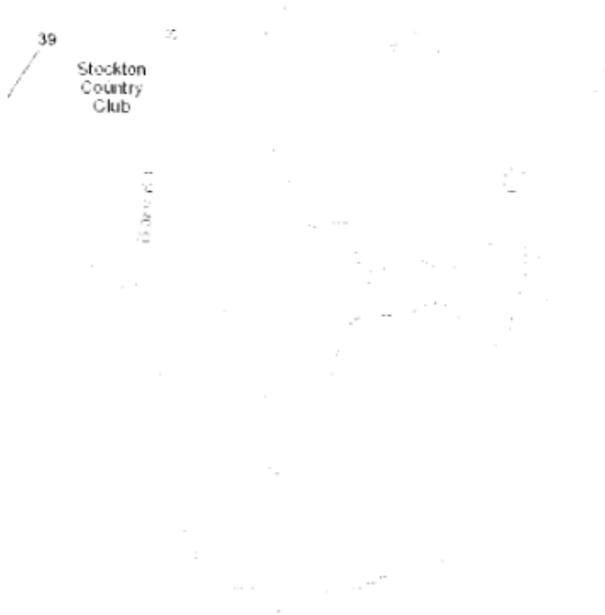
Your query information

Township: 34

Range: 26

Section: 21

Direction: w



Details

Thank you for accessing the Missouri Natural Heritage Review Web Site developed by the Missouri Department of Conservation and the U.S. Fish and Wildlife Service with funding assistance by the U.S. Army Corps of Engineers. The purpose of this web site is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants and their habitats to assist in planning, designing and permitting stages of projects.

The results of a database query of the above referenced location indicate that no federally-listed threatened or endangered species (including those species proposed for listing) or critical habitat (designated or proposed) are known to occur on or near the project site. The U.S. Fish and Wildlife Service response is provided under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

The results of a database query of the above-referenced location indicate that state endangered species other species or natural communities of conservation concern (e.g. prairie, glade, fen) are known to occur on or near the project site and may be impacted by project construction activities. An MDC specialist needs to review your request to determine if your project is close enough to impact the resource in question. Please contact the Missouri Department of Conservation for further consultation. A written request containing the project description, county name, U.S.G.S. 1:24,000 topographic quadrangle name, township, range and section, and a location map (e.g., U.S.G.S topo. quad.) with the project area clearly identified, and a copy of this document noting the unique reference code should be sent to: Missouri Department of Conservation, Resource Science Division, Missouri Natural Heritage Review Web Site, P.O. Box 180, Jefferson City, MO 65102-0180.

The web site also provides additional information regarding management practices for planning purposes if your project is within the known range of certain sensitive species and habitats(e.g., karst areas, grasslands, stream reaches with critical spawning

restrictions). Please note that this information does not serve as a substitute for direct consultation with Missouri Department of Conservation staff.

If you need additional information, please contact:

MDC Natural Heritage Review Resource Science Division P.O. Box 180 Jefferson City , MO 65102-0180 (Phone 573-522-4115 ext. 3250) www.mdc.mo.gov	or	U.S. Fish and Wildlife Service Ecological Services 101 Park Deville Drive , Suite A Columbia , Missouri 65203-0007 (Phone 573-234-2132)
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A HERITAGE REVIEW provides information about species and habitats of concern that could be affected by the project. Heritage records note things that were positively identified at some date and time, marked at a location that may be more or less precise. Animals move quickly but plant communities can move also. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean the project may not encounter something. Because of this, reports include information about records near but not necessarily on the project site. Three different kinds of information are provided.

- FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia , Missouri 65203-0007 ; Phone 573-234-2132; Fax 573-234-2181) for consultation.
- STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and protected under the Wildlife Code of Missouri (RSMo 3 CSR 10). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR10-4.111. "State Rank" is numeric rank of relative rarity, protected under general provisions of the Wildlife Code but not endangered.

- "Concerns & management recommendations" are things for which one might prudently look. There is no specific heritage record, but our knowledge of the surrounding landscape suggests consideration. 93% of Missouri 's land is in private ownership, so most sites have never been carefully inspected by conservation professionals

This report is not a site clearance letter. Rather, it provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from our Heritage Database into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive natural resources. However, the Heritage Database is only one reference that should be used to evaluate potential adverse impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information and species biological characteristics would additionally ensure that species of conservation concern are appropriately identified and addressed.

Additional information on rare, endangered and watched species may be found at <http://mdc.mo.gov/discover-nature/field-guide/endangered-species>. Detailed information about species mentioned may be accessed at http://mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx . If you would like printed copies of best management practices cited as internet URLs, please contact us.

APPENDIX C: ANTIDegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, USACE, Orleans Trail Park WWTF. MDNR staff determined that changes must be made to the information contained within these attachments. The following were modified and can be found within the MDNR WQAR:

- 1) On the Water Quality Review Assistance/Antidegradation Review Request Form and on Attachment A, the applicant listed the receiving waterbody as “Unnamed tributary to Stockton Lake” when it should be “Stockton Lake”.
- 2) Tier Determination and Effluent Limit Summary Sheet:
 - a. On Part 7, the way the POCs are listed appears as though some are Tier 1 and some are Tier 2, however all pollutants were assumed to be Tier 2 with significant degradation for this review.
 - b. Proposed ammonia effluent limits for average monthly and daily maximum were switched.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
WATER QUALITY REVIEW ASSISTANCE/ANTIDegradation REVIEW REQUEST
 PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS

TYPE OF PROJECT			
<input type="checkbox"/> Grant <input type="checkbox"/> SRF Loan <input checked="" type="checkbox"/> All Other Projects			
REQUESTER Warner Sherman, P.E.			TELEPHONE NUMBER WITH AREA CODE (417) 770-7701
PERMITTEE Rod Hendricks, U. S. Army Corps of Engineers			TELEPHONE NUMBER WITH AREA CODE (417) 276-3113
REASON FOR REQUEST			
<input checked="" type="checkbox"/> New Discharge (See Instruction #9) <input type="checkbox"/> Upgrade (No expansion) (See AIP) <input type="checkbox"/> Expansion			
DESCRIPTION OF PROPOSED ACTIVITY: Replacement of existing extended aeration plant with a recirculating gravel filter system.			
FACILITY INFORMATION			
FACILITY NAME Orleans Trail Park WWTF			MSOP NUMBER (IF APPLICABLE) MO-0030287
COUNTY Cedar			SIC / NAICS CODE 4952/22132
METHOD OF BACTERIA COMPLIANCE			
<input type="checkbox"/> Chlorine Disinfection <input checked="" type="checkbox"/> Ultraviolet Disinfection <input type="checkbox"/> Ozone <input type="checkbox"/> Not Applicable			
WATER QUALITY ISSUES None			
Water quality issues include: effluent limit compliance issues, notice (s) of violation, water body beneficial uses not attained or supported, etc.			
OUTFALL	LOCATION (LAT/LONG OR LEGAL DESCRIPTION)	MAPPED ¹ (CHECK)	RECEIVING WATER BODY ²
1	37° 40' 8" (N) 93° 47' 15" (W)	<input checked="" type="checkbox"/>	Unnamed tributary to Stockton Lake
		<input type="checkbox"/>	
		<input type="checkbox"/>	
¹ Attach topographic map (See www.dnr.mo.gov/internetmapviewer/) with outfall location(s) clearly marked. For additional outfalls, attach a separate form. ² See general instructions for discharges to streams.			
OUTFALL	NEW DESIGN FLOW** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
1	0.0075	Recirculating gravel filter	Domestic waste water
* Describe predominating character of effluent. Example: domestic wastewater, municipal wastewater, industrial wastewater, storm water, mining leachate, etc. ** If expansion, indicate new design flow.			
<input type="checkbox"/> Checked for rare or endangered species and provided determination with this request. See Instruction #8.			
ANTIDegradation REVIEW SUBMISSION:			
See attached Antidegradation instructions. Applicant supplied a summary within:			
<input checked="" type="checkbox"/> Tier Determination and Effluent Limit Summary <input checked="" type="checkbox"/> Attachment A – Significant Degradation <input type="checkbox"/> Attachment B – Minimal Degradation <input type="checkbox"/> Attachment C – Temporary degradation <input type="checkbox"/> Attachment D – Tier 1 Review <input type="checkbox"/> No Degradation Evaluation – Conclusion of Antidegradation Review			

ANTIDEGRADATION INSTRUCTIONS:

For more detailed instructions, the applicant should refer to *Missouri's Antidegradation Rule and Implementation Procedure*, which is available at www.dnr.mo.gov/env/wpp/permits/antideg-implementation.htm. All waters of the state (except groundwater) are subject to the Antidegradation Implementation Procedure. All applicants must submit determination of assigned tier(s) of protection to water quality for all waters of the state on a pollutant-by-pollutant basis. The applicant should consult Antidegradation Implementation Procedure, Section 1.B. for the process of assigning Tier Protection Levels. Both Tier 1 and 2 reviews are conducted on a pollutant-by-pollutant basis. Outstanding national and state water resources listed on Table D and E in the Water Quality Standards at 10 CSR 20-7.031 automatically are assigned Tier 3 reviews that are conducted on a water body-by-water body basis.

As an overview, Antidegradation Implementation Procedure requires the new or expanded discharge either:

1. Demonstrate that the loading is below allowed facility assimilative capacity and segment assimilative capacity.
2. Demonstrate that loading will be maintained or decreased.
3. Demonstrate degradation or assume degradation with alternative analysis and SEI evaluation.

For minimally degrading activities as defined in Antidegradation Implementation Procedure, no alternative analysis or socio-economic importance demonstration is required. If the activity is degrading or assumed to be degrading, then in order to complete the Administrative Record of Decision the applicant must submit both:

1. An alternative analysis that demonstrates the non-degrading and minimally degrading discharging options are either impracticable, non-cost efficient, or unaffordable.
2. An evaluation of socio-economic importance of the proposed degrading discharging activity for social and economic development of the community. Applicants must summarize the review using the attached summary sheets (See below).

Tier 1 Reviews: Pollutants of concern that qualify for Tier 1 Reviews may be discharged in accordance with Water Quality Standards without performing the alternative analysis or socio-economic importance demonstration. However, for a Pollutant of Concern with Tier 1 designation, the applicant must provide existing receiving water quality data³, or an appropriate water quality model¹, or department Section 303(d) listings (facilities with water bodies having 305(b) listed Pollutants of Concern should contact the department). Appendix 2 of the Antidegradation Implementation Procedure demonstrates the statistical process (90 percentile value is significantly more than 95 percent of the Water Quality Standards for the Pollutant of Concern) that applicants must use to designate Pollutant of Concern as Tier 1 (below, at or near Water Quality Standard), if Pollutant of Concern is not department Section 303(d) listed for that water body. Finally, for Tier 1 Pollutants of Concern the total maximum daily load process must be followed to maintain or improve water quality. The applicant must demonstrate that discharge will not violate the water quality criterion for that pollutant (see Attachment D). For a list of activities that are considered not to result in significant degradation, see Antidegradation Implementation Procedure, Section II.A.

Tier 2 Reviews: By default, and in the absence of existing water quality data, all waters of the state must have a Tier 2 review before an application for a permit to discharge is filed. If an applicant is assuming all POCs cause degradation, alternative analysis and socio-economic demonstration is required. Worksheets for evaluating alternative to discharge (see Antidegradation Implementation Procedure, Section II.B) and socio-economic importance to the community (See Antidegradation Implementation Procedure, Section II.E), as provided in 10 CSR 20-7.031, must be provided for review (see Attachment A). For Pollutant of Concern with Tier 2 designation, applicant must provide basis for determination by providing existing water quality³ or an appropriate water quality model¹. The applicant must consider the current existing water quality value in the administrative record from previous sampling events (see Antidegradation Implementation Procedure, Water Quality Assessment Procedures). If degradation is minimal or temporary, no alternative analysis and socio-economic demonstration (Tier 2 Review is not required) is required but applicant must provide basis for minimal determination. Degradation is considered minimal if the proposed new or expanded loading is less than 10 percent of the facility assimilative capacity and the cumulative degradation is less than 20 percent of the segment assimilative capacity as a result of all discharges combined. Minimal degradation as defined by Antidegradation Implementation Procedure must be supported by summary worksheet in Attachment B for facility assimilative capacity or segment assimilative capacity demonstrating assimilative capacity of Pollutant of Concern.

Tier 3 Reviews: Tier 3 water bodies shall receive no degradation of water quality. If hydrologic connection to Tier 3 water bodies has been or is demonstrated, then the applicant must demonstrate that water quality in the Tier 3 segment will not be lowered. Applicants in watersheds with significant losing segments should contact the department's Division of Geology and Land Survey for a Geohydrological Evaluation and available dye tracings information. Temporary degradation of water receiving with Tier 3 protection may be allowed by the department on a case-by-case basis as explain in Section II.A of Antidegradation Implementation Procedure document. Applicant must provide information stated below for evaluation of temporary degradation (see Attachment C).

³ A Quality Assurance Project Plan, or QAPP, must be provided to the department's Water Protection Program for review well in advance (i.e., at least six months) of the proposed data collection activity and well before submittal of the Antidegradation Review. A pre-applicant conference is highly recommended. **Important:** Applicant must follow the U.S. Environmental Protection Agency's Quality Assurance Project planning document, which is available at www.epa.gov/QUALITY/qas-docs/r5-final.pdf.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ANTIDegradation REVIEW SUMMARY
TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY

1. FACILITY			
NAME Orleans Trail Park WWTF		TELEPHONE NUMBER WITH AREA CODE 417-276-3113	
ADDRESS (PHYSICAL) 16435 E. Stockton Lake Drive	CITY Stockton	STATE MO	ZIP CODE 65785
2. RECEIVING WATER BODY SEGMENT #1			
NAME Stockton Lake (L2) (07235) (10290106-0703)			
2.1	UPPER END OF SEGMENT (Location of discharge) UTM _____ OR Lat <u>37°40'8"</u> Long <u>93°47'15"</u>	541727 (X)	4140238 (Y)
2.2	LOWER END OF SEGMENT UTM _____ OR Lat <u>37°40'5"</u> Long <u>93°47'13"</u>	541711 (X)	4139906 (Y)
Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."			
3. WATER BODY SEGMENT #2 (IF APPLICABLE)			
NAME N/A			
3.1	UPPER END OF SEGMENT UTM _____ OR Lat _____ Long _____		
3.2	LOWER END OF SEGMENT UTM _____ OR Lat _____ Long _____		
4. WATER BODY SEGMENT #3 (IF APPLICABLE)			
NAME N/A			
4.1	UPPER END OF SEGMENT UTM _____ OR Lat _____ Long _____		
4.2	LOWER END OF SEGMENT UTM _____ OR Lat _____ Long _____		
5. PROJECT INFORMATION			
Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1.B.3., "any degradation of water quality is prohibited in these waters unless the discharge only results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied.			
Will the proposed discharge of all pollutants of concern, or POCs, result in no net increase in the ambient water quality concentration of the receiving water after mixing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.			
Will the discharge result in temporary degradation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, complete Attachment C.			
Has the project been determined as non-degrading? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, complete No Degradation Evaluation – Conclusion of Antidegradation Review form. Submit with the appropriate Construction Permit Application as no antidegradation review is required.			
If yes to one of the above questions, skip to Section 8 - Wet Weather.			

9. SUMMARY OF THE PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS

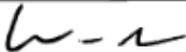
What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

Pollutant of Concern	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5	mg/L		10	15
TSS	mg/L		15	20
Dissolved Oxygen	mg/L		5	15
Ammonia	mg/L		12.1	4.6
Bacteria (E. Coli)	Col / 100mL		126	1000

These proposed limits must not violate water quality standards, be protective of beneficial uses and achieve the highest statutory and regulatory requirements.

Attach the Antidegradation Review report and all supporting documentation.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulation.

SIGNATURE 		DATE 11/30/2012	
NAME AND OFFICIAL TITLES Warner Sherman, P.E.			
COMPANY NAME Sherman Engineering Services			
ADDRESS P. O. Box 69	CITY Bolivar	STATE MO	ZIP CODE 65613
TELEPHONE NUMBER WITH AREA CODE 417-770-7701	E-MAIL ADDRESS buds@buildit.us		

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE 		DATE 12/11/12	
NAME AND OFFICIAL TITLES Rod Hendricks, Contracting Officer			
ADDRESS 16435 E. Stockton Lake Drive	CITY Stockton	STATE MO	ZIP CODE 65785
TELEPHONE NUMBER WITH AREA CODE 417-276-3113	E-MAIL ADDRESS		

CONTINUING AUTHORITY: Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE Same as Owner		DATE	
NAME AND OFFICIAL TITLES			
ADDRESS	CITY	STATE	ZIP CODE
TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS		



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME Orleans Trail Park WWTF		TELEPHONE NUMBER WITH AREA CODE 417-276-3113	
ADDRESS (PHYSICAL) 16435 E. Stockton Lake Drive	CITY Stockton	STATE MO	ZIP CODE 65785

2. RECEIVING WATER BODY SEGMENT #1

NAME Unnamed tributary to Stockton Lake
--

3. WATER BODY SEGMENT #2 (IF APPLICABLE)

NAME N/A

4. IDENTIFYING ALTERNATIVES

Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.

Non-degrading alternatives: No discharge lagoon w/ land application. Connection to regional sewer.

Alternatives ranging from less-degrading to degrading including Preferred Alternative (All must meet water quality standards):

Alternatives	Level of Treatment Attainable for each Pollutant of Concern				
	BOD	TSS	Ammonia as N	Bacteria (E. Coli)	
	(mg/L)	(mg/L)	(mg/L)	(#/100mL)	
Alternative #1	10	15	3	126	
Alternative #2	10	15	3	126	
Alternative #3	10	15	3	126	

Identifying Alternatives Summary: _____

Alternative #1 – Recirculating Gravel Filter
 Alternative #2 – AdvanTex
 Alternative #3 – Extended Aeration
 Alternative #4 – No Discharge, Land Application
 Alternative #5 – Connection to Regional Sewer

Alternative #1, a recirculating gravel filter, is the preferred alternative. It provides effective limits and is the most efficient, cost effective and socio-economical solution. The attached report discusses each alternative.

MO780-2021 (01/09)

6. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.

Identify the affected community:

The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located. Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project."

The Orleans Trail Resort area in Cedar County is the affected community that will benefit from the proposed project.

Identify relevant factors that characterize the social and economic conditions of the affected community:

Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged.

The planned system will provide quality sewage treatment without excessive electrical costs, while causing no negative impact to the surrounding environment.

Describe the important social and economic development associated with the project:

Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1.

The proposed system will enable the resort area to help sustain itself, which will provide more local income, taxes, and employment opportunities to the local Cedar County area.

PROPOSED PROJECT SUMMARY:

The proposed project is a 7500 gpd recirculating gravel filter system, complete with ultraviolet disinfection, flow measurement, and biological removal capability for a proven means of providing an environmentally safe and reliable treatment system.

Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed in consistent with the Antidegradation Implementation Procedure and current state and federal regulations.

SIGNATURE 	DATE 12-11-12
--	------------------

PRINT NAME Warner Sherman	LICENSE #: E-26645
------------------------------	-----------------------

TELEPHONE NUMBER WITH AREA CODE 417-770-7701	E-MAIL ADDRESS: buds@buildit.us
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OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE 	DATE 12/11/12
--	------------------

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE 	DATE 12/11/12
--	------------------



STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
NOVEMBER 1, 2013

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1);
 - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Twenty-Four Hour Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Sanitary Sewer Overflow Reporting.** The following requirements solely reflect reporting obligations, and reporting does not necessarily reflect noncompliance, which may depend on the circumstances of the incident reported.
- a. **Twenty-Four Hour (24-Hour) Reporting.** The permittee or owner shall report any incident in which wastewater escapes the collection system such that it reaches waters of the state or it may pose an imminent or substantial endangerment to the health or welfare of persons. Relevant information shall be provided orally or via the current electronic method approved by the Department within 24 hours from the time the permittee becomes aware of the incident. A written submission shall also be provided within five (5) business days of the time the permittee or owner becomes aware of the incident. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The five (5) day reports may be provided via the current electronic method approved by the Department.
 - b. **Incidents Reported via Discharge Monitoring Reports (DMRs).** The permittee or owner shall report any event in which wastewater escapes the collection system, which does not enter waters of the state and is not expected to pose an imminent or substantial endangerment to the health or welfare of persons, which occur typically during wet weather events. Relevant information shall be provided with the permittee's or owner's DMRs.
4. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
5. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
6. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, 4, and 7 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
7. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
8. **Discharge Monitoring Reports.**
- a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
 - b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.



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Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
 - c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
 - d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
 - a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
 - b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
 - c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
 - a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - i. Violations of any terms or conditions of this permit or the law;
 - ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
 - iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
 - iv. Any reason set forth in the Law or Regulations.
 - b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.



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7. **Permit Transfer.**
 - a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
 - b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
 - c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.



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MAY 1, 2013

PART II - SPECIAL CONDITIONS – PUBLICLY OWNED
TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the *General Pretreatment Regulation* 10 CSR 20-6.100, the term Significant Industrial User means:

1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's or for violating any Pretreatment Standard or requirement.

Clean Water Act (CWA) is the the federal Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. (2002).

2. Identification of Industrial Discharges

Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information

Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department

Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
3. For purposes of this paragraph, adequate notice shall include information on:
 - i. the quality and quantity of effluent introduced into the POTW, and
 - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

Missouri Department of Natural Resources
Water Protection Program
Attn: Pretreatment Coordinator
P.O. Box 176
Jefferson City, MO 65102

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
March 1, 2014

**PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND INDUSTRIAL WASTEWATER
TREATMENT FACILITIES**

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
 - a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

Where deemed appropriate, the department may require an individual site specific permit in order to authorize alternate limitations:

 - a. A site specific permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the department, as follows:

- a. The department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
- b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
 - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the department; or
 - b. Permittee shall close the lagoon in accordance with Section H.

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
 - a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
 - b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.

5. Public Contact Sites:

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.

- a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
- b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.

6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422(WQ422) published by the University of Missouri

- a. Haulers that land apply septage must obtain a state permit
- b. Do not apply more than 30,000 gallons of septage per acre per year.
- c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
- d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
- e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

- a. Biosolids shall be monitored to determine the quality for regulated pollutants
- b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable department approved material to reach the maximum concentration of pollutants allowed.
- c. Table 1 gives the maximum concentration allowable to protect water quality standards

TABLE 1

Biosolids ceiling concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

¹Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

- d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

TABLE 2

Biosolids Low Metal Concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

¹You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

- e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

TABLE 3

Pollutant	CEC 15+		CEC 5 to 15		CEC 0 to 5	
	Annual	Total ¹	Annual	Total ¹	Annual	Total ¹
Arsenic	1.8	36.0	1.8	36.0	1.8	36.0
Cadmium	1.7	35.0	0.9	9.0	0.4	4.5
Copper	66.0	1,335.0	25.0	250.0	12.0	125.0
Lead	13.0	267.0	13.0	267.0	13.0	133.0
Mercury	0.7	15.0	0.7	15.0	0.7	15.0
Nickel	19.0	347.0	19.0	250.0	12.0	125.0
Selenium	4.5	89.0	4.5	44.0	1.6	16.0
Zinc	124.0	2,492.0	50.0	500.0	25.0	250.0

¹Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

TABLE 4 - Guidelines for land application of other trace substances¹

Cumulative Loading	
Pollutant	Pounds per acre
Aluminum	4,000 ²
Beryllium	100
Cobalt	50
Fluoride	800
Manganese	500
Silver	200
Tin	1,000
Dioxin	(10 ppt in soil) ³
Other	⁴

¹Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

²This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

³Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

⁴Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426(WQ426) published by the University of Missouri

- a. Use best management practices when applying biosolids.
- b. Biosolids cannot discharge from the land application site
- c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
- d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
- e. Do not apply more than the agronomic rate of nitrogen needed.
- f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil and crop removals unless the nitrogen content of the biosolids does not exceed 50,000 milligrams per kilogram of total nitrogen on a dry weight basis or biosolids application rate is less than two dry tons per acre per year.
 - i. PAN can be determined as follows and is in accordance with WQ426
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
- g. Buffer zones are as follows:
 - i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet if dwellings;
 - iv. 100 feet of wetlands or permanent flowing streams;
 - v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
- h. Slope limitation for application sites are as follows;
 - i. A slope 0 to 6 percent has no rate limitation
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
 - iii. Slopes > 12, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
- i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the department.
- k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6.010 and 10 CSR 20 – 6.015.

3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
 - i. PAN can be determined as follows:
 (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
 - a. Testing for metals or fecal coliform is not required
 - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
 - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
 - b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
 - c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Design Sludge Production (dry tons per year)	Monitoring Frequency (See notes 1 and 2)			
	Metals, Pathogens and Vectors	Nitrogen TKN ¹	Nitrogen PAN ²	Priority Pollutants and TCLP ³
0 to 100	1 per year	1 per year	1 per month	1 per year
101 to 200	biannual	biannual	1 per month	1 per year
201 to 1,000	quarterly	quarterly	1 per month	1 per year
1,001 to 10,000	1 per month	1 per month	1 per week	-- ⁴
10,001 +	1 per week	1 per week	1 per day	-- ⁴

¹ Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less

² Calculate plant available nitrogen, nitrogen content of the biosolids is greater than 50,000 milligrams per kilogram of total nitrogen on dry weight basis or if the biosolids application rate is greater than two dry tons per acre per year.

³ Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

⁴ One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

2. If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the department.
4. At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
 - a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
 - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the department or equivalent forms approved by the department.
4. Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the department and EPA. Other facilities need to report only to the department. Reports shall be submitted to the addresses listed as follows:

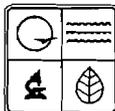
DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
11201 Renner Blvd.
Lenexa, KS 66219

5. Annual report Contents. The annual report shall include the following:
- a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
 - b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
 - c. Gallons and % solids data used to calculate the dry ton amounts.
 - d. Description of any unusual operating conditions.
 - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
 - i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
 - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
 - f. Contract Hauler Activities
If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
 - g. Land Application Sites:
 - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. If nitrogen content of the biosolids is greater than 50,000 milligrams per kilogram of total nitrogen on dry weight basis or if the biosolids application rate is greater than two dry tons per acre per year, report biosolids nitrogen results, PAN in pounds/acre crop nitrogen requirement.
 - ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
 - iii. Report the method used for compliance with pathogen and vector attraction requirements.
 - iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

RECEIVED

MP18210 C13218



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 (<100,000 gallons per
day) UNDER MISSOURI CLEAN WATER LAW

APR 28 2011

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
4-28-11	0 - DS

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. MO-0030287
- An operating permit renewal: Permit #MO- _____ Construction Permit # CP0001466
- An operating permit modification: Permit #MO- _____ Expiration Date _____
- 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 1 of 1)

NAME Orleans Trail Park WWTF (MO-0030287)		TELEPHONE WITH AREA CODE (417) 276-3113	
ADDRESS (PHYSICAL) 16435 E. Stockton Lake Drive	CITY Stockton	STATE MO	ZIP CODE 65785

2.1 LEGAL DESCRIPTION: SE 1/4, NE 1/4, SW 1/4, Sec. 21, T 34, R 26 Cedar County

2.2 UTM Coordinates Easting (X): 430670 Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: _____

3. OWNER

NAME U.S. Army Corps of Engineers		E-MAIL ADDRESS	TELEPHONE WITH AREA CODE (417) 276-3113
ADDRESS 16435 E. Stockton Lake Drive	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 Rod Hendricks	TITLE Contracting Officer	TELEPHONE WITH AREA CODE (417) 276-3113
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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: 7996; Discharge SIC code: 4952; Facility NAICS code: _____; Discharge NAICS code: _____

7.3 Number of people presently connected or population equivalent (P.E.) 100 Design P.E. 300
 Number of units presently connected: Homes _____ Trailers _____ Apartments _____ Other _____
 Design flow for this outfall: 7500 Total design flow for the facility: 7500 Actual flow for this outfall: 5000
 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? 800 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: April - October
 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

8. SLUDGE HANDLING, USE AND DISPOSAL

8.1 Is the sludge a hazardous waste as defined by 10 CSR 25? Yes No

8.2 Sludge Production, including sludge received from others: 1.0 Design Dry Tons/Year 1.0 Actual Dry Tons/Year

8.3 Capacity of sludge holding structures:
 Sludge storage provided: 890 cubic feet; 120 days of storage; 3 average percent solids of sludge;
 No sludge storage is provided.

8.4 Type of Storage: Holding tank Building Other (Please describe) Septic Tanks
 Basin Other (Please describe) Septic Tanks
 Concrete Pad

8.5 Sludge Treatment:
 Anaerobic Digester Lagoon Composting
 Storage Tank Aerobic Digester Other (Attach description)
 Lime Stabilization Air or Heat Drying

8.6 Sludge Use or Disposal:
 Land Application Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
 Contract Hauler Incineration
 Hauled to Another Treatment Facility Sludge Retained in Wastewater treatment lagoon
 Solid Waste Landfill Other Attach explanation sheet.

8.7 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY
 By Applicant By Others (complete below)

NAME
Winder Plumbing

ADDRESS 11570 E. Highway 32	CITY Stockton	STATE MO	ZIP CODE 65785
CONTACT PERSON Carl Winder	TELEPHONE WITH AREA CODE 417-276-5676	PERMIT NO. MO-	

8.8 SLUDGE USE OR DISPOSAL FACILITY
 By Applicant 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?
 Yes No (Please attach explanation)

9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.

NAME
Same as 3.

ADDRESS	CITY	STATE	ZIP CODE
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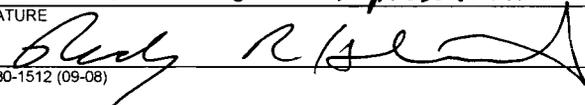
10. DRINKING WATER SUPPLY INFORMATION

10.1 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:
 A. Public supply (municipal or water district water) 5110188
 If public, please give name of the public supply T/NC
 B. Private well N/A
 C. Surface water (lake, pond or stream) N/A

10.2 Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)?
 Yes 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? Yes 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) Rod Hendricks, Contracting Officer <i>Representative</i>	TELEPHONE WITH AREA CODE (417) 276-3113
SIGNATURE 	DATE SIGNED 4/23/2014