

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-0132136

Owner: Laclede County Public Water Supply District #3
Address: 23006 Paradise Drive Lebanon, MO 65536

Continuing Authority: Laclede County Public Water Supply District #3
Address: 23006 Paradise Drive Lebanon, MO 65536

Facility Name: Cedars Business Park WWTF
Facility Address: 22200 MM Highway, Lebanon MO 65536

Legal Description: NE¹/₄, NE¹/₄, SW¹/₄, Sec. 6, T34N, R15W, Laclede County
UTM (X/Y): 533245.6 / 4172785.9

Receiving Stream: Unnamed Tributary to Dry Auglaize Creek (U)
First Classified Stream and ID: Dry Auglaize Creek (P) (01145) 303 (d)
USGS Basin & Sub-watershed No.: (10290109-060002)

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 – Commercial Business Park (POTW) / Sewerage Works - SIC # 6512 / 4952

Septic tanks as part of a Septic Tank Effluent Pump (STEP) system / recirculating sand or pea gravel filter system / ultraviolet disinfection / sludge disposal by contract hauler

Design organic population equivalent is 120.
Design average daily flow is 12,000 gallons per day.
Design sludge production is 23.1 dry tons/year.

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

June 09, 2010
Effective Date


Mark N. Templeton, Director Department of Natural Resources

June 08, 2015
Expiration Date


Cynthia S. Davies, Regional Director, Southwest Regional Office

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 2 of 4		
				PERMIT NUMBER MO-0132136		
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	GPD	*		*	once/quarter**	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L	20		10	once/quarter**	****
Total Suspended Solids	mg/L	30		15	once/quarter**	****
pH – Units	SU	***		***	once/quarter**	grab
Fecal Coliform	#/100 ml	1,000		400 (Note 1)	once/quarter**	grab
Nitrate as N	mg/L	16.4		8.2	once/quarter**	grab
Ammonia as N	mg/L				once/quarter**	grab
(Apr 1 - Jun 30)		6.8		2.6		
(Jul 1 - Sep 30)		3.2		1.2		
(Oct 1 - Dec 31)		6.8		2.6		
(Jan 1 - Mar 31)		7.5		2.9		
Oil and Grease	mg/L	15		10	once/quarter**	grab
Temperature	°C	*		*	once/quarter**	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE October 28, 2010 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** Sample once per quarter in the months of **March, June, September, and December**. Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the 1st quarter (sample collected in March), report due by April 28th.
- *** pH is measured in pH units and is not to be averaged. The pH for all facilities except lagoons is limited to the range of 6.0-9.0 pH units.
- **** A composite sample made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample. A person may physically collect the four grab samples or a composite sampler may be set up to collect the four grab samples.

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

C. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 3 of 4	
		PERMIT NUMBER MO-0132136	
The facility is required to meet a removal efficiency of 85% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Influent</u>			
Biochemical Oxygen Demand ₅	mg/L	once / quarter**	****
Total Suspended Solids	mg/L	once /quarter**	****
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> . THE FIRST REPORT IS DUE <u>October 28, 2010</u> .			

MO 780-0010 (8/91)

C. INFLUENT MONITORING REQUIREMENTS (continued)

** Sample once per quarter in the months of **March, June, September, and December**. Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the 1st quarter (sample collected in March), report due by April 28th.

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

D. SPECIAL CONDITIONS

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

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

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

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

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

- (1) One hundred micrograms per liter (100 µg/L);

D. SPECIAL CONDITIONS (continued)

- (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
6. Water Quality Standards
- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

**Missouri Department of Natural Resources
Statement of Basis
Cedars Business Park
NPDES #: MO-0132136
Laclede County**

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

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

Part I – Facility Information

Facility Information

Facility Type: Sewerage Works (POTW)
Facility SIC Code(s): 4952

Facility Description: Septic tanks as part of a Septic Tank Effluent Pump (STEP) system / recirculating sand or pea gravel filter system / ultraviolet disinfection / sludge disposal by contract hauler

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.0186	Equivalent to Secondary	Domestic, New	~3.76

Water Quality History: N/A

Comments: New Facility

Part II – Operator Certification Requirements

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

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

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

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

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:

Subsurface Water [10 CSR 20-7.015(7)]:
 All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed Tributary to Dry Auglaize Creek	U	N/A	Losing Stream, General Criteria	10290109	Ozark / Osage Drainage
Dry Auglaize Creek	P	01145	LWW, AQL, WBC – B,***	10290109	Ozark / Osage Drainage

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

** - Ecological Drainage Unit

*** - UAA has not been conducted.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Unnamed Tributary to Dry Auglaize Creek	0	0	0

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

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

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Applicable :

This facility discharges to a Losing Stream, as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], and has submitted alternative evaluation.

ANTI-BACKSLIDING:

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

- New facility.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

ANTIDegradation:

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

Applicable .

- As per [10 CSR 20-7.031(2)(D)], the three (3) levels of protection provided by the antidegradation policy in subsections (A), (B), and (C) of this section shall be implemented according to procedures developed by the department. On April 20, 2007, the Missouri Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (Antidegradation Rule), which is applicable to new or upgraded/expanded facilities. Because the construction permit for this facility was received before August 31, 2008, an antidegradation review is not required.

APPLICABLE PERMIT PARAMETERS:

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

Bio-solids, Sludge, & Sewage Sludge:

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

Not Applicable .

This condition is not applicable to the permittee for this specific facility as the sludge produced is industrial and cannot be reused for beneficial uses.

COMPLIANCE AND ENFORCEMENT:

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

Not Applicable .

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

PRETREATMENT PROGRAM:

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

Not Applicable ;

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

REASONABLE POTENTIAL ANALYSIS (RPA):

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

Not Applicable ;

A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs). Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

Applicable ;

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

SANITARY SEWER OVERFLOWS (SSOs), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:

Sanitary Sewer Systems (SSSs) are municipal wastewater collection system that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

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

Not Applicable ;

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

SCHEDULE OF COMPLIANCE (SOC):

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

Not Applicable ;

This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

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

Not Applicable ;

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

Not Applicable ;

Wasteload allocations were not calculated.

WLA MODELING:

Not Applicable ;

A WLA study was either not submitted or determined not applicable by department staff.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

Applicable ;

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

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

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

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

WLA MODELING:

Not Applicable ;

A WLA study was either not submitted or determined not applicable by department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones.

Additionally, [40 CFR 122.44(d)(1)] directs the department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

Not Applicable ;

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

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

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

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

Applicable ;

Dry Auglaize Creek is listed on the 2002 Missouri 303(d) List for unknown.

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

Outfall #001 – Main Facility Outfall**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	N/A	N/A
BOD ₅ **	MG/L	1	20		10	N/A	N/A
TSS **	MG/L	1	30		15	N/A	N/A
pH (S.U.)	SU	1	6.0-9.0		6.0-9.0	N/A	N/A
AMMONIA AS N (APRIL – JUNE)	MG/L	5	6.8		2.6	N/A	N/A
AMMONIA AS N (JULY – SEPTEMBER)	MG/L	5	3.2		1.2	N/A	N/A
AMMONIA AS N (OCTOBER – DECEMBER)	MG/L	5	6.8		2.6	N/A	N/A
AMMONIA AS N (JANUARY - MARCH)	MG/L	5	7.5		2.9	N/A	N/A
FECAL COLIFORM	***	1	1,000		400	N/A	N/A
NITRATE/ NITRITE AS N	MG/L	1, 8	16.4		8.2		
OIL & GREASE (MG/L)	MG/L	1, 8	15		10	N/A	N/A
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

*** - Monitoring requirement only**

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

N/A – Not applicable

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

Biochemical Oxygen Demand (BOD₅).

☒ – 20 mg/L Daily Maximum and 10 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015]. The daily maximum is calculated by $(10 \text{ AML})(\text{LTAc}/1.5524 \text{ AML})(3.114/\text{LTAc}) = 20 \text{ mg/L}$ daily maximum. This method is outlined in SWRO-WP17-01 and is as protective as the weekly average of 15 mg/L, therefore the daily maximum is substituted for the weekly average in the permit..

Total Suspended Solids (TSS).

☒ – 30 mg/L Daily Maximum and 15 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015]. The daily maximum is calculated by $(15 \text{ AML})(\text{LTAc}/1.5524 \text{ AML})(3.114/\text{LTAc}) = 30 \text{ mg/L}$ daily maximum. This method is outlined in SWRO-WP17-01 and is as protective as the weekly average of 20 mg/L, therefore the daily maximum is substituted for the weekly average in the permit..

pH.

☒ – pH is limited to the range of 6.0 – 9.0 pH units, as per [10 CSR 20-7.015]. pH is measured in pH units and is not to be averaged.

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

Total Ammonia Nitrogen. 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)
Apr 1 – Jun 30	16	7.8	2.8	12.1
Jul 1 – Sept 30	28	7.8	1.3	12.1
Oct 1 – Dec 31	16	7.8	2.8	12.1
Jan 1 – Mar 31	6	7.8	3.1	12.1

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

Spring – Chronic WLA = 2.8 mg N/L, Acute WLA = 12.1 mg N/L. No mixing zone is allowed. Discharges to Unclassified Stream.

$$\text{LTA}_c = 2.8 \text{ mg/L} (0.780) = 2.2 \text{ mg N/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

$$\text{LTA}_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg N/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 2.2 \text{ mg/L} * 3.114 = 6.8 \text{ mg N/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 2.2 \text{ mg/L} * 1.19 = 2.6 \text{ mg N/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

Summer – Chronic WLA = 1.3 mg N/L, Acute WLA = 12.1 mg N/L. No mixing zone is allowed. Discharges to Unclassified Stream.

$$\text{LTA}_c = 1.3 \text{ mg/L} (0.780) = 1.0 \text{ mg N/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

$$\text{LTA}_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg N/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 1.0 \text{ mg/L} * 3.114 = 3.2 \text{ mg N/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 2.2 \text{ mg/L} * 1.19 = 1.2 \text{ mg N/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

Fall – Chronic WLA = 2.8 mg N/L, Acute WLA = 12.1 mg N/L. No mixing zone is allowed. Discharges to Unclassified Stream.

LTA_c = 2.8 mg/L (0.780) = 2.2 mg N/L [CV = 0.6, 99th Percentile, 30 day average]
 LTA_a = 12.1 mg/L (0.321) = 3.9 mg N/L [CV = 0.6, 99th Percentile]
 MDL = 2.2 mg/L * 3.114 = 6.8 mg N/L [CV = 0.6, 99th Percentile]
 AML = 2.2 mg/L * 1.19 = 2.6 mg N/L [CV = 0.6, 95th Percentile, n = 30]

Winter – Chronic WLA = 3.1 mg N/L, Acute WLA = 12.1 mg N/L. No mixing zone is allowed. Discharges to Unclassified Stream.

LTA_c = 3.1 mg/L (0.780) = 2.4 mg N/L [CV = 0.6, 99th Percentile, 30 day average]
 LTA_a = 12.1 mg/L (0.321) = 3.9 mg N/L [CV = 0.6, 99th Percentile]
 MDL = 2.4 mg/L * 3.114 = 7.5 mg N/L [CV = 0.6, 99th Percentile]
 AML = 2.2 mg/L * 1.19 = 2.9 mg N/L [CV = 0.6, 95th Percentile, n = 30]

Season	Maximum Daily Limit (mg N/L)	Average Monthly Limit (mg N/L)
Apr 1 – Jun 30	6.8	2.6
Jul 1 – Sept 30	3.2	1.2
Oct 1 – Dec 31	6.8	2.6
Jan 1 – Mar 31	7.5	2.9

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

Nitrate

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

Chronic: C_e = ((0.01086+0)*10-(0*0) / 0.0186 = 10
 WLA_c = 10 mg/L

LTA_c = 10 (0.5274) = **5.274 mg/L** [CV = 0.6, 99th Percentile]

MDL = 5.274(3.114) = 16.4 mg/L [CV = 0.6, 99th Percentile]
 AML = 5.274(1.55) = 8.2 mg/L [CV = 0.6, 95th Percentile, n = 4]

Oil & Grease. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

• **Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	QUARTERLY	QUARTERLY
BOD ₅	QUARTERLY	QUARTERLY
TSS	QUARTERLY	QUARTERLY
PH (S.U.)	QUARTERLY	QUARTERLY
AMMONIA AS N	QUARTERLY	QUARTERLY
FECAL COLIFORM	QUARTERLY	QUARTERLY
OIL & GREASE (MG/L)	QUARTERLY	QUARTERLY

NITRATE AS N (MG/L)	QUARTERLY	QUARTERLY
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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.

Date of Factsheet: March 30, 2010

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Appendix A

10 CSR 20-9.020

All wastewater treatment systems serving a population equivalent greater than two hundred (200) or with fifty (50) or more service connections, owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and the state or federal agencies.

Column A			Column B		
Item	Points	Points Assigned	Item	Points	Points Assigned
Maximum population equivalent (P.E.) served, peak day	1 pt. Per 10,000 PE or major fraction thereof		EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY		
Design flow (avg. day) or peak month's flow, (avg. day) whichever is larger	Maximum: 10 Points 1 pt. Per MGD or major fraction thereof		Missouri or Mississippi River	0	
REQUIRED LABORATORY CONTROL Performed by plant personnel (highest level only)			All other stream discharges except to losing streams and stream reaches supporting whole body contact reaction	1	
Lab work done outside the plant	0		Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Push – button or visual methods for simple tests such as pH, settleable solids	3		Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
			HEADWORKS - PRELIMINARY TREATMENT		
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5	Raw wastes subject to toxic waste discharges	6	
			Screening and/or comminution	3	
			Grit removal	3	
More advanced determinations such as BOD seeding procedure, fecal coliform, nutrients, total oils, phenols, etc.	7		Plant pumping of main flow (If 51% or greater flow comes into plant)	3	
			PRIMARY TREATMENT		
			Primary clarifiers (Flow EQ basins)	5	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10		Combined sedimentation/digestion (includes big septic tank or if cities clean out STEP system)	5	5
			Chemical addition (except chlorine, enzymes)	4	
TOTAL Page 1 Column A		5	TOTAL Page 1 Column B		8

Column A				Column B			
Item		Points	Points Assigned	Item		Points	Points Assigned
Direct reuse or recycle of effluent		6		SECONDARY TREATMENT			
Land Disposal – Low rate (Irrigation) < 24” year		3		Trickling filter and other fixed film media with secondary clarifiers (recirculating sand filters)		10	10
Land Disposal – High rate (Irrigation) > 24” year		5		Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)		15	
Overland flow		4		Stabilization ponds without aeration		5	
Variation in Raw Wastes (highest level only) (DMR exceedances & Design Flow exceedances)				Aerated lagoon (Lemna)		8	
Variations do not exceed those normally or typically expected		0		Advanced Waste Treatment Polishing pond (Lemna)		2	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow (use design flow for determination)		2		Chemical/physical – without secondary (carbon filters such as at Wilson’s Creek WWTF)		15	
Recurring deviations or excessive variations of more than 200 percent in strength and/or flow (use design flow for determination)		4		Chemical/physical – following secondary (adding alum if not at headworks, tertiary filters)		10	
SOLIDS HANDLING - SLUDGE				Biological or chemical biological (multi stage biological treatment, SBR and 3-phase biological treatment)		20	
Thickening (Lagoon sludge holding basin)		5		Carbon Regeneration		4	
Anaerobic digestion		10		DISINFECTION			
Aerobic digestion		6		Chlorination or comparable		5	
Evaporative sludge drying		2		Dechlorination		2	
Mechanical dewatering (belt thickeners)		8		On-site generation of disinfectant (ozone)		5	
Solids reduction (incineration, wet oxidation, composting)		12		Ultraviolet light		4	4
Land application		6		TOTAL Page 2 Column B			14
TOTAL Page 2 Column A			0	PREPARED BY:			
Grand Total			27	Megan L. Hart 3/30/2009			
Level of Certification Required				(Name) (Date)			
D	C	B	A				
≤ 25	26 – 50	51 – 70	≥ 71				