

Village of South Greenfield
P O Box 114
South Greenfield, MO 65752

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, we have issued and are enclosing your State Operating Permit to discharge from South Greenfield Wastewater Treatment Facility, Dade County, Missouri.

Please read your permit and enclosed Standard Conditions. They contain important information on monitoring requirements, effluent limitations, sampling frequencies and reporting requirements.

Monitoring reports required by the special conditions must be submitted on a periodic basis. The required forms are enclosed. Please make copies for your use. Completed forms should be mailed to this office.

Please note that the new effluent limits will take effect on **June 1, 2013**. These new effluent limitations may require an upgrade to the current treatment process. Please refer to **Part E** of the enclosed permit, which outlines the specific schedule you must follow.

The project to upgrade your facility will require careful planning, time and expenditure of capital. State regulations require that you involve a Missouri licensed professional engineer to design your project. The completed design is required to be submitted to this office for review and approval. Once approved, a construction permit is issued and you may begin your construction project to improve your facility.

This permit is both your Federal NPDES Permit and your new Missouri State Operating Permit and replaces all previous State Operating Permits issued for this facility under this permit number. In all future correspondence regarding this facility, please refer to your State Operating Permit number and facility name as shown on page one of the permit.

Please be aware that nothing in this permit relieves the permittee of any other legal obligations or restrictions, such as other federal or state laws, court orders, or county or other local ordinances or restrictions.

South Greenfield
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If you were adversely affected by this decision, you may be entitled to an appeal before the administrative hearing commission pursuant to 10 CSR 20-1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission. Any appeal shall be directed to: Administrative Hearing Commission, Truman Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, MO 65102, Phone: 573-751-2422, Fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have questions concerning this permit please contact Mr. Sieu T. Dang, P.E., of my staff by calling 417-891-4300 or via mail at Southwest Regional Office, 2040 W. Woodland, Springfield, MO 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE



Cynthia S. Davies
Regional Director

CSD/sdl

Enclosures

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-0129747

Owner: Village of South Greenfield
Address: P O Box 114, South Greenfield, MO 65752

Continuing Authority: Same as Above
Address: Same as Above

Facility Name: Village of South Greenfield WWTF **Class C operator needed**
Facility Address: Tough Street, South Greenfield, MO 65752

Legal Description: NE¹/₄, NW¹/₄, SW¹/₄, Sec. 31, T31N, R26W, Dade County
Lat/Long: +3722480 / -09350218

Receiving Stream: Limestone Creek (P)
First Classified Stream and ID: Limestone Creek (P) (1412)
USGS Basin & Sub-watershed No.: (10290106-020003)

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

FACILITY DESCRIPTION

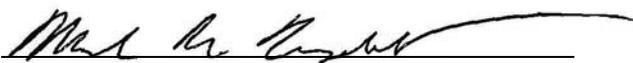
Outfall #001 - POTW / Sewerage Works - SIC #4952

Septic tank/ recirculating sand filter/ ultraviolet disinfection/ sludge disposal by contract hauler

Design population equivalent is 210.
Design average daily flow is 18,000 gallons per day.
Design sludge production is 3.2 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 3, 2010
Effective Date


Mark N. Templeton, Director Department of Natural Resources

June 2, 2015
Expiration Date


Cynthia S. Davies, Regional Director, Southwest Regional Office

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 2 of 6

PERMIT NUMBER MO-0129747

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

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	GPD	*		*	once/quarter**	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		45	30	once/quarter**	grab
Total Suspended Solids	mg/L		45	30	once/quarter**	grab
pH – Units	SU	***		***	once/quarter**	grab
Fecal Coliform (Note 1)	#/100 ml	1000		400 (Note 2)	once/quarter**	grab
Ammonia as N	mg/L	*		*	once/quarter**	grab
Temperature	°C	*		*	once/quarter**	grab
Oil & Grease	mg/L	*		*	once/quarter**	grab
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Dissolved Oxygen	mg/L	*		*	once/quarter**	grab

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

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)				PAGE NUMBER 3 of 6		
				PERMIT NUMBER MO-0129747		
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective June 1, 2013 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	GPD	*		*	once/quarter**	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		45	30	once/quarter**	grab
Total Suspended Solids	mg/L		45	30	once/quarter**	grab
pH – Units	SU	***		***	once/quarter**	grab
Fecal Coliform (Note 1)	#/100 ml	1000		400 (Note 2)	once/quarter**	grab
Ammonia as N	mg/L	13.2		5.0	once/quarter**	grab
Temperature	°C	*		*	once/quarter**	grab
Oil & Grease	mg/L	15		10	once/quarter**	grab
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Dissolved Oxygen	mg/L	*		*	once/quarter**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE OCTOBER 28, 2013 . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> and <u>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.

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

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

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

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

C. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 4 of 6	
		PERMIT NUMBER MO-0129747	
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**	grab
Total Suspended Solids	mg/L	once / quarter**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u>; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2010</u>.			

C. INFLUENT MONITORING REQUIREMENTS (continued)

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

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 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. 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;

D. SPECIAL CONDITIONS (continued)

- (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 develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report on **November 28** each year to the Southwest Regional Office which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
8. 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.

E. SCHEDULE OF COMPLIANCE

For Operator Certification Requirement

1. By **August 31, 2010**, obtain the services of a chief operator certified at Class C or higher.
2. By **September 15, 2010**, provide in writing the name and certification number of the chief operator that is hired to operate the wastewater treatment facility to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807.

For Ammonia and Oil & Grease

3. By **May 31, 2011** submit a completed application for construction permit, application fee, and one copy each of an engineering report, plans and specifications prepared by a professional engineer registered in the State of Missouri to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807, for providing wastewater treatment facility improvements to comply with the final effluent limitations as listed in Part A of this permit, designed in accordance with Missouri Clean Water Law Regulation 10 CSR 20 Chapter 8.

Please note that you may be able to meet the Ammonia and Oil & Grease final effluent limits without a construction permit. If the final effluent limits can be achieved without a construction permit please submit in writing by **May 31, 2011** how you are planning to meet the new effluent limits.

4. Within fifteen (15) calendar days of receipt of any request for additional information or changes in the engineering report, plans or specifications, respond and if necessary submit engineering modifications to the department.
5. Within 365 calendar days of issuance of the construction permit, construct the permitted wastewater treatment facility improvements.
6. Within fifteen (15) calendar days of completion of construction of wastewater treatment facility improvements, submit a Statement of Work Completed form, signed, sealed, and dated by a professional engineer registered in the State of Missouri certifying that the project has been completed substantially in accordance with the approved plans and specifications. In addition to the Statement of Work Completed, submit an application for a Missouri State Operating Permit modification complete with the appropriate modification fee to the Missouri Department of Natural Resources, 2040 West Woodland, Springfield, Missouri, 65807.
7. Annual progress reports shall be submitted on January 28th of each year until the construction completed. The report shall include what step of the process the facility is at, how much construction has been completed, approximately time of completion, etc. The first report is due **January 28, 2011**.

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

**Missouri Department of Natural Resources
Statement of Basis
Village of South Greenfield WWTF
MSOP #: MO-0129747
Dade County**

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

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

Part I – Facility Information

Facility Type: POTW

Facility SIC Code(s): 4952

Facility Description: Septic tank/ recirculating sand filter/ ultraviolet disinfection/ sludge disposal by contract hauler

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.02785	Secondary	Domestic	0

Receiving Water Body’s Water Quality & Facility Performance History:

This is for a renewal.

Comments: The facility was last inspected on November 29, 2007. The conditions of the facility at the time of inspection were found to be satisfactory. A review of the DMRs indicated that the no samples were taken for the month of July 2008 due to the lab failed to collect the sample. The lab has assured that this incident will not be happening again. A phone conversation with Mr. Darrel Fite, operator, indicated that Mr. Fite is currently not holding an active certification. This means the Village does not have a certified operator to operate the wastewater treatment 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:

Check boxes below that are applicable to the facility;

- Population Equivalent greater than two hundred (200):
- Fifty (50) or more service connections:
- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County

- Public Water Supply Districts:
- Private sewer company regulated by the Public Service Commission:
- State or Federal agencies:

- Department required:
 The Department requires this facility to retain the services of a certified operator due to:

This facility currently requires an operator with a C Certification Level. Please see **Appendix A - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

- This facility does not currently retain an operator with the correct level of certification required to operate the wastewater treatment facility. Missouri Clean Water Law and its implementing regulation 10 CSR 20-9.020(2)(F) allows the department to develop a schedule of activities including the date by which compliance shall be obtained. This schedule of activities shall be established in this operating permit as a Schedule of Compliance.

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**
Limestone Creek	P		General Criteria, LWW, AQL, etc.	10290106	Ozark / Osage
Limestone Creek	P	1412	LWW, AQL, CLF, WBC-A		

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

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Limestone Creek	0.1	0.1	1.0

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
0.025	0.025	0.25	0.0025	0.0025	N/A

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

Not Applicable ;

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

ANTI-BACKSLIDING:

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

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

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

ANTIDegradation:

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

Not Applicable ;

Renewal no degradation proposed and no further review necessary.

APPLICABLE PERMIT PARAMETERS:

Effluent parameters for conventional, non-conventional, and toxic pollutants have been obtained from the previous NPDES operating permit for this facility, technology based effluent limits, and from appropriate sections of the renewal application.

Bio-solids, Sludge, & Sewage Sludge:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or

industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Not Applicable

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

COMPLIANCE AND ENFORCEMENT:

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

Not Applicable ;

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

PRETREATMENT PROGRAM:

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

Not Applicable ;

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

REASONABLE POTENTIAL ANALYSIS (RPA):

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

Not Applicable ;

A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (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.

Applicable ;

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

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

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

Not Applicable ;

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

Applicable ;

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

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

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

Not Applicable ;

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

Adjusted Design Flow:

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

- The facility has a valid permit, or has applied for re-issuance, is in compliance with the terms, conditions and effluent limitations of the permit, and the facility has a good compliance history; and
- Flow is not expected to exceed 60% of design flow for the remaining term of the existing operating permit.

Not Applicable ;

Municipalities, POTWs, and Industrials do not qualify for Adjusted Design flows.

Outfall #001 – Main Facility Outfall

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	S
BOD ₅	MG/L	1		45	30	NO	S
TSS	MG/L	1		45	30	NO	S
PH (S.U.)	SU	1	6-9		6-9	NO	S
AMMONIA AS N	MG/L	5, 3	13.2		5.0	N/A	NONE
FECAL COLIFORM	***	1	1000		400	NO	S
TEMPERATURE	°C	5	*		*	N/A	NONE
DISSOLVED OXYGEN	MG/L	1, 3, 11	*		*	N/A	NONE
OIL & GREASE	MG/L	3, 8	15		10	N/A	NONE
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.

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

N/A – Not applicable

S – Same as previous operating permit

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

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).

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

Total Suspended Solids (TSS).

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

pH.

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

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

Total Ammonia Nitrogen

Ammonia as N: Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.042 mg/L.

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

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

Summer

Acute

$$((Q_e + Q_s) \cdot C - (Q_s \cdot C_s)) / Q_e$$

$$((0.02785 + 0.0025) \cdot 12.1 - (0.0025 \cdot 0.042)) / 0.02785 = 13.18$$

$$LTA_a = 13.18 \text{ mg/L (0.321)} = 4.23 \text{ mg N/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

Chronic

$$((0.02785 + 0.25) \cdot 1.4 - (0.25 \cdot 0.042)) / 0.02785 = 13.59$$

$$LTA_c = 13.59 \text{ mg/L (0.780)} = 10.60 \text{ mg N/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

Acute is more protective

$$MDL = 4.23 \text{ mg/L} \cdot 3.11 = 13.2 \text{ mg N/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 4.23 \text{ mg/L} \cdot 1.19 = 5.03 \text{ mg N/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

Winter

Acute

$$((Q_e + Q_s) \cdot C - (Q_s \cdot C_s)) / Q_e$$

$$((0.02785 + 0.0025) \cdot 12.1 - (0.0025 \cdot 0.042)) / 0.02785 = 13.18$$

$$LTA_a = 13.18 \text{ mg/L (0.321)} = 4.23 \text{ mg N/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

Chronic

$$((0.02785 + 0.25) \cdot 3.1 - (0.25 \cdot 0.042)) / 0.02785 = 30.55$$

$$LTA_c = 30.55 \text{ mg/L (0.780)} = 23.82 \text{ mg N/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

Acute is more protective

$$MDL = 4.23 \text{ mg/L} \cdot 3.11 = 13.2 \text{ mg N/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 4.23 \text{ mg/L} \cdot 1.19 = 5.03 \text{ mg N/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

Season	Maximum Daily Limit (mg N/L)	Average Monthly Limit (mg N/L)
Oct 1 – March 31	13.2	5.0
April 1 – Sept 30	13.2	5.0

Same limit, year-round.

Fecal Coliform. Discharge shall not contain more than a monthly geometric mean of 400 colonies/100 mL and a daily maximum of 1000 colonies/100 mL, [10 CSR 20-7.015].

Future renewals / construction modifications of the facility operating permit will contain effluent limitations for E. coli, which will replace fecal coliform as the applicable bacteria criteria in Missouri's water quality standards

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

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	QUARTERLY	QUARTERLY
TEMPERATURE	QUARTERLY	QUARTERLY
AMMONIA AS N	QUARTERLY	QUARTERLY
FECAL COLIFORM	QUARTERLY	QUARTERLY
DISSOLVED OXYGEN	QUARTERLY	QUARTERLY
OIL & GREASE	QUARTERLY	QUARTERLY

Sampling Frequency Justification:

Review of the Discharge Monitoring Reports indicated this facility has been meeting the effluent limits. Thus, quarterly sampling frequency is adequate for this facility as per Appendix U of Missouri's Water Pollution Control Permit Manual and Southwest Regional Office's Policy.

Sampling Type Justification

Sand filters are not define in the regulations, and based on the small flow grab samples are appropriate.

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: 01/29/2010

Sieu T. Dang, P.E.
WP Permitting and Assistance Unit
(417) 891-4300
Sieu.dang@dnr.mo.gov

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	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		Raw wastes subject to toxic waste discharges	6	
More advanced determinations such as BOD seeding procedure, fecal coliform, nutrients, total oils, phenols, etc.	7		Screening and/or comminution	3	3
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10		Grit removal	3	
			Plant pumping of main flow (If 51% or greater flow comes into plant)	3	3
			PRIMARY TREATMENT		
			Primary clarifiers (Flow EQ basins)	5	
			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		3	TOTAL Page 1 Column B		14

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)	12	
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			31	<u>Sieu T. Dang</u> <u>01/28/2010</u>		
Level of Certification Required				<u>(Name)</u> <u>(Date)</u>		
D	C	B	A			
≤ 25	26 – 50	51 – 70	≥ 71			