

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-0093599

Owner: City of Wentzville
Address: 1001 Schroeder Creek Boulevard, Wentzville, MO 63385

Continuing Authority: Same as above
Address: Same as above

Facility Name: Wentzville Water Reclamation Center
Facility Address: 2455 Mette Road, Wentzville, MO 63385

Legal Description: See Page 2
UTM Coordinates: See Page 2

Receiving Stream: See Page 2
First Classified Stream and ID: See Page 2
USGS Basin & Sub-watershed No.: See Page 2

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

FACILITY DESCRIPTION

See Page 2

This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas.

June 1, 2020
Effective Date

February 1, 2023
Modification Date

March 31, 2024
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #003 – POTW

The use or operation of this facility shall be by or under the supervision of a Certified “A” Operator.

Influent wastewater enters the wastewater treatment plant via three influent lift stations / 2 mechanical bar screens / 1 manual bar screen / 2 aerated cyclone grit chamber / influent then enters the Influent Flow Splitter Structure, which splits the influent flow between the East Treatment Train and the West Treatment Train

East Treatment Train: Aerated equalization basin / 2 circular multi-zone activated sludge units with 3 integral final clarifiers

West Treatment Train: 2 rectangular multi-zone activated sludge basins / 2 final clarifiers

Effluent from the East Treatment Train and West Treatment Train is then rejoined and receives UV disinfection and then enters the post aeration basin prior to discharge at Outfall #003

Sludge from both treatment trains are pumped to the 4 aerobic sludge digesters / three sludge/biosolids holding tanks / frame and plate filter press / dewatered biosolids are stored on a covered concrete pad / biosolids are land applied

Design population equivalent is 61,824.

Design flow is 7.04 million gallons per day.

Actual flow is 4.3 million gallons per day.

Design sludge production is 1113 dry tons/year.

Legal Description:	Landgrant 00145, St. Charles County
UTM Coordinates:	X=684920, Y=4303833
Receiving Stream:	McCoy Creek (C)
First Classified Stream and ID:	McCoy Creek (C) (214)
USGS Basin & Sub-watershed No.:	(07110008-0408)

Permitted Feature INF – Influent Monitoring Location – Headworks

Legal Description:	Landgrant 00145, St. Charles County
UTM Coordinates:	X=684740, Y=4303618

Permitted Feature SM2 – Instream Monitoring – Downstream – bridge over McCoy Creek on Mette Road – See Special Condition #17

Legal Description:	Landgrant 00935, St. Charles County
UTM Coordinates:	X=685150, Y=4304226
Receiving Stream:	McCoy Creek (C)
First Classified Stream and ID:	McCoy Creek (C) (214)
USGS Basin & Sub-watershed No.:	(07110008-0408)

OUTFALL #003	TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
	The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations in Table A-3 shall become effective February 1, 2023 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
Limit Set: M						
Flow	MGD	*		*	once/weekday***	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		27	18	once/month	composite**
Total Suspended Solids	mg/L		41	27	once/month	composite**
<i>E. coli</i> (Note 1)	#/100mL		1,030	206	once/week	grab
Ammonia as N	mg/L					
(April 1 – Sept.30)		5.5		1.1	once/month	composite**
(Oct. 1 – March 31)		10.0		2.5	once/month	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
Copper, Total Recoverable	µg/L	24.4		12.2	once/month	composite**
Selenium, Total Recoverable	µg/L	6.2		3.1	once/month	composite**
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units****	SU	6.5		9.0	once/week	grab
EFFLUENT PARAMETER(S)			UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand ₅ – Percent Removal (Note 2)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (Note 2)			%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE **MARCH 28, 2023**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

*** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.

**** pH is measured in pH units and is not to be averaged.

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).

Note 2 – Influent sampling for BOD₅ and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent – Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and

dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: Q						
Oil & Grease	mg/L	*		*	once/quarter *****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2020</u> .						
Limit Set: SA						
Arsenic, Total Recoverable	µg/L	*		*	twice/year Φ	composite**
MONITORING REPORTS SHALL BE SUBMITTED TWICE PER YEAR ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2021</u> .						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

***** See table below for quarterly sampling requirements.

Quarterly Minimum Sampling Requirements			
Quarter	Months	Sampling Requirement	Report is Due
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

Φ See table below for twice per year sampling and reporting requirements.

Minimum Twice Per Year Minimum Sampling Requirements			
Period	Months	Sampling Requirement	Report is Due by
First Half of Year	January to June	Sample at least once during any month of the half year	July 28 th
Second Half of Year	July to December	Sample at least once during any month of the half year	January 28 th

OUTFALL #003	TABLE A-3. WHOLE EFFLUENT TOXICITY FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
	The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations in Table A-5 shall become effective on <u>June 1, 2020</u> 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
Limit Set: WC						
Chronic Whole Effluent Toxicity (Note 3)	TU _c	*			once/year	composite**
CHRONIC WET TEST REPORTS SHALL BE SUBMITTED ANNUALLY ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2021</u> .						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

Note 3 –The Chronic WET test shall be conducted once per year. See Special Condition #16 for additional requirements.

PERMITTED FEATURE <u>INF</u>	TABLE B-1. INFLUENT MONITORING REQUIREMENTS					
	The monitoring requirements in Table B-1 shall become effective on <u>June 1, 2020</u> and remain in effect until expiration of the permit. The influent wastewater shall be monitored by the permittee as specified below:					
PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: IM						
Biochemical Oxygen Demand ₅ (Note 2)	mg/L			*	once/month	composite**
Total Suspended Solids (Note 2)	mg/L			*	once/month	composite**
Ammonia as N	mg/L	*		*	once/month	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY ; THE FIRST REPORT IS DUE <u>JULY 28, 2020</u> .						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

Note 2 – Influent sampling for BOD₅ and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent – Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: DM						
Hardness, Total	mg/L	*			once/month	grab
pH – Units	SU	*			once/month	grab
Temperature	°C			*	once/month	measured
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY ; THE FIRST REPORT IS DUE JULY 28, 2020 .						

* Monitoring requirement only.

D. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and August 1, 2019, and hereby incorporated as though fully set forth herein. The permittee is required to conduct biosolids testing frequency in accordance with the monitoring frequency of Table E-1 below. Table E-1 supersedes the requirements in Standard Conditions Part III, Section J – Monitoring Frequency Table 5.

Biosolids or Sludge produced and disposed (Dry Tons per Year)	Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium	Nitrogen TKN, Nitrogen PAN ¹	Priority Pollutants ²
319 or less	1/year	1/month	1/permit cycle
320 to 1,650	4/year	1/month	1/permit cycle

- Calculate plant available nitrogen (PAN) when either of the following occurs:
 - when biosolids are greater than 50,000 mg/kg TN; or
 - when biosolids are land applied at an application rate greater than two dry tons per acre per year.
- Priority Pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pretreatment program.

† - Total Solids: A grab sample of biosolids shall be tested once per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of biosolids applied per acre.

Ω - This table is not applicable for incineration and permit holders that landfill their sludge/biosolids.

E. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program.
 - (a) eDMR Registration Requirements. The permittee must register with the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at <https://dnr.mo.gov/mogem>. Information about the eDMR system can be found at <https://dnr.mo.gov/env/wpp/edmr.htm>. The first user shall register as an Organization Official and the association to the facility must be approved by the Department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit unless a waiver is granted by the Department. See paragraph (c) below.
 - (b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <https://apps5.mo.gov/mogems/welcome.action>. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.
 - (c) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692>. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days.
2. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
 - (a) To 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 CWA, 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) To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.
3. All outfalls must be clearly marked in the field. This does not include instream monitoring locations.
4. Report as no-discharge when a discharge does not occur during the report period. For instream samples, report as "no flow" if no stream flow occurs during the report period.
5. Reporting of Non-Detects:
 - (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
 - (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
 - (c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
 - (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
 - (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
 - (f) When a parameter is not detected above ML, the permittee must report the data qualifier signifying less than ML for that parameter (e.g., < 50 µg/L, if the ML for the parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" for all non-detects for that reporting period and report the average of all the results.
6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

E. SPECIAL CONDITIONS (continued)

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. 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. To request a modification of the operational control testing requirements listed in 10 CSR 20-9, the permittee shall submit a permit modification application and fee to the Department requesting a deviation from the operational control monitoring requirements. Upon approval of the request, the Department will modify the permit.
8. Expanded Effluent Testing: Permittee must sample and analyze for the pollutants listed in Form B2 – Application for Operating Permit for Facilities That Receive Primarily Domestic Waste And Have A Design Flow More Than 100,000 Gallons Per Day (MO-780-1805), Part D – Expanded Effluent Testing Data, #18. The permittee shall provide this data with the permit renewal application. A minimum of three samples taken within four and one-half years prior to the date of the permit application must be provided. Samples must be representative of the seasonal variation in the discharge from each outfall. Approved and sufficiently sensitive testing methods listed in 40 CFR 136.3 must be utilized. 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 measured pollutant or pollutant parameter; or 2) the method minimum level is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or 3) the method has the lowest minimum level of the analytical methods approved under 40 CFR part 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established.
9. The permittee shall develop and implement a program for maintenance and repair of its collection system. The permittee may compare collection system performance results and other data with the benchmarks used in the Departments’ Capacity, Management, Operation, And Maintenance (CMOM) Model located at <https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template>. Additional information regarding the Departments’ CMOM Model is available at <https://dnr.mo.gov/print/document-search/pub2574>.

The permittee shall also submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually, by January 28th, for the previous calendar year. The report shall contain the following information:

- (a) A summary of the efforts to locate and eliminate specific sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
 - (b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
 - (c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.
10. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the St. Louis Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: <https://dnr.mo.gov/mogem/> or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.
 11. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
 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 to the treatment facility shall be maintained.
 14. The outfall sewer shall be protected and maintained against the effects of floodwater, ice, or other hazards as to reasonably insure its structural stability, freedom from stoppage, and 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.
 15. Sludge treatment, storage and disposal practices shall be conducted in accordance with Standard Conditions Part III.

E. SPECIAL CONDITIONS (continued)

16. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
- (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 7-day, static renewal toxicity tests with the following species:
 - o The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
 - (b) The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0). Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The laboratory shall not chemically dechlorinate the sample.
 - (e) The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
 - (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.
17. Receiving Water Monitoring Conditions
- (a) Samples should be taken at the location specified on Page 2 of this permit. In the event that a safe, accessible location is not present at the location listed, a suitable location can be negotiated with the Department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface if possible.
 - (b) When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) from where the sample was collected. These observations shall be submitted with the sample results.
 - (c) Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
 - (1) If turbidity in the stream increases notably; or
 - (2) If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hour.
 - (d) Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.
 - (e) To obtain accurate measurements, pH analyses should be performed on-site in the receiving stream where possible. However, due to high flow conditions, access, etc., it may be necessary to collect a sample in a bucket or other container. When this is necessary, care must be taken not to aerate the sample upon collection. If for any reason samples must be collected from an alternate site from the one listed in the permit, the permittee shall report the location with the sample results.
 - (f) Please contact the Department if you need additional instructions or assistance.

E. SPECIAL CONDITIONS (continued)

18. Pretreatment: The permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 10 CSR 20-6.100. The approved pretreatment program is hereby incorporated by reference.
- (a) The permittee shall submit to the Department via the Electronic Discharge Monitoring Report (eDMR) Submission System on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
- (1) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
 - (2) A summary of the status of Industrial User compliance over the reporting period;
 - (3) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
 - (4) Any other relevant information requested by the Department.
- (b) Pursuant to 40 CFR 122.44(j)(2)(ii), the permittee shall submit to the Department a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1) by **December 1, 2020**. Please contact the Department's pretreatment coordinator for further guidance. Should revision of local limits be deemed necessary, it is recommended that revisions follow the US Environmental Protection Agency's guidance document *Local Limits Development Guidance*. EPA833-R04-002A. July 2004
19. Stormwater Pollution Prevention Plan (SWPPP): A SWPPP must be developed and implemented within 180 days of the effective date of the permit. Through implementation of the SWPPP, the permittee shall minimize the release of pollutants in stormwater from the facility to the waters of the state. The SWPPP shall be developed in consultation with the concepts and methods described in the following document: 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 June 2015.
- (a) The SWPPP must identify any stormwater outfall from the facility and Best Management Practices (BMPs) used to prevent or reduce the discharge of contaminants in stormwater. The stormwater outfalls shall either be marked in the field or clearly marked on a map and maintained with the SWPPP.
- (b) The SWPPP must include a schedule and procedures for a once per month routine site inspection.
- (1) The monthly routine inspection shall be documented in a brief written report, which shall include:
 - i. The person(s) conducting the inspection.
 - ii. The inspection date and time.
 - iii. Weather information for the day of the inspection.
 - iv. Precipitation information for the entire period since the last inspection.
 - v. Description of the discharges observed, including visual quality of the discharges (sheen, turbid, etc.).
 - vi. Condition of BMPs
 - vii. If BMPs were replaced or repaired.
 - viii. Observations and evaluations of BMP effectiveness.
 - (2) Any deficiency observed during the routine inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
 - (3) The routine inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
 - (4) The routine inspection reports shall be made available to Department personnel upon request.

E. SPECIAL CONDITIONS (continued)

- (c) The SWPPP must include a schedule and procedures for a once per year comprehensive site inspection.
 - (1) The annual comprehensive inspection shall be documented in a written report, which shall include:
 - i. The person(s) conducting the inspection.
 - ii. The inspection date and time.
 - iii. Findings from the areas of your facility that were examined;
 - iv. All observations relating to the implementation of your control measures including:
 - 1. Previously unidentified discharges from the site,
 - 2. Previously unidentified pollutants in existing discharges,
 - 3. Evidence of, or the potential for, pollutants entering the drainage system;
 - 4. Evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, and
 - 5. Additional control measures needed to address any conditions requiring corrective action identified during the inspection.
 - v. Any required revisions to the SWPPP resulting from the inspection;
 - vi. Any incidence of noncompliance observed or a certification stating that the facility is in compliance with Special Condition F.19.
 - (2) Any deficiency observed during the comprehensive inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
 - (3) The comprehensive inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
 - (4) The comprehensive inspection reports shall be made available to Department personnel upon request.
 - (d) The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested.
 - (e) The SWPPP must be reviewed and updated at a minimum once per permit cycle, as site conditions or control measures change.
20. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP.
- (a) Permittee shall adhere to the following minimum Best Management Practices (BMPs):
 - (1) Minimize the exposure of industrial material storage areas, loading and unloading areas, dumpsters and other disposal areas, maintenance activities, and fueling operations to rain, snow, snowmelt, and runoff, by locating industrial materials and activities inside or protecting them with storm resistant coverings, if warranted and practicable.
 - (2) Provide good housekeeping practices on the site to prevent potential pollution sources from coming into contact with stormwater and provide collection facilities and arrange for proper disposal of waste products, including sludge.
 - (3) Implement a maintenance program to ensure that the structural control measures and industrial equipment is kept in good operating condition and to prevent or minimize leaks and other releases of pollutants.
 - (4) Prevent or minimize the spillage or leaks of fluids, oil, grease, fuel, etc. from equipment and vehicle maintenance, equipment and vehicle cleaning, or activities.
 - (5) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed.
 - (6) Provide stormwater runoff controls to divert, infiltrate, reuse, contain, or otherwise minimize pollutants in the stormwater discharge.
 - (7) Enclose or cover storage piles of salt or piles containing salt, used for deicing or other commercial or industrial purposes.
 - (8) Provide training to all employees who; work in areas where industrial materials or activities are exposed to stormwater, are responsible for stormwater inspections, are members of the Pollution Prevention Team. Training must cover the specific control measures and monitoring, inspection, planning, reporting and documentation requirements of this permit. Training is recommended annually for any applicable staff and whenever a new employee is hired who meets the description above.
 - (9) Eliminate and prevent unauthorized non-stormwater discharges at the facility.
 - (10) Minimize generation of dust and off-site tracking of raw, final, or waste materials by implementing appropriate control measures.

F. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC 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 AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: <https://ahc.mo.gov>

Missouri Department of Natural Resources
Factsheet Addendum
For Construction Permit/Modification
#MO-0093599
Wentzville Water Reclamation Center

This addendum gives pertinent information regarding minor/simple modification(s) to the above listed operating permit for a public comment process. An addendum is not an enforceable part of a Missouri State Operating Permit.

Part I – Proposed Construction

Construction is to increase the design flow to 7.04 MGD from 5.33 MGD, and to also enhance performance and improve operability. Improvements will enable facility to meet all final limits in the proposed permit. Construction includes the addition of an activated sludge aeration basin and improvements to the existing aeration basin #5 in the west treatment train; and the conversion of treatment unit #2 in the east train to be exclusively an aerobic sludge digester.

Facility Description:

Outfall #003 – POTW

Influent wastewater enters the wastewater treatment plant via three influent lift stations / 2 mechanical bar screens / 1 manual bar screen / 2 aerated cyclone grit chambers / influent then enters the Influent Flow Splitter Structure, which splits the influent flow between the East Treatment Train and the West Treatment Train

East Treatment Train: Aerated equalization basin / 2 circular multi-zone activated sludge units with integral final clarifiers

West Treatment Train: 2 rectangular multi-zone activated sludge basins / 2 final clarifiers

Effluent from the East Treatment Train and West Treatment Train is then rejoined and receives UV disinfection and then enters the post aeration basin prior to discharge at Outfall #003

Sludge from both treatment trains are pumped to the 4 aerobic sludge digesters / three sludge/biosolids holding tanks / frame and plate filter press / dewatered biosolids are stored on a covered concrete pad / biosolids are land applied

Design population equivalent is 61,824.
Design flow is 7.04 million gallons per day.
Actual flow is 4.3 million gallons per day.
Design sludge production is 1113 dry tons/year.

Part II – Reason for the Modification

This operating permit is hereby modified to change the facility description to reflect upgrades. Design flow changes to 7.04 MGD. The population equivalent changes to 61,824, based on one PE for every 0.17 lb of BOD treated/day. Design sludge production is based on an estimated production of 0.018 dry tons of sludge/PE/year.

Permit limits are taken from the WQAR approved 12/13/18 and updated 12/16/20.

Selenium limits are based on the permit renewed on 6/1/20 and a no-degradation approach with the flow increase.

The Schedule of Compliance to meet final limits for Selenium was removed.

Special condition related to reporting through the Department's electronic discharge reporting system has been updated to reflect the new system.

A Section was added to inform of Permit Appeal rights.

Part III – Operator Certification Requirements

- This facility is required to have a certified operator.

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 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

This facility currently requires an operator with an A Certification Level. The required certification level of A will still be required after the proposed upgrade to 7.04 MGD. There will be a 2 point increase from 81 points to 83 points due to the increase in design flow and design PE.

Operator's Name: Daniel D. Todd
Certification Number: 5528
Certification Level: WW-A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

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

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(o); 40 CFR Part 122.44(l)] 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(3)], 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.

- This permit contains new and/or expanded discharge; please see **APPENDIX FOR ANTIDegradation ANALYSIS**.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. Each facility must make a request. If a single entity owns or operates more than one facility, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

- The permittee/facility is currently using the eDMR data reporting system.

NUMERIC LAKE NUTRIENT CRITERIA

- This facility does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

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.

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

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes 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. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

- This permit does not contain a SOC. This modification removes the SOC as the upgrade will allow the facility to meet final effluent limits for Total Recoverable Selenium.

Part V – Effluent Limits Determination

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

Table contains only those parameters that are changing

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
BOD ₅	mg/L	1, 4		27	18	30/20	1/month	monthly	C
TSS	mg/L	1, 4		41	27	45/30	1/month	monthly	C
Ammonia as N - April	mg/L	2, 3, 4	5.5		1.1	12.1/3.1	1/week	monthly	C
Ammonia as N - May	mg/L	2, 3, 4	5.5		1.1	12.1/2.3	1/week	monthly	C
Ammonia as N - June	mg/L	2, 3, 4	5.5		1.1	12.1/1.8	1/week	monthly	C
Ammonia as N - July	mg/L	2, 3, 4	5.5		1.1	12.1/1.5	1/week	monthly	C
Ammonia as N - August	mg/L	2, 3, 4	5.5		1.1	12.1/1.6	1/week	monthly	C
Ammonia as N - September	mg/L	2, 3, 4	5.5		1.1	12.1/1.9	1/week	monthly	C
Ammonia as N - October	mg/L	2, 3, 4	10		2.5	12.1/2.8	1/week	monthly	C
Ammonia as N - November	mg/L	2, 3, 4	10		2.5	12.1/3.1	1/week	monthly	C
Ammonia as N - December	mg/L	2, 3, 4	10		2.5	12.1/31	1/week	monthly	C
Ammonia as N - January	mg/L	2, 3, 4	10		2.5	12.1/3.1	1/week	monthly	C
Ammonia as N - February	mg/L	2, 3, 4	10		2.5	12.1/3.1	1/week	monthly	C

Ammonia as N - March	mg/L	2, 3, 4	10		2.5	12.1/3.1	1/week	monthly	C
Copper, Total Recoverable	µg/L	2, 3, 4	24.4		12.2	26.3/14.3	1/month	monthly	C
Selenium, Total Recoverable	µg/L	2, 3, 5	6.2		3.1	8.2/4.1	1/month	monthly	C

* - Monitoring requirement only.
 ** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
 *** - Parameter not previously established in previous state operating permit.

**** - C = 24-hour composite
 G = Grab
 T = 24-hr. total
 E = 24-hr. estimate
 M = Measured/Calculated

Basis for Limitations Codes:

- | | | |
|--|-----------------------------------|---|
| 1. State or Federal Regulation/Law | 5. Antidegradation Policy | 9. WET Test Policy |
| 2. Water Quality Standard (includes RPA) | 6. Water Quality Model | 10. Multiple Discharger Variance |
| 3. Water Quality Based Effluent Limits | 7. Best Professional Judgment | 11. Nutrient Criteria Implementation Plan |
| 4. Antidegradation Review | 8. TMDL or Permit in lieu of TMDL | |

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 established by the Water Quality and Antidegradation Review Preliminary Determination issued on December 16, 2020. The WQAR is attached in the Appendix of this Fact Sheet.
- **Total Suspended Solids (TSS).** Effluent limitations have been established by the Water Quality and Antidegradation Review Preliminary Determination issued on December 16, 2020. The WQAR is attached in the Appendix of this Fact Sheet.
- **Total Ammonia Nitrogen.** Effluent limitations have been established by the Water Quality and Antidegradation Review Preliminary Determination issued on December 16, 2020.
- **Total Recoverable Copper.** Effluent limitations have been established by the Water Quality and Antidegradation Review Preliminary Determination issued on December 16, 2020.
- **Total Recoverable Selenium.** At permit renewal the following limits were established:

Protection of Aquatic Life Chronic Criteria = 5 µg/L.

Chronic WLA: $C_e = ((8.277 + 0.0) * 5 - (0.0 * 0.0)) \div 8.277 = 5 \mu\text{g/L}$

LTA_c: $5 (0.5274) = 2.637 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

MDL: $2.637 (3.11) = 8.2 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

AML: $2.637 (1.55) = 4.1 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

The design flow was 5.34 MGD. For a no degradation establishment of limits the following calculation was performed. Existing flow 5.34 MGD, proposed flow 7.04 MGD. $5.34/7.04 = 0.759$. Both limits will be reduced by using a factor of 0.76.

MDL: $8.2 \mu\text{g/L} (0.76) = 6.2 \mu\text{g/L}$

AML: $4.1 \mu\text{g/L} (0.76) = 3.1 \mu\text{g/L}$

Part VI – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

- ✓ The Department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

Part VII – 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.

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 that 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 February 5, 2021 to March 8, 2021. No responses received.

DATE OF ADDENDUM: DECEMBER 29, 2020

Updates for issuance of modification: January 20, 2023

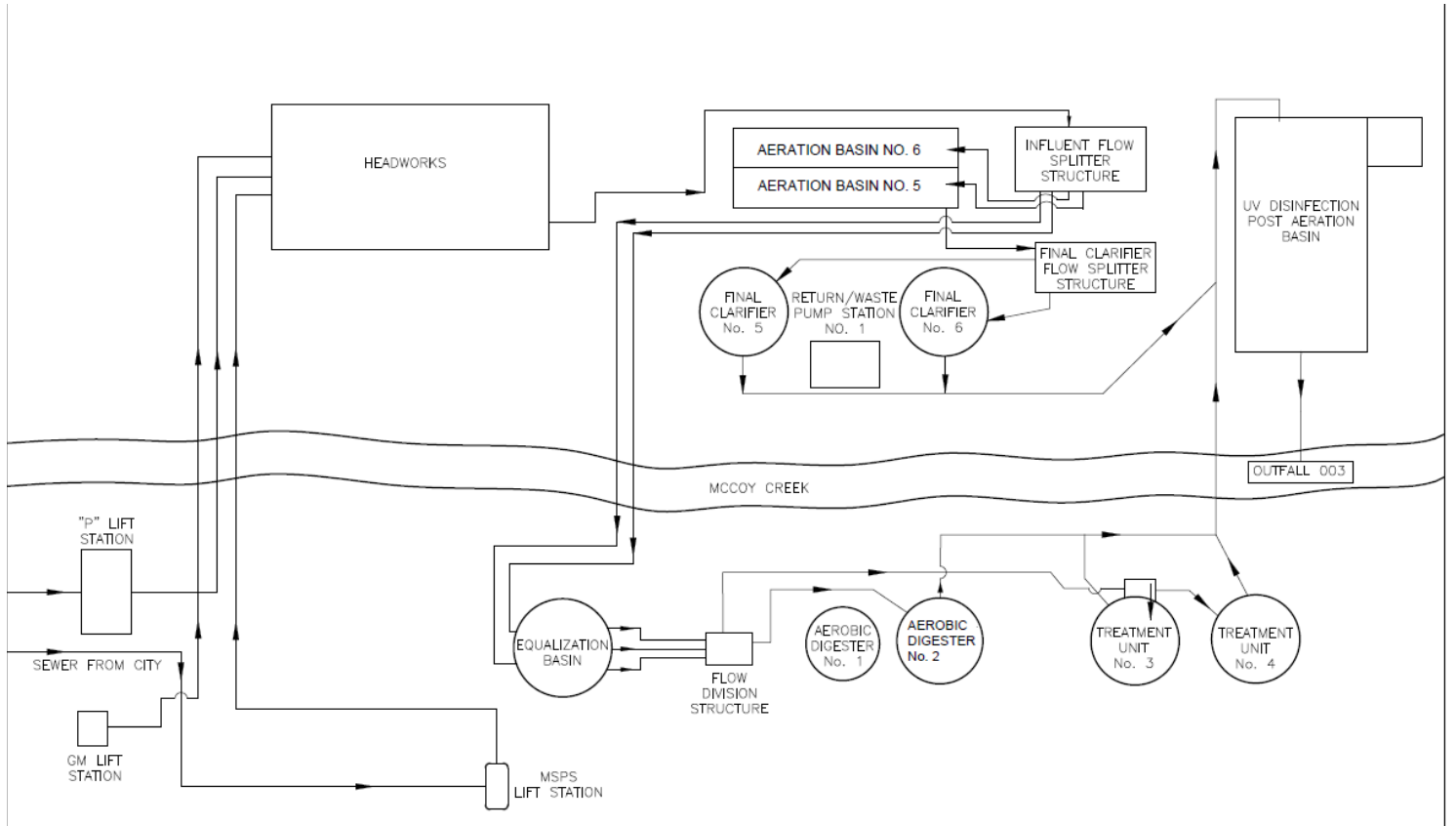
COMPLETED BY:

ANDREW APPELBAUM, P.E., ENVIRONMENTAL ENGINEER
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
ENGINEERING SECTION
314-416-2062
ANDY.APPELBAUM@DNR.MO.GOV

APPENDIX –MAP/PROCESS FLOW DIAGRAM

APPENDIX –ANTIDegradation

APPENDIX –MAP/PROCESS FLOW DIAGRAM



APPENDIX – ANTIDegradation



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

December 16, 2020

City of Wentzville
310 West Pearce Boulevard
Wentzville, MO 63385

RE: Water Quality and Antidegradation Review Preliminary Determination for Wentzville Water Reclamation Center WWTF, St. Charles County

Dear Susan Spiegel:

In accordance with the *Missouri Antidegradation Rule and Implementation Procedure (AIP)*, your proposed discharge is subject to an Antidegradation Review. The revised *Water Quality and Antidegradation Review (WQAR)* summarizes this preliminary determination based upon your City of Wentzville, Missouri Water Reclamation Center Antidegradation Review Report dated July, 2018, which proposed to increase the facility's design flow to 7.04 MGD. The revision reflects new methods for calculating copper limits according to Missouri's recently revised Water Quality Standards and allows for slightly higher copper effluent concentrations.

The WQAR contains pertinent antidegradation review information based on the use of existing water quality, effluent limitations and monitoring requirements for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure (AIP)* dated July 13, 2016, U.S. Environmental Protection Agency (US EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources (Department) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4. The WQAR would also allow you to pursue construction of one of the other approved reasonable alternatives without the need to modify this Antidegradation review.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, an engineering report, or a facility plan. These submittals must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited. To reduce cost and time spent scanning permit applications, plans, and specification, the Water Protection Program's Engineering



Section has begun asking for electronic copies of submitted documents in addition to paper copies. While it is not currently a requirement, submittal of electronic documents on a compact disc or other removable electronic media is being proposed in the new rulemaking for 10 CSR 20-6.010.

Following the Department's public notice of draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the Department will review any public notice comments received. If significant comments are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final.

Following issuance of the construction permit and completion of the actual facility construction, the Department will proceed with the issuance of the operating permit.

Some projects are eligible for funding through the Department's Clean Water State Revolving Fund (CWSRF) Program. Applications for funding and guidance documents can be found at <https://dnr.mo.gov/env/wpp/srf/wastewater-project-guidance.htm>. Project eligibility determinations are made, in accordance with 10 CSR 20-4.040. Projects that are eligible for funding are listed on the Intended Use Plan, provided additional CWSRF requirements are met, including but not limited to environmental review requirements, public hearing requirements, user charge requirements and approval of construction plans and specifications. For questions related to the CWSRF Program, please contact Joan Doerhoff, Financial Assistance Center Coordinator Unit Chief, at 573-526-0940.

If you should have questions, please feel free to contact Steve Hamm by telephone at 573-526-1002, by email at steven.hamm@dnr.mo.gov, or by mail at P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM



Cindy LePage, P.E., Chief
Engineering Section

Enclosures

CL:sht

c: David Carani, HDR, Inc.

Water Quality and Antidegradation Review

*For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
McCoy Creek*

by
Wentzville Wastewater Treatment Facility



December, 2020

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1. FACILITY INFORMATION

FACILITY NAME: Wentzville Water Reclamation Center NPDES #: MO-0093599

FACILITY TYPE/DESCRIPTION:

FACILITY TYPE: POTW

FACILITY DESCRIPTION: The current permitted design flow is 6.4 MGD. The facility currently has peak flow equalization, screens and grit removal, extended aeration, and clarifiers. The proposed design flow will be 7.04 MGD.

COUNTY: St. Charles UTM COORDINATES: X= 684925 / Y= 4303837
 12- DIGIT HUC: 07110008-0408 LEGAL DESCRIPTION: Landgrant 145
 EDU*: Central Plains Ecoregion: Mississippi Hills River

* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (Department) 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, and revised July 13, 2016, a facility is required to use *Missouri’s Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

McCoy Creek was on the 2016 Missouri 303 (d) List for dissolved oxygen; however, McCoy Creek has been delisted since the 2018 Missouri 303 (d) List. Within the past five years, the facility has only had a single permit exceedance in January 2019 for total suspended solids.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	9.92	Secondary	McCoy Creek	Directly Discharges

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
McCoy Creek	C	214	0.0	0.0	0.0	AQL, HHP, IRR, LWW, SCR, WBCB

** Irrigation (IRR), Livestock & Wildlife Protection (LWP), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

RECEIVING WATER BODY SEGMENT #1: McCoy Creek
 Upper end segment* UTM coordinates: X= 684925/ Y= 4303837 (outfall)
 Lower end segment* UTM coordinates: X= 685460/ Y= 4304693 (confluence with tributary)

* 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

HDR Engineering, prepared, on behalf of Wentzville, the *Wentzville Wastewater Facility Antidegradation Review Report* dated July 2018.

Applicant elected to determine that discharge of all pollutants of concern (POC) is non-degrading or insignificant to the receiving stream. This analysis was conducted to fulfill the requirements of the AIP. 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 Geohydrological Evaluation was not submitted for this facility upgrade. The stream is gaining for discharge purposes (Appendix A: Map).

A Missouri Department of Conservation Natural Heritage Review Report was obtained by the applicant; MDC found no record of wildlife preserves, critical habitats, or state or federal endangered-list species records within one mile of the site.

5. ANTIDEGRADATION REVIEW INFORMATION

The following is a review of the *Wentzville Wastewater Facility Antidegradation Review Report* dated July 2018.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix C). 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 is assumed for all POCs; however, tier determinations were not necessary with maintenance of mass loading determinations (see Appendix C).

Table 1. Pollutants of Concern and Tier Determination

POLLUTANTS OF CONCERN	TIER*	DEGRADATION	COMMENT
BOD ₅ /DO	*	Insignificant	
Total Suspended Solids (TSS)	**	Insignificant	
Ammonia as N	*	Insignificant	
pH	***	Insignificant	Permit limits applied
Oil & Grease	*	Insignificant	
Copper, Total Recoverable	*	Insignificant	
Bacteria/ <i>Escherichia coli</i> (<i>E. coli</i>)	*	Insignificant	Permit limits applied

* Tier determination not possible with the demonstration of mass loading maintenance.

** 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:

For pollutants of concern, the attachments are:

Attachment B, Tier 2 with minimal degradation.

5.2. EXISTING WATER QUALITY

No existing water quality data was submitted. POCs were considered to be Tier 2 or non-degrading in the absence of existing water quality.

5.3. NO DISCHARGE EVALUATION

According to 10 CSR 20-6.010 (4)(A)5.B., reports for the purpose of constructing a wastewater treatment facility shall consider the feasibility of constructing and operating a no discharge facility. Missouri’s antidegradation implementation procedures specify that if the proposed activity does not result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are not required.

The Antidegradation Review Report prepared for Wentzville Water Reclamation Center describes a no discharge evaluation as a non-degrading alternative. Land irrigation is presented as infeasible due to site limitations including land application availability, water storage availability, and soil conditions. This alternative is estimated to cost above \$91.5 million.

5.4. LOSING STREAM ALTERATIVE DISCHARGE LOCATION

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

The facility does not discharge to a losing stream segment or will not discharge within 2 miles of a losing stream segment.

5.5. DEMONSTRATION OF INSIGNIFICANCE

In Section II.A of the *Missouri’s Antidegradation Rule and Implementation Procedure*, a demonstration of insignificance of the discharge requires the applicant to show a reduction, or maintenance of loading, i.e., no change in ambient water quality concentrations in the receiving waters. As demonstrated in *Wentzville Wastewater Facility Antidegradation Review Report* dated July, 2018, Table 2 below summarizes the results of current loading based on the current permit concentrations and proposed loadings based on the proposed permit concentrations.

Table 2. Net Change in Loadings Based upon Current and Proposed Permit Limits.

POLLUTANTS OF CONCERN	CURRENT WEEKLY AVERAGE OR MAXIMUM DAILY LIMIT (MG/L)	PROPOSED MAXIMUM DAILY LIMIT (NOTE 1) (MG/L)	CURRENT LOADING (LBS/DAY)	PROPOSED LOADING (LBS/DAY)	NET CHANGE (LBS/DAY)
BOD ₅	30	27	1601.3	1601.3	0
Total Suspended Solids (TSS)	45	41	2401.9	2401.9	0
Ammonia (Summer)	6	5.5	320.3	320.3	0
Ammonia (Winter)	11	10	587.1	587.1	0
Copper	0.0268	0.0244	1.43	1.43	0

* WQBEL=water quality based effluent limit.

** See Derivation and Discussion of Limits, Section 10.

*** Value is in the current permit, rather than the expired permit. AWL = average weekly limit.

Note 1—Except for TSS and BOD, the proposed effluent limits that were provided by applicant were determined by using the *ratio of current flow (6.4 MGD) to proposed design flow or 0.9; thus 90% of the current limit is applied as the proposed limit.*

Current design flow (Qd) = 5.25 MGD

Mass conversion -- 1 mg/L = 8.34 lbs/million gallons

Wasteload Allocation (WLA) = maximum daily or weekly average

Existing Load (lbs/day) = Mass conversion * WLA * Qd

Example: 8.34 (lbs/MG)/(mg/L) * 1 mg/L * 5.25 MGD = 43.8 lbs/day

5.6. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri’s antidegradation implementation procedures specify that if the proposed activity does not result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are not required. Thus, the Tier 2 Review is not required.

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(2) Continuing Authorities and 10 CSR 20-6.010(4)(A)5.B., 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

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

Zone of Initial Dilution (ZID): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)]

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION N USE ATTAINABILITY N WHOLE BODY CONTACT Y
 STUDY CONDUCTED (Y OR N): ANALYSIS CONDUCTED (Y OR N): USE RETAINED (Y OR N):

OUTFALL #001

WET TEST (Y OR N): N FREQUENCY: _____ AEC: _____ METHOD: MULTIPLE

TABLE 3. EFFLUENT LIMITS FOR OUTFALL #001

PARAMETER	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	BASIS FOR LIMIT (NOTE 2)	MONITORING FREQUENCY
FLOW	MGD	*		*	FSR	ONCE/WEEKDAY
BOD ₅ ***	MG/L		27	18	NDEL	ONCE/MONTH
TSS	MG/L		41	27	NDEL	ONCE/MONTH
pH	SU	6.5 – 9.0		6.5 – 9.0	FSR	ONCE/MONTH
AMMONIA AS N (APRIL 1 – SEPT 30)	MG/L	5.5		1.1	NDEL	ONCE/MONTH
AMMONIA AS N (OCT 1 – MAR 31)	MG/L	10		2.5	NDEL	ONCE/MONTH
<i>ESCHERICHIA COLIFORM (E. COLI)</i>	NOTE 1	1030**		206**	FSR	ONCE/WEEK

COPPER, TOTAL RECOVERABLE	µg/L	24.4		12.2	NDEL	ONCE/QUARTER
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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; OR TECHNOLOGY-BASED EFFLUENT LIMIT – TBEL; OR NO DEGRADATION EFFLUENT LIMIT – NDEL; OR FEDERAL/STATE REGULATION – FSR; OR NOT APPLICABLE – N/A. ALSO, PLEASE SEE THE **GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.**

- * Monitoring requirements only.
- ** The Monthly and Weekly Average for *E. coli* shall be reported 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).
- *** 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:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)} \quad \text{(EPA/505/2-90-001, Section 4.5.5)}$$

- 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).

Chronic wasteload allocations (WLA_c) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and upstream stream flow without mixing considerations. Acute wasteload allocations are only determined in the absence of applicable chronic criteria.

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).** BOD₅ limits of 18 mg/L monthly average, 27 mg/L average weekly. The technology-based secondary limitations at 10 CSR 20-7.015 (8) of 30 mg/L monthly and 45 mg/L average weekly are less protective of water quality standards than the no degradation expansion limitations in the table below. The

table below shows that the expanded loading will be reduced as compared to the current permitted loading. This demonstration of insignificance satisfies the requirements of the AIP. These limitations are non-degrading and protective of existing water quality.

Parameter	Limit	WLA (mg/L)	Current Q _a (MGD)	Current Load (lbs/day)	Expanded Q _a (MGD)	Expansion limit (mg/L)
BOD ₅	Monthly	20	6.4	1067.5	7.04	18
	Weekly	30	6.4	1601.3	7.04	27

The applicant submitted a DO model that was revised by WPP staff. Staff used site-specific DO as input to the Streeter Phelps model. Staff also used 1 mg/L as DO in the effluent. For that reason, a dissolved oxygen limitation for the effluent will not be imposed.

Using the weekly expansion limitation stated above, modeling in Appendix B demonstrated that BOD₅ effluent is protective of water quality standards for DO. Streeter Phelps modeling indicated a dissolved oxygen of 5.02 mg/L for the facility, which was the lowest DO concentration resulting from BOD decay (see Appendix B). There is a demonstrated reduction in loading in the above table; therefore, no analysis is needed to show that the proposed expanded loading is insignificant because existing water quality should improve with the proposed discharge. Therefore, staff considers the effluent limitations of 27 mg/L as the average weekly and 18 mg/L as the monthly average protective of aquatic life.

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** 41 mg/L monthly average, 27 mg/L average weekly limit. The technology-based secondary limitations at 10 CSR 20-7.015 (8) of 30 mg/L monthly and 45 mg/L average weekly are less protective of water quality standards than the no degradation expansion limitations in the table below. Therefore, the no degradation limitations must be applied.

Parameter	Limit	WLA (mg/L)	Current Q _d (MGD)	Current Load (lbs/day)	Expanded Q _d (MGD)	Expansion limit (mg/L)
TSS	Monthly	30	6.4	1601.3	7.04	27
	Weekly	45	6.4	2401.9	7.04	41

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **pH.** – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

No degradation Limitation Calculations

The following tables are presented because the facility was recently renewed with lower ammonia limitations, and secondly, to give the applicant-provided antidegradation review loading calculations consideration. The limitations are more stringent and use correct low flow values.

Parameter	Limit	WLA (mg/L)	Current Qd (MGD)	Current Load (lbs/day)	Expanded Qd (MGD)	Expansion limit (mg/L)
Ammonia Summer	Monthly	1.2	6.4	64.1	7.04	1.1
	Daily	6	6.4	320.3	7.04	5.5
Ammonia Winter	Monthly	2.7	6.4	144.1	7.04	2.5
	Daily	11	6.4	587.1	7.04	10

No Degradation Expansion Limitations

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	5.5	1.1
Winter	10	2.5

Classified Streams: 10 CSR 20-7.015 (9)(B)1.A.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Daily Maximum of 1030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d).

Rule for monitoring requirements is 10 CSR 20-7.015 (9)(D)6.A, B and C

For facilities greater than 100,000 gpd: At a minimum, weekly monitoring is required 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). Please see **GENERAL ASSUMPTIONS OF THE WQAR #7**.

Weekly monitoring is required at all times with compliance to be determined by *E. coli* water quality standards established in section (5)(C.) of 10 CSR 7.031 and the effluent rule short time limits in 7.015 (9)(B)1.E. Please see **GENERAL ASSUMPTIONS OF THE WQAR #7**.

Hardness Dependent Metals:

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 200 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

Parameter	Limit	WLA (µg/L)	Current Qd MGD	Current Load (lbs/day)	Expanded Qd MGD	Expansion limit (µg/L)
Copper	Monthly	13.4	6.4	0.715	7.04	12.2
	Daily	26.8	6.4	1.43	7.04	24.4

Note: Future reasonable potential analysis should use the above limitation as comparison to the receiving water concentration rather than water quality standards. This process prevents further degradation of a Tier 2 water body.

- **Copper (Total Recoverable)** Protection of Aquatic Life Acute Criteria = 24.4 µg/L, Chronic Criteria = 12.2 µg/L. The hardness value of 200 mg/L represents the 50th percentile (median) for McCoy Creek. In the above table, the non-degrading effluent limitation for the expanded design flow for copper is shown.

11. ANTIDegradation Review Preliminary Determination

The proposed facility discharge will result in no degradation of the segment identified in the McCoy Creek. Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to retain the remaining assimilative capacity. The Department has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Steven Hamm, P.E.

Date: December 14, 2020

Unit Chief: John Rustige, P.E.

Appendix A: Map of Discharge Location



Appendix B: Dissolved Oxygen Modeling using Streeter Phelps

Part 1: Analysis Documentation

Permit Applicant: City of Wentzville

Analysis Date: 6/1/2018 Permit Number: MO-0093599

Analysis Performed By: HDR Engineering, Inc.

Part 2: Facility Discharge Information

County: St. Charles Latitude: Longitude:

Effluent Characteristics

Variable	Unit	Value	Suggested Value & Comments
Flow	MGD	<u>7.04</u>	Facility Design Average Flow
CBOD ₅	[mg/L]	<u>25</u>	Adjust to meet D.O. criteria
NH ₃ -N	[mg/L]	<u>1.4</u>	Equal to or less than toxicity-based ammonia WLA. Adjust to meet D.O.
TSS	[mg/L]	<u>20</u>	Adjust to meet D.O. criteria
D.O.	[mg/L]	<u>6</u>	Adjust to meet D.O. criteria
pH	S.U.	<u>7.8</u>	Use median from DMR data if available, otherwise assume 7.8 S.U.
Temperature	°C	<u>26</u>	Default - 20 °C for summer allocations, 6 °C winter allocations

Part 3: Receiving Stream Information

Name: McCoy Creek Class: C Watershed Area (mi²): 26

WBID: 214 Type: Rifle-Pool Aquatic Life Use Designation: GWWF

Upstream Conditions				Upstream Facilities		
Variable	Unit	Value	Default Value	Permit ID	Design Flow Units	Value
Streamflow	ft ³ sec ⁻¹	<u>0.00</u>	---		MGD	
CBOD ₅	[mg/L]	<u>1</u>	1		MGD	
NH ₃ -N	[mg/L]	<u>0.05</u>	0.05		MGD	
VSS	[mg/L]	<u>2</u>	2		MGD	
D.O.	[mg/L]	<u>5</u>	5		MGD	
pH	S.U.	<u>7.8</u>	7.8		MGD	
Temperature	°C	<u>26</u>	26°C		MGD	

Water Quality Criteria of Receiving Stream				Hydrogeometry & Transport		
Criteria	Unit	Value	Type	Variable	Unit	Value
D.O.	[mg/L]	5.0	Chronic	Slope	ft/ft	<u>0.0021</u>
NH ₃ -N	[mg/L]	1.5	Chronic - BLP	Elevation	ft ASL	<u>480</u>
NH ₃ -N	[mg/L]	12.1	Acute	Velocity	ft. sec ⁻¹	<u>0.290</u>
				Velocity Default	ft. sec ⁻¹	0.288
				Width	ft.	<u>17.3</u>
				Width Default	ft.	17.3
				Depth	ft.	<u>2.2</u>
				Depth Default	ft.	2.2

Mixing Zone and Critical Flows			
Flow	Unit	Value	Default Value
7Q10	ft ³ sec ⁻¹	<u>0</u>	0.00
D.O. Mixg Zone	ft ³ sec ⁻¹	<u>0.00</u>	26% Upstream Flow

Part 4: Model Parameters and Rate Constants						
Stoichiometry of Organic Matter				Model Output Control		
Carbon	_____	40	gC	Model Length (mi): <u>5</u>		
Nitrogen	_____	7.2	gN	Output Resolution (mi): <u>0.15</u>		
Dry Weight -OM	_____	100	gD			
Global Rates						
Rate	Unit	Value at 20°C	Value at Simulated Temperature	Theta	Uncalibrated Value	Comments
CBOD _U :CBOD ₅	mgU:mg5-day	1.5	----	----	2.8	Varies between 1.6 to 4.
Effluent VSS:TSS	mgVSS:mgTSS	0.85	----	----	0.85	Generally greater than 70%
CBOD Oxidation	day ⁻¹	0.55	0.72	1.05	0.53	Varies between 0.7 to 4
NBOD Oxidation	day ⁻¹	0.3	0.48	1.08	0.3	
SOD	gO ₂ m ² day ⁻¹	0.2	0.3	1.07	4.9	Varies between 0.2 and 9
SOD Coverage	%	25%	----	----	25%	Varies between 0% to 100%
Respiration Rate	day ⁻¹	7.6	8.8	1.02	7.6	See Welch and Flores (1999)
Mass Balance at Point of Mixing						
Variable	Unit	Value				
Streamflow	ft ³ sec ⁻¹	10.91				
CBOD ₅	[mg/L]	25.0				
CBOD _U	[mg/L]	37.5				
NH ₃ -N	[mg/L]	1.4				
VSS (Detritus)	[mg/L]	17.0				
D.O.	[mg/L]	6.0				
D.O. Saturation	[mg/L]	7.95				
D.O. Deficit	[mg/L]	1.96				
pH	S.U.	7.8				
Temperature	°C	20.0				
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> RUN Streeter-Phelps </div>						
Minimum D.O. [mg/L]: <u>5.0</u>						

The attachments that follow contain summary information provided by the applicant. Department staff determined that changes must be made to the information contained within these attachments. The following were modified and can be found within the Department's WQAR:

1) Attachment A: Antidegradation Application.

 MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM WATER QUALITY REVIEW ASSISTANCE/ ANTIDEGRADATION REVIEW REQUEST PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS		For Office Use Only CHECK NUMBER DATE RECEIVED FEE SUBMITTED	
TYPE OF PROJECT <input type="checkbox"/> Grant <input type="checkbox"/> SRF Loan <input checked="" type="checkbox"/> All Other Projects			
REQUESTER Susan Spiegel		TELEPHONE NUMBER WITH AREA CODE (636) 639-2049	
PERMITTEE / FACILITY NAME City of Wentzville Water Reclamation Center		MSOP NUMBER (IF APPLICABLE) 0093599	
COUNTY St. Charles		SIC / NAICS CODE 4952	
REASON FOR REQUEST <input type="checkbox"/> New Discharge (See Instruction #8) <input type="checkbox"/> Upgrade (No expansion) (See AIP) <input checked="" type="checkbox"/> Expansion <input type="checkbox"/> QAPP or Study Review			
DESCRIPTION OF PROPOSED ACTIVITY The City of Wentzville (City) is evaluating potential alternatives for upgrading and expanding their Water Reclamation Center (WRC, MO-0093599) to address recent and anticipated growth in the area. The City's current permitted flow of 6.4 million gallons per day (MGD) is based on a maximum monthly flow, with the Plant's current maximum month to average day ratio this equates to an actual average day capacity of 5.34 MGD. Based on current population growth projections, the City anticipates expanding to a design average flow of 8.98 MGD by the year 2032. The City is planning that expansion in phases, and expects to complete the initial expansion phase to 7.04 MGD by the year 2020.			
FACILITY INFORMATION 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 identified			
*Water quality issues include: effluent limit compliance issues, notices of violation, water body beneficial uses not attained or supported, etc.			
OUTFALL	LOCATION (UTM OR LAT/LONG OR LEGAL DESCRIPTION)	MAPPED ¹ (CHECK)	RECEIVING WATER BODY ²
001	684925, 4303837	<input checked="" type="checkbox"/>	McCoy Creek
¹ Please attach topographic map (See: www.dnr.mo.gov/internetmapviewer/) with outfall locations clearly marked. For additional outfalls, attach a separate form. ² Please see general instructions for discharges to streams.			
OUTFALL	NEW DESIGN FLOW ** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
001	7.04	Activated Sludge	Domestic WW
* Describe predominating character of effluent. Example: Domestic Wastewater, Municipal Wastewater, Industrial Wastewater, Storm water, Mining Leachate, etc. ** If expansion, indicate new design flow.			
See General Instructions. Additional information may be needed to complete your request. Your request may be returned if items are missing. The water quality review assistance is a process to determine effluent limits for new facilities or existing facilities seeking to increase loading into the receiving stream.			
SIGNATURE <i>Susan Spiegel</i>		DATE 7/6/18	
PRINT NAME Susan Spiegel		EMAIL ADDRESS susan.spiegel@wentzvillemo.org	
Applicant supplied (check all that apply): <input checked="" type="checkbox"/> Fee. See Instructions <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 <input checked="" type="checkbox"/> Heritage Review Determination. See Instruction #8. <input type="checkbox"/> Geohydrologic Evaluation. See Instruction #9. <input type="checkbox"/> Tier Analysis for minimal degradation (see Page 3, Tier 2 Reviews). <input type="checkbox"/> Quality Assurance Project Plan. <input type="checkbox"/> Time of travel study (see Instruction #3) or model (see Instruction #2).		TELEPHONE NUMBER WITH AREA CODE (636) 639-2049 Submit request to: Missouri Department of Natural Resources, Water Protection Program, ATTN: WPCB Engineering Section P.O. Box 176 Jefferson City, MO 65102-0176 Telephone: 573-751-1300 Fax: 573-522-9920	



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

1. FACILITY			
NAME Wentzville Water Reclamation Center		TELEPHONE NUMBER WITH AREA CODE (636) 639-2071	
ADDRESS (PHYSICAL) 2455 Mette Road	CITY Wentzville	STATE MO	ZIP CODE 63385
2. OWNER			
NAME AND OFFICIAL TITLES Susan Spiegel - Director of Public Works			
ADDRESS 1001 Schroder Creek Blvd	CITY Wentzville	STATE MO	ZIP CODE 63385
TELEPHONE NUMBER WITH AREA CODE (636) 639-2049	E-MAIL ADDRESS susan.spiegel@wentzvillemo.org		
3. CONTINUING AUTHORITY			
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 .			
NAME AND OFFICIAL TITLES same as owner			
ADDRESS	CITY	STATE	ZIP CODE
TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS		
4. RECEIVING WATER BODY SEGMENT #1			
NAME McCoy Creek			
4.1	UPPER END OF SEGMENT (Location of discharge) UTM _____ OR Lat _____, Long _____		684925, 4303837
4.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____		687923, 4304448
Per the Missouri Antidegradation 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."			
5. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)			
NAME NA			
5.1	UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
5.2	LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____		
6. WET WEATHER ANTICIPATIONS			
If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to the antidegradation review report.			
What is the Wet Weather Flow Peaking Factor in relation to design flow? 3:1			
Wet Weather Design Summary: The Phase III improvements includes only the construction of an additional aeration basin at the City's WRC. The existing UV facility will continue to disinfect the full wet weather flows anticipated for this improvement phase.			

7. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data approved by the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Watershed Protection Section. **Additional information needed with the EWQ data includes:** 1) Date existing water quality data was provided by the Watershed Protection Section, 2) Approval date by the Watershed Protection Section of the QAPP, project sampling plan, and data collected for all appropriate POCs.

Comments/Discussion: A DO model was developed and submitted in accordance with MDNR guidance.

8. SUMMARY OF THE POLLUTANTS OF CONCERN AND THE PROPOSED EFFLUENT LIMITS

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. and assumed or demonstrated to cause significant degradation. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

What are the proposed pollutants of concern are		POC	Maximum Daily Limit	Average Weekly Limit	Average Monthly Limit
Pollutants of Concern*	Units	Ammonia, Summer	3.6 mg/L	---	1.4 mg/L
BOD5	MG/L	Ammonia, Winter	7.5 mg/L	---	2.9 mg/L
TSS	MG/L	BOD	---	30 mg/L	20 mg/L
DISSOLVED OXYGEN	MG/L	TSS	---	30 mg/L	20 mg/L
AMMONIA	MG/L	Copper	22.0 ug/L	---	11.0 ug/L
BACTERIA (E. COLI)	CFUS	pH	6.5 - 9.0 SU	---	6.5 - 9.0 SU
		Oil and Grease	15 mg/L	---	10 mg/L
		Bacteria	---	1030 cfu/100 mL	206 cfu/100mL

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

*Assumed Tier 2.

9. 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.

Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri in their Tier 2 Reviews with alternative analysis must comply with the requirements set forth in the *New Technology Definitions and Requirements Factsheet* that can be found at: <http://dnr.mo.gov/pubs/pub2453.pdf>.

Non-degrading alternatives: The City evaluated effluent irrigation as an alternative to the discharge. However, the alternative is not practicable given the amount of land area needed. It was therefore excluded from further evaluation.

Alternatives ranging from less-degrading to degrading including Preferred Alternative (All treatment levels for POCs must at a minimum meet water quality standards):

Alternatives	POC	Activated Sludge Base Case	Immediate Biological Nutrient Removal	Enhanced Nutrient Removal
		Average Monthly Limit	Average Monthly Limit	Average Monthly Limit
	Ammonia, Summer	1.4 mg/L	1.4 mg/L	1.4 mg/L
	Ammonia, Winter	2.9 mg/L	2.9 mg/L	2.9 mg/L
	BOD	20 mg/L	10 mg/L	10 mg/L
	TSS	20 mg/L	10 mg/L	10 mg/L
	Copper	11.0 ug/L	11.0 ug/L	11.0 ug/L
	pH	6.5 - 9.0 SU	6.5 - 9.0 SU	6.5 - 9.0 SU
	Oil and Grease	10 mg/L	10 mg/L	10 mg/L
	Bacteria	206 cfu/100ml	206 cfu/100ml	206 cfu/100ml
	Total Phosphorus	---	1.0 mg/L - annual average	0.5 mg/L - annual average
	Total Nitrogen	---	10.0 mg/L - annual average	1.0 mg/L - annual average

10. DETERMINATION OF THE REASONABLE ALTERNATIVE
<p>Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. Please do not write "See Report" for any box below.</p>
<p>Practicability Summary:</p> <p>"The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a.</p> <p>The City evaluated four alternatives for this antidegradation analysis. The base case alternative includes improvements and an expansion to the City's existing treatment facility. The base case alternative would expand DAF from 5.3 MGD to 7.04 MGD and includes future plans for improvements towards attaining biological nutrient removal over the next 20 years.</p> <p>Alternatives to the base case included a non-degrading option (effluent irrigation) and two less-degrading options (immediate biological nutrient removal and enhanced nutrient removal). The non-degrading option was not practicable due to the land area required. The less-degrading options were considered practicable.</p>
<p>Economic Efficiency Summary:</p> <p>Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b.</p> <p>The present worth cost of the base case alternative is \$16.1 million. Based on the 120% threshold described in the AP, alternatives that cost more than \$12.2 million are not economically efficient. The estimated present worth costs of the less-degrading BNR (\$79.2 million) and ENR (\$91.9 million) alternatives significantly exceed this threshold. Therefore, they were excluded from further analysis.</p>
<p>Affordability Summary:</p> <p>Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement."</p> <p>The base case alternative was assumed to be affordable.</p>
<p>Preferred Chosen Alternative:</p> <p>The base case alternative consists of the initial phase of the City's multi-phased approach to implement biological nutrient removal (BNR) technology over the next 20 years as capacity demands increase. These phases follow from the initial two expansion and upgrade phases described in Section 1.2 of the report, and are therefore referred to as Phase III, IV, V, and VI. This antidegradation review is specifically for the Phase III expansion to 7.04 MGD. See the report for an explanation of all phases. Specifically, Phase III consists of the following: installation of Aeration Basin 5 anoxic zone mixers, a new Aeration Basin 6 to contain anoxic and aerobic zones, and conversion of Treatment Unit 2 to entirely aerobic digestion.</p>
<p>Reasons for Rejecting the other Evaluated Alternatives:</p> <p>Not economically efficient. See above.</p>
<p>Comments/Discussion:</p>



11. 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 affected community for this project are the residents and customers of the City of Wentzville.			
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 City has experienced dramatic population growth since 2000 and expects this growth to continue into the foreseeable future. The City anticipates that the population equivalent will grow by 112% between 2017 and 2037. At this rate of growth, the projected annual daily flow increase is 222,800 gpd. These results suggest that additional capacity may be needed at the WRC as soon as 2020.			
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 expansion project is needed to allow for continued growth in the City.			
PROPOSED PROJECT SUMMARY: The City is evaluating potential alternatives for upgrading and expanding their Water Reclamation Center (WRC, MO-6093599) to address recent and anticipated growth in the area. The City's current permitted flow of 5.4 million gallons per day (MGD) is based on a maximum monthly flow, with the Plant's current maximum month to average day ratio this equates to an actual average day capacity of 5.34 MGD. The WRC discharges to the Class C section of McCoy Creek approximately 2.7 miles upstream from the Big Creek confluence. McCoy Creek is currently considered a Tier 2 waterbody for antidegradation review purposes. Based on current population growth projections, the City anticipates expanding to a design average flow of 6.90 MGD by the year 2032. This report documents the results of the City's antidegradation review for the initial expansion phase from the existing permitted flow of 5.4 MGD to 7.04 MGD. The City conducted an alternatives analysis and socioeconomic review to demonstrate that the increased discharge is necessary and important. The alternatives analysis included an evaluation of the base case alternative (Phase II expansion), a non-degrading alternative (land application), and two less-degrading alternatives (BNR and EBPR). Results of the alternatives analysis indicated that the base case treatment alternative will meet all existing regulatory requirements and is the only practicable, economically efficient, and affordable treatment alternative. Therefore, it is the preferred alternative for the purposes of this review. Furthermore, the socioeconomic review demonstrates that the expansion project is necessary to accommodate existing and anticipated population growth in the City.			
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 is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.			
SIGNATURE <i>Jeffrey A. Gratzner</i>		DATE 7/3/2018	
NAME AND OFFICIAL TITLES / LICENSE # Jeffrey Gratzner, PE / MO 1999137696		COMPANY NAME HDR Engineering, Inc.	
ADDRESS 401 South 18th St.		CITY St. Louis	STATE MO
TELEPHONE NUMBER WITH AREA CODE (314) 425-8329		ZIP CODE 63101	
		E-MAIL ADDRESS jeffrey.gratzner@hdrinc.com	
OWNER: I have read and reviewed the prepared documents and agree with this submittal.			
SIGNATURE <i>Susan Spiegel</i>		DATE 7/6/18	
CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.			
SIGNATURE <i>Susan Spiegel</i>		DATE 7/6/18	

**Missouri Department of Natural Resources
Factsheet Addendum
For Pretreatment Program Modification
MO-0093599, Wentzville Water Reclamation Center**

This addendum gives pertinent information regarding minor/simple modification(s) to the above listed operating permit for a public comment process.

An addendum is not an enforceable part of a Missouri State Operating Permit.

In accordance with the state Clean Water Law, Chapter 644, RSMo and the Federal Clean Water Act, the City of Wentzville has an approved pretreatment program to meet the requirements of 40 CFR Part 403 and 10 CSR 20-6.100. The Department, as Approval Authority, reviewed the proposed program modifications and, by issuance of this permit, grants its approval as required by 40 CFR 403.18 and 10 CSR 20-6.100.

Part I – Proposed Pretreatment Program Modification

- The Department was required to public notice this program modification.

The public notice of the Department of Natural Resources' intent to approve the city of Wentzville's pretreatment program modification has ended as of January 10, 2022. The pretreatment program is hereby approved pursuant to 40 CFR 403.18 (adopted in 10 CSR 20-6.100) and the city of Wentzville should proceed to implement the pretreatment program requirements upon receipt of this letter.

The City's modification to the sewer use ordinance (SUO) incorporated 1) a few of the optional 2005 Streamlining Rule revisions to the federal rule such as non-significant categorical industrial user classification, specific monitoring waiver of pollutants not present, and authority to adopt best management practices to implement local limits, 2) updated surcharge limits for COD, ammonia/TKN, and 3) an increase of the specific prohibition for pH to 10.5 SU. The City, additionally, updated the enforcement response plan (ERP) to improve the planning procedures. City's pretreatment program changes were designated substantial modifications because the City modified its SUO to include updated local limits after conducting a detailed local limit analysis that is part of this program modification. These changes could have a significant impact on the operation of the program, pursuant to 40 CFR 403.18(b)(7).

See Factsheet **Appendix** for POTW's September 21, 2021, Statement of Basis letter for the pretreatment modification.

Part II – Reason for the NPDES Permit Modification

In accordance with 40 CFR 403.18(e), "all modifications shall be incorporated into the POTW's NPDES permit upon approval. The permit will be modified to incorporate the approved modification in accordance with 40 CFR 122.63(g)." Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in § 122.62. Minor modifications include:

(g) Incorporate conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR 403.18) as enforceable conditions of the POTW's permits.

Date of addendum: 01/25/2022

Completed by:
Todd Blanc,
Industrial Pretreatment Coordinator
Water Protection Program
314-416-2064
todd.blanc@dnr.mo.gov

Appendix. Pretreatment Modification Statement of Basis letter



September 21, 2021 and revised version 11/22/21

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102
Via electronic submission todd.blanc@dnr.mo.gov

**RE: City of Wentzville (MSOP MO-0093599)
Submittal of the Pretreatment Program Update**

Dear Mr. Blanc:

Please find attached proposed updates associated with the City of Wentzville's Pretreatment Program including updated local limits for the City of Wentzville, corresponding proposed modifications to our ordinance, and an updated Enforcement Response Plan (ERP). Based on the technical evaluation of the need to update local limits submitted in December of 2020, the report and proposed ordinance modifications document the updated local limit calculations and adoption method by the city. This is in accordance with our State Operating Permit (MO-0093599) and the City's Pretreatment Program.

Local Limits

KimHEC has developed a report to document the basis for the updated local limit calculations and the considerations made in the incorporation into the City's Pretreatment Program. Please refer to the attached report developed by KimHEC and submitted by the city. The local limits developed will be recommended for adoption as uniform concentrations for the conservative pollutants; note that more conservative local limits than the standard uniform concentration based on the Region VII spreadsheet output are proposed for adoption. The city is also proposing maximum allowable industrial loads (MAILs) for conventional parameters including COD which may be used in lieu of BOD. The Code updates referenced below also give the City the authority to implement the local limits as mass limits which the City intends to implement for industrial users with flow monitoring capabilities. Please note that this document is intended to be a continuation of the submittal associated with the Technical Evaluation of Local Limits which was accepted by MDNR on January 22, 2021.

Proposed Ordinance Modifications

Below is a summary of edits made to Title 7 (Utilities). A majority of the edits are associated with Chapter 720 - Wastewater Pretreatment with the exception of surcharge edits made to Chapter 715 (Sewers).

- 715.020: surcharge updates; incorporation of COD and ammonia/TKN surcharges
- 720.050: update the upper range of the allowable pH to 10.5 (from a pH of 9 S.U.s)
- 720.080(c): Addition of the authority to adopt Best Management Practices to implement local limits.
- 720.080: Updated local limits based on Region VII spreadsheet calculations
- 720.120: Addition of model language for authority to require flow equalization or other means of controlling flow.
- 720.215: Addition of permit appeal language
- 720.320(e): Language for monitoring waiver for categorical pollutants not present and certification (720.420(c))
- 720.320(f): Reduced reporting requirements
- 720.430: Added authority for the City to take audio and/or visual media documentation for the purposes of the site visit. Consistent edits made in 720.450 concerning Confidential Information.
- 720.480: clarified that NOV responses must be received within 30 days or sooner if required by the city.

Enforcement Response Plan

This proposed program update also includes an updated Enforcement Response Plan. The city has incorporated additional procedures into the ERP to ensure significant noncompliance is fully evaluated and communicated with the industrial user. The enforcement table was also updated to include additional scenarios and more details on escalating enforcement actions for specific types of violations.

Submittal Certification

As an official of the City of Wentzville, I am stating that the program modifications proposed herein do not affect the POTW's authority or ability to adequately carry out the programs described in §403.8. This statement is made as required by §403.9(b)(1).

- These modifications do not modify the basis for each procedure under 403.8(f)(2).
- The implementation of the Pretreatment Program is not altered and will continue to be implemented via ordinance and individual industrial user permits.



- As discussed above, the city will ensure compliance with Pretreatment Standards and Requirements and will follow their Enforcement Response Guide in the event of noncompliance by Industrial Users.
- The City has had legal counsel review the proposed modifications to the City's ordinance to ensure the modifications do not alter the ability to implement their Pretreatment Program.

Please notify us if you find this to be in order or if you require any additional information on the proposed program modifications. Please contact Greg Wallace at 636-639-2050 or Dan Todd at 636-639-2071 for any further documentation or questions.

Sincerely,

Susan Spiegel

Susan Spiegel, P.E.
Director of Public Works
City of Wentzville

Enclosures:

Local Limit Report with Spreadsheet Output
COD Evaluation
City Code Modifications
Council Endorsement (~~draft, final to be provided~~)
Enforcement Response Plan

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0093599
WENTZVILLE WATER RECLAMATION CENTER**

This permit was modified to reflect changes at the facility due to construction. Construction will be handled under CP0002184.

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant 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 stormwater 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)(A)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 Major facility.

Part I – Facility Information

Facility Type: POTW

Facility Description:

Influent wastewater enters the wastewater treatment plant via three influent lift stations / 2 mechanical bar screens / 1 manual bar screen / 2 aerated cyclone grit chamber / influent then enters the Influent Flow Splitter Structure, which splits the influent flow between the East Treatment Train and the West Treatment Train

East Treatment Train: Aerated equalization basin / 3 circular multi-zone extended aeration activated sludge units with 3 integral final clarifiers

West Treatment Train: 1 rectangular multi-zone extended aeration activated sludge basin / 2 final clarifiers

Effluent from the East Treatment Train and West Treatment Train is then rejoined and receives UV disinfection and then enters the post aeration basin prior to discharge at Outfall #003

Sludge from both treatment trains are pumped to the 4 aerobic sludge digesters / three sludge/biosolids holding tanks / frame and plate filter press / dewatered biosolids are stored on a covered concrete pad / biosolids are land applied

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

No.

Application Date: 08/07/2018

Expiration Date: 01/31/2019

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#003	8.277	Secondary	Domestic

Facility Performance History:

This facility was last inspected on April 4, 2017. The conditions of the facility at the time of inspection were found to be satisfactory. The facility failed to meet Total Suspended Solids on the April 2017 Discharge Monitoring Report.

Comments:

Changes in this permit for Outfall #003 includes the addition of twice per year monitoring for Arsenic, monthly monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite, final effluent limits for Selenium, and an annual Chronic Whole Effluent Toxicity test, the revision of Ammonia and Copper limits, the removal of Oil & Grease limits, and the removal of Cyanide, Chromium III, Chromium VI, Nickel, Silver, and Zinc. Monitoring for BOD₅ was increased to monthly, Ammonia and pH to weekly, and Oil & Grease to quarterly. Changes in this permit also include the addition of Permitted Feature INF, and monthly Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite monitoring, and the addition of Permitted Feature SM2 and monthly Total Hardness. See Part VI of the Fact Sheet for further information regarding the addition and revision of effluent parameters. Special conditions were updated to include the addition of inflow and infiltration reporting requirements, reporting of Non-detects, bypass reporting requirements, pretreatment requirements, the requirement to develop and implement a Stormwater Pollution Prevention Plan, and the addition of instream monitoring requirements.

The design flow in this permit has been adjusted to reflect the design average flow of 5.34 MGD, which is what the facility is designed to treat daily over an annual basis. Wentzville uses the term maximum monthly flow, which they use as the largest volume of flow anticipated to occur during a continuous 30 day period, and is 6.6 MGD. From the 2019 facility plan, the facility can handle a peak flow of 13.9 MGD. The 6.4 MGD design flow listed in the previous permit was a mistake.

Part II – Operator Certification Requirements

✓ This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Owned or operated by or for a

- Municipalities

- County

- Public Sewer District

- State agency

- Public Water Supply Districts

- Private Sewer Company regulated by the Public Service Commission

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200).

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

Operator's Name: Daniel D. Todd
Certification Number: 5528
Certification Level: WW-A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

Part III – Operational Control Testing Requirements

Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publicly owned treatment works and privately owned facilities regulated by the Public Service Commission to conduct internal operational control monitoring to further ensure proper operation of the facility and to be a safeguard or early warning for potential plant upsets that could affect effluent quality. This requirement is only applicable if the publicly owned treatment works and privately owned facilities regulated by the Public Service Commission has a Population Equivalent greater than two hundred (200).

10 CSR 20-9.010(3) allows the Department to modify the monitoring frequency required in the rule based upon the Department's judgement of monitoring needs for process control at the specified facility.

- ✓ As per [10 CSR 20-9.010(4)], the facility is required to conduct operational monitoring. These operational monitoring reports are to be submitted to the Department along with the MSOP discharge monitoring reports.
- The facility is a mechanical plant and is required to conduct operational control monitoring as follows (see next page):

Operational Monitoring Parameter	Frequency
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Aerobic Digester	Daily (M-F)

Part IV – Receiving Stream Information

RECEIVING STREAM(S) TABLE: OUTFALL #003

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
McCoy Creek	C	214	AQL, WBC-B, SCR, HHP, IRR, LWW	07110008-0408	0

*As per 10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: **WWH** = Warm Water Habitat; **CDF** = Cold-water fishery (Current narrative use is cold-water habitat.); **CLF** = Cool-water fishery (Current narrative use is cool-water habitat); **EAH** = Ephemeral Aquatic Habitat; **MAH** = Modified Aquatic Habitat; **LAH** = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = Whole body contact recreation that supports swimming uses and has public access;

WBC-B = Whole body contact recreation that supports swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHH) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current narrative use is defined as **LWP** = Livestock and Wildlife Protection);

DWS = Drinking Water Supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): **GRW** = Groundwater

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
McCoy Creek (C)	0	0	0

MIXING CONSIDERATIONS

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

RECEIVING STREAM MONITORING REQUIREMENTS:

Permitted Feature SM2. (Downstream): Downstream sampling for Total Hardness is included as the permit includes metals that the toxicity of the metals are hardness dependent. Temperature and pH are included as the permit includes Ammonia, in which the toxicity is pH and Temperature dependent.

Receiving Water Body’s Water Quality: Currently, the Department has not conducted a stream survey for this waterbody. When a stream survey is conducted, more information may be available about the receiving stream.

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.

- ✓ The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)], or is an existing facility.

ANTI-BACKSLIDING:

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

- ✓ Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
 - Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
 - **Ammonia as N.** Effluent limitations were re-calculated for Ammonia. The Department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA’s Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The Department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average. The newly established limitations are still protective of water quality.
 - **Copper, TR.** Effluent limitations were re-calculated for Copper based on new information derived from discharge monitoring reports and on the current Missouri Water Quality Standards for Copper and Hardness. The newly established limitations are still protective of water quality.
 - **Oil & Grease.** The previous permit contained monthly effluent limits and monthly sampling and reporting frequencies. This permit contains monitoring only requirements and quarterly sampling and reporting frequencies as the permit writer did not observe a reasonable potential to violate Water Quality Standards. The permit is still protective of water quality.

- **Cyanide, Chromium III, Chromium VI, Nickel, Silver, and Zinc.** The previous permit contained quarterly monitoring and reporting frequencies. These parameters were removed as the permit writer did not observe a reasonable potential to violate Water Quality Standards. The permit is still protective of water quality.
- **Acute Whole Effluent Toxicity (WET) test.** The previous permit included a requirement to conduct an annual Acute WET test. The Acute WET test was replaced with an annual Chronic WET test, and is protective of water quality.
- The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
 - **General Criteria.** The previous permit contained a special condition which described a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4). In order to comply with 40 CFR 122.44(d)(1), the permit writer has conducted reasonable potential determinations for each general criterion and established numeric effluent limitations where reasonable potential exists. While the removal of the previous permit special condition creates the appearance of backsliding, since this permit establishes numeric limitations where reasonable potential to cause or contribute to an excursion of the general criteria exists the permit maintains sufficient effluent limitations and monitoring requirements in order to protect water quality, this permit is equally protective as compared to the previous permit. Therefore, given this new information, and the fact that the previous permit special condition was not consistent with 40 CFR 122.44(d)(1), an error occurred in the establishment of the general criteria as a special condition of the previous permit. Please see Part VI – Effluent Limits Determination for more information regarding the reasonable potential determinations for each general criterion related to this facility.

ANTIDegradation:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], for domestic wastewater discharge with new, altered, or expanding discharges, the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

- ✓ No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

For stormwater discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ The facility must review and maintain stormwater BMPs as appropriate.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(2)(C)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, when a higher level authority is available, must submit information to the Department for review and approval, provided it 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.

- ✓ Permittee is authorized to land apply biosolids in accordance with Standard Conditions III.

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.

- ✓ The facility is not currently under Water Protection Program enforcement action.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online. In an effort to aid facilities in the reporting of applicable information electronically, the Department has created several new forms including operational control monitoring forms and an I&I location and reduction form. These forms are optional and found on the Department's website at the following locations:

Operational Monitoring Lagoon: <http://dnr.mo.gov/forms/780-2801-f.pdf>

Operational Monitoring Mechanical: <http://dnr.mo.gov/forms/780-2800-f.pdf>

I&I Report: <http://dnr.mo.gov/forms/780-2690-f.pdf>

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. Each facility must make a request. If a single entity owns or operates more than one facility, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

- ✓ The permittee/facility is currently using the eDMR data reporting system.

NUMERIC LAKE NUTRIENT CRITERIA

- ✓ This facility does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

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
- ✓ This permittee has an approved pretreatment program in accordance with the requirements of [40 CFR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved 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)(1)(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.

- ✓ An RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS**.

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.

- ✓ 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 untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(12)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

- ✓ At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at <http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc>. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at <http://dnr.mo.gov/pubs/pub2574.htm>. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes 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. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study that may result in site-specific criteria or alternative effluent limits. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015 the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

- ✓ 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(11)]. The facility has been given a schedule of compliance to meet final effluent limits for Selenium, which should provide adequate time to evaluate operations and industrial contributions, and implement operational and pretreatment changes required to meet effluent limits.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:

In accordance with [10 CSR 20-6.010(6)(A)], the Department may grant approval of a permittee's Sewer Extension Authority Supervised Program. These approved permittees regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility. The permittee shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. See <http://dnr.mo.gov/env/wpp/permits/sewer-extension.htm>.

- ✓ The permittee does not have a Department approved Sewer Extension Authority Supervised Program.

STORMWATER 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 stormwater 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 June 2015], 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 Stormwater 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 stormwater discharges. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (<http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf>).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs that are reasonable and cost effective. The AA evaluation should include practices that are designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: <http://dnr.mo.gov/forms/index.html>.

- ✓ 10 CSR 20-6.200 and 40 CFR 122.26(b)(14)(ix) includes treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that is located within the confines of the facility, with a design flow of 1.0 MGD or more, or are required to have an approved pretreatment program under 40 CFR part 403, as an industrial activity in which permit coverage is required. In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP).

A facility can apply for conditional exclusion for “no exposure” of industrial activities and materials to stormwater by submitting a permit modification via Form B2 (<http://dnr.mo.gov/forms/780-1805-f.pdf>) appropriate application filing fees and a completed No Exposure Certification for Exclusion from NPDES Stormwater Permitting under Missouri Clean Water Law (<https://dnr.mo.gov/forms/780-2828-f.pdf>) to the Department’s Water Protection Program, Operating Permits Section. Upon approval of the No Exposure Certification, the permit will be modified and the Special Condition to develop and implement a SWPPP will be removed.

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.

- ✓ 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(86)], 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.

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

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

Where C = downstream concentration C_e = effluent concentration
Cs = upstream concentration Q_e = effluent flow
Q_s = upstream 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.

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.

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

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.

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) and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(J)2.A & B are being met. Under [10 CSR 20-6.010(8)(B)], 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:

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility that exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

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 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 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, 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(1)(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.

✓ 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

✓ This facility does not discharge to a 303(d) or TMDL listed stream. McCoy Creek was delisted from the 303(d) List in 2018.

Part VI – Effluent Limits Determination

CATEGORIES 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.

- | | |
|---|---|
| <input type="checkbox"/> Missouri or Mississippi River [10 CSR 20-7.015(2)] | <input type="checkbox"/> Special Streams [10 CSR 20-7.015(6)] |
| <input type="checkbox"/> Lakes or Reservoirs [10 CSR 20-7.015(3)] | <input type="checkbox"/> Subsurface Waters [10 CSR 20-7.015(7)] |
| <input type="checkbox"/> Losing Streams [10 CSR 20-7.015(4)] | <input checked="" type="checkbox"/> All Other Waters [10 CSR 20-7.015(8)] |
| <input type="checkbox"/> Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)] | |

OUTFALL #003 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	1/week-day	monthly	T
BOD ₅	mg/L	1		30	20	30/20	1/month	monthly	C
TSS	mg/L	1		45	30	45/30	1/month	monthly	C
<i>Escherichia coli</i> **	#/100mL	1, 3		1,030	206	1,030/206	1/week	monthly	G
Ammonia as N – January	mg/L	2, 3	12.1		3.1	11.0/2.7	1/week	monthly	C
Ammonia as N – February	mg/L	2, 3	12.1		3.1	11.0/2.7	1/week	monthly	C
Ammonia as N – March	mg/L	2, 3	12.1		3.1	11.0/2.7	1/week	monthly	C
Ammonia as N – April	mg/L	2, 3	12.1		3.1	6.0/1.2	1/week	monthly	C
Ammonia as N – May	mg/L	2, 3	12.1		2.3	6.0/1.2	1/week	monthly	C
Ammonia as N – June	mg/L	2, 3	12.1		1.8	6.0/1.2	1/week	monthly	C
Ammonia as N – July	mg/L	2, 3	12.1		1.5	6.0/1.2	1/week	monthly	C
Ammonia as N – August	mg/L	2, 3	12.1		1.6	6.0/1.2	1/week	monthly	C
Ammonia as N – September	mg/L	2, 3	12.1		1.9	6.0/1.2	1/week	monthly	C
Ammonia as N – October	mg/L	2, 3	12.1		2.8	11.0/2.7	1/week	monthly	C
Ammonia as N – November	mg/L	2, 3	12.1		3.1	11.0/2.7	1/week	monthly	C
Ammonia as N – December	mg/L	2, 3	12.1		3.1	11.0/2.7	1/week	monthly	C
Total Phosphorus	mg/L	1	*		*	***	1/month	monthly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	***	1/month	monthly	C
Nitrite + Nitrate	mg/L	1	*		*	***	1/month	monthly	C
Copper, TR	µg/L	2, 3	26.3		14.3	22/11.1	1/month	monthly	C
Selenium, TR (Interim)	µg/L	2, 3	*		*	***	1/month	monthly	C
Selenium, TR (Final)	µg/L	2, 3	8.2		4.1	*/*	1/month	monthly	C
PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.5		9.0	6.5-9.0	1/week	monthly	G
PARAMETER	Unit	Basis for Limits			Monthly Avg. Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
BOD ₅ Percent Removal	%	1			85	85	1/month	monthly	M
TSS Percent Removal	%	1			85	85	1/month	monthly	M

* - Monitoring requirement only.

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

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

**** - C = 24-hour composite

G = Grab

T = 24-hr. total

E = 24-hr. estimate

M = Measured/calculated

Basis for Limitations Codes:

- | | | |
|--|-----------------------------------|---|
| 1. State or Federal Regulation/Law | 5. Antidegradation Policy | 9. WET Test Policy |
| 2. Water Quality Standard (includes RPA) | 6. Water Quality Model | 10. Multiple Discharger Variance |
| 3. Water Quality Based Effluent Limits | 7. Best Professional Judgment | 11. Nutrient Criteria Implementation Plan |
| 4. Antidegradation Review | 8. TMDL or Permit in lieu of TMDL | |

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Oil & Grease	mg/L	7	*		*	15/10	1/quarter	quarterly	G
Arsenic, TR	µg/L	7	*		*	***	2/year	2/year	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***	1/year	annually	C

* - Monitoring requirement only.
 ** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
 *** - Parameter not previously established in previous state operating permit.

**** - C = 24-hour composite
 G = Grab
 T = 24-hr. total
 E = 24-hr. estimate
 M = Measured/calculated

Basis for Limitations Codes:

- | | | |
|--|-----------------------------------|---|
| 1. State or Federal Regulation/Law | 5. Antidegradation Policy | 9. WET Test Policy |
| 2. Water Quality Standard (includes RPA) | 6. Water Quality Model | 10. Multiple Discharger Variance |
| 3. Water Quality Based Effluent Limits | 7. Best Professional Judgment | 11. Nutrient Criteria Implementation Plan |
| 4. Antidegradation Review | 8. TMDL or Permit in lieu of TMDL | |

OUTFALL #003 – 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).** Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average. Please see the attached 2006 Water Quality Review Sheet in the Appendix section.
- **Total Suspended Solids (TSS).** Operating permit retains 45 mg/L as a Weekly Average and 30 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**
- **Escherichia coli (E. coli).** Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1,030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5th root of (1)(4)(6)(10)(5) = 5th root of 1,200 = 4.1 #/100mL.
- **Oil & Grease.** Monitoring only as the permit writer did not observe a reasonable potential to violate Water Quality Standards. This data will be reviewed at the next permit renewal.
- **Total Phosphorus and Total Nitrogen (Speciated).** Effluent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrite + Nitrate are required per 10 CSR 20-7.015(9)(D)8.
- **pH.** 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L.

The Department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA’s Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The Department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average.

Month	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
January	4	7.8	3.1	12.1
February	5	7.8	3.1	12.1
March	9	7.8	3.1	12.1
April	14	7.8	3.1	12.1
May	19	7.8	2.3	12.1
June	23	7.8	1.8	12.1
July	26	7.8	1.5	12.1
August	25	7.8	1.6	12.1
September	22	7.8	1.9	12.1
October	16	7.8	2.8	12.1
November	10	7.8	3.1	12.1
December	6	7.8	3.1	12.1

January

Chronic WLA: $C_e = ((8.277 + 0)3.1 - (0 * 0.01)) / 8.277$
 $C_e = 3.1$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 0.01)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
 AML = WLAc = 3.1 mg/L

February

Chronic WLA: $C_e = ((8.277 + 0)3.1 - (0 * 0.01)) / 8.277$
 $C_e = 3.1$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 0.01)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
 AML = WLAc = 3.1 mg/L

March

Chronic WLA: $C_e = ((8.277 + 0)3.1 - (0 * 0.01)) / 8.277$
 $C_e = 3.1$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
 AML = WLAc = 3.1 mg/L

April

Chronic WLA: $C_e = ((8.277 + 0)3.1 - (0 * 0.01)) / 8.277$
 $C_e = 3.1$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 0.01)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
 AML = WLAc = 3.1 mg/L

May

Chronic WLA: $C_e = ((8.277 + 0)2.3 - (0 * 0.01)) / 8.277$
 $C_e = 2.3$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
AML = WLAc = 2.3 mg/L

June

Chronic WLA: $C_e = ((8.277 + 0)1.8 - (0 * 0.01)) / 8.277$
 $C_e = 1.8$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
AML = WLAc = 1.8 mg/L

July

Chronic WLA: $C_e = ((8.277 + 0)1.5 - (0 * 0.01)) / 8.277$
 $C_e = 1.5$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
AML = WLAc = 1.5 mg/L

August

Chronic WLA: $C_e = ((8.277 + 0)1.6 - (0 * 0.01)) / 8.277$
 $C_e = 1.6$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
AML = WLAc = 1.6 mg/L

September

Chronic WLA: $C_e = ((8.277 + 0)1.9 - (0 * 0.01)) / 8.277$
 $C_e = 1.9$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 0.01)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
AML = WLAc = 1.9 mg/L

October

Chronic WLA: $C_e = ((8.277 + 0)2.8 - (0 * 0.01)) / 8.277$
 $C_e = 2.8$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
AML = WLAc = 2.8 mg/L

November

Chronic WLA: $C_e = ((8.277 + 0)3.1 - (0 * 0.01)) / 8.277$
 $C_e = 3.1$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
 AML = WLAc = 3.1 mg/L

December

Chronic WLA: $C_e = ((8.277 + 0)3.1 - (0 * 0.01)) / 8.277$
 $C_e = 3.1$

Acute WLA: $C_e = ((8.277 + 0)12.1 - (0 * 8.277)) / 8.277$
 $C_e = 12.1$

MDL = WLAa = 12.1 mg/L
 AML = WLAc = 3.1 mg/L

- **Biochemical Oxygen Demand (BOD₅) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD₅ and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for BOD₅.
- **Total Suspended Solids (TSS) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD₅ and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.
- **Parameters Removed.** Cyanide, Chromium III, Chromium VI, Nickel, Silver, and Zinc were removed from the permit as there was no reasonable potential to violate Water Quality Standards observed. The permittee will sample these parameters as part of the Expanded Effluent Test required with the renewal application. That data will be reviewed during the next permit renewal. The Acute Whole Effluent Toxicity (WET) test was removed as the permittee is required to conduct annual Chronic WET tests.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the “Technical Support Document for Water Quality-based Toxic Controls” (EPA/505/2-90-001) and “The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit from a Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply. Ecoregion water hardness for Central Irregular Plains of 200 mg/L is used in the calculation below. This value represents the 50th percentile (median) for all watersheds in-stream hardness values through the Ecoregion.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960
Silver	0.850	NA

- **Copper, Total Recoverable** Protection of Aquatic Life Acute Criteria = 25.8 µg/L, Chronic Criteria = 16.2 µg/L. The hardness value of **200 mg/L** represents the 50th percentile (median) for McCoy Creek.

$$\begin{aligned} \text{Acute AQL WQS: } & e^{(0.9422 * \ln 200 - 1.7003)} * 0.96 = 25.8 & [\text{at Hardness 200}] \\ \text{Chronic AQL WQS: } & e^{(0.8545 * \ln 200 - 1.702)} * 0.96 = 16.2 & [\text{at Hardness 200}] \end{aligned}$$

$$\begin{aligned} \text{Acute WQS: } & 25.8 \div 0.960 = 26.89 \text{ } \mu\text{g/L} & [\text{Total Recoverable Conversion}] \\ \text{Chronic WQS: } & 16.2 \div 0.960 = 16.87 \text{ } \mu\text{g/L} & [\text{Total Recoverable Conversion}] \end{aligned}$$

Set WQS to WLA (when no mixing considerations) see mixing below

$$\begin{aligned} \text{Acute WLA: } & C_e = ((8.277 + 0.0) * 26.89 - (0.0 * 0.0)) \div 8.277 = 26.89 \text{ } \mu\text{g/L} \\ \text{Chronic WLA: } & C_e = ((8.277 + 0.0) * 16.87 - (0.0 * 0.0)) \div 8.277 = 16.87 \text{ } \mu\text{g/L} \end{aligned}$$

$$\begin{aligned} \text{LTA}_a: & 26.89 (0.372) = 10.0 \text{ } \mu\text{g/L} & [\text{CV} = 0.5, 99^{\text{th}} \text{ Percentile}] \\ \text{LTA}_c: & 16.87 (0.5805) = 9.79 \text{ } \mu\text{g/L} & [\text{CV} = 0.5, 99^{\text{th}} \text{ Percentile}] \end{aligned}$$

Use most protective number of LTA_a or LTA_c.

$$\begin{aligned} \text{MDL: } & 9.79 (2.69) = \mathbf{26.3} \text{ } \mu\text{g/L} & [\text{CV} = 0.5, 99^{\text{th}} \text{ Percentile}] \\ \text{AML: } & 9.79 (1.46) = \mathbf{14.3} \text{ } \mu\text{g/L} & [\text{CV} = 0.5, 95^{\text{th}} \text{ Percentile, } n = 4] \end{aligned}$$

Selenium, Total Recoverable Protection of Aquatic Life Chronic Criteria = 5 µg/L.

$$\text{Chronic WLA: } C_e = ((8.277 + 0.0) * 5 - (0.0 * 0.0)) \div 8.277 = 5 \text{ } \mu\text{g/L}$$

$$\text{LTA}_c: 5 (0.5274) = 2.637 \text{ } \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL: } 2.637 (3.11) = \mathbf{8.2} \text{ } \mu\text{g/L} \quad [\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML: } 2.637 (1.55) = \mathbf{4.1} \text{ } \mu\text{g/L} \quad [\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

- **Arsenic, Total Recoverable.** Monitoring only requirement as there are industrial users with the potential to discharge Arsenic to the facility. The data collected will be reviewed during the next permit renewal.

Whole Effluent Toxicity

- **Chronic Whole Effluent Toxicity.** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards
 - Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Sampling Frequency Justification: Sampling and Reporting Frequency was retained from previous permit, except for BOD₅ which was increased to monthly, pH and Ammonia were increased to weekly, and Oil & Grease was reduced to quarterly. BOD₅ was increased to monthly and pH and Ammonia were increased to weekly as the existing frequencies do not provide adequate data to ensure that the facility is properly operating. Oil & Grease was reduced to quarterly as the permit writer did not observe a reasonable potential to violate Water Quality Standards. Arsenic was set to twice per year to obtain adequate samples to review during the next permit renewal. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)7.A.

WET Test Sampling Frequency Justification. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

Chronic Whole Effluent Toxicity

- ✓ **No less than ONCE/YEAR:**
 - Facility incorporates a pretreatment program and dilution of the receiving stream is less than 100:1.

Sampling Type Justification: As per 10 CSR 20-7.015, samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, *E. coli*, Oil & Grease, and Cyanide in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

PERMITTED FEATURE INF – INFLUENT MONITORING

The monitoring requirements established in the below Monitoring Requirements Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including the monitoring requirements listed in this table.

INFLUENT MONITORING TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
BOD ₅	mg/L	1			*	*	1/month	monthly	C
TSS	mg/L	1			*	*	1/month	monthly	C
Ammonia as N	mg/L	1	*		*	***	1/month	monthly	C
Total Phosphorus	mg/L	1	*		*	***	1/month	monthly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	***	1/month	monthly	C
Nitrite + Nitrate	mg/L	1	*		*	***	1/month	monthly	C

* - Monitoring requirement only. **** - C = Composite
G = Grab
 *** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | | |
|--|-----------------------------------|---|
| 1. State or Federal Regulation/Law | 5. Antidegradation Policy | 9. WET Test Policy |
| 2. Water Quality Standard (includes RPA) | 6. Water Quality Model | 10. Multiple Discharger Variance |
| 3. Water Quality Based Effluent Limits | 7. Best Professional Judgment | 11. Nutrient Criteria Implementation Plan |
| 4. Antidegradation Review | 8. TMDL or Permit in lieu of TMDL | |

Influent Parameters

- **Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS).** An influent sample is required to determine the removal efficiency. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD₅ and TSS for Publicly Owned Treatment Works (POTWs)/municipals.
- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia.** Influent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia required per 10 CSR 20-7.015(9)(D)8.

Sampling Frequency Justification: The sampling and reporting frequencies for Total Phosphorus and Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia parameters were established to match the required sampling frequency of these parameters in the effluent, per [10 CSR 20-7.015(9)(D)8.]. The sampling and reporting frequencies for influent BOD₅ and TSS have been established to match the required sampling frequency of these parameters in the effluent.

Sampling Type Justification: Sample types for influent parameters were established to match the required sampling type of these parameters in the effluent. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

PERMITTED FEATURE SM2 – INSTREAM MONITORING (DOWNSTREAM)

The monitoring requirements established in the below Monitoring Requirements Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including the monitoring requirements listed in this table.

MONITORING REQUIREMENTS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Hardness	mg/L	1, 3	*			***	1/month	monthly	G
pH	SU	7	*			***	1/month	monthly	G
Temperature	°C	7			*	***	1/month	monthly	M

* - Monitoring requirement only. **** - G = Grab
 *** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | | |
|--|-----------------------------------|---|
| 1. State or Federal Regulation/Law | 5. Antidegradation Policy | 9. WET Test Policy |
| 2. Water Quality Standard (includes RPA) | 6. Water Quality Model | 10. Multiple Discharger Variance |
| 3. Water Quality Based Effluent Limits | 7. Best Professional Judgment | 11. Nutrient Criteria Implementation Plan |
| 4. Antidegradation Review | 8. TMDL or Permit in lieu of TMDL | |

PERMITTED FEATURE SM2 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

- **Total Hardness**. Monitoring only requirement as the metals parameters contained in the permit are hardness based. This data will be used in the next permit renewal.
- **pH**. Monitoring requirement only. This data will be used during the next permit renewal along with instream Temperature data to calculate Ammonia limits, as Ammonia toxicity is Temperature and pH dependent.
- **Temperature**. Monitoring requirement only. This data will be used during the next permit renewal along with instream pH data to calculate Ammonia limits, as Ammonia toxicity is Temperature and pH dependent.

Sampling Frequency Justification: The sampling and reporting frequency for Total Hardness has been established to match the required sampling frequency of the metals parameters in the effluent. The sampling and reporting frequency for pH and Temperature has been established to match the required sampling frequency of pH in the effluent.

Sampling Type Justification: For the purposes of instream data collection, and as the upstream water quality should be consistent over a 24 hour period, grab samples are sufficient. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

OUTFALL #003 – GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is 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.

- (A) 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. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the recent Report of Compliance Inspection for the inspection conducted on April 4, 2017, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with effluent limitations that are more stringent than or equal to secondary treatment technology based effluent limits established in this permit and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.
- (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.
- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.
- (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.
- (E) Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state. Please see (D) above as justification is the same.
- (F) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.
- (G) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.
- (H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.
- (I) 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. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

Part VII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon

which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

- ✓ The Department is required to determine “findings of affordability” because the permit applies to a combined or separate sanitary sewer system for a publicly-owned treatment works.

Cost Analysis for Compliance - 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.

The following table summarizes the results of the cost analysis. See **Appendix – Cost Analysis for Compliance** for detailed information.

Summary Table. Cost Analysis for Compliance Summary for the City of Wentzville

New Permit Requirements			
Outfall #003: semi-annual Arsenic monitoring, monthly Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite monitoring, final effluent limits for Selenium, an annual Chronic Whole Effluent Toxicity test, revision of Copper limits. Monthly monitoring for BOD ₅ , and weekly monitoring for Ammonia and pH. Permitted Feature INF: monthly Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite monitoring. Permitted Feature SM2: monthly Total Hardness, pH, and Temperature monitoring. Develop and implement a Stormwater Pollution Prevention Plan.			
Estimated Annual Cost	Annual Median Household Income (MHI)	Estimated Monthly User Rate	User Rate as a Percent of MHI
\$7,778	\$83,807	\$30.54	0.44%

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.

WATER QUALITY STANDARD REVISION:

In accordance with section 644.058, RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

- ✓ This operating permit contains a permit requirement for Copper and Silver which water quality criteria has been modified by twenty-five percent or more since the issuance of the previous permit.

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. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit. With permit synchronization, this permit will expire in the 1st Quarter of calendar year 2024.

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 February 7, 2020 to March 9, 2020. No responses received.

DATE OF FACT SHEET: JANUARY 14, 2020

COMPLETED BY:

BRANT FARRIS, ENVIRONMENTAL SPECIALIST III
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

Item	Points Possible	Points Assigned
Maximum Population Equivalent (P.E.) served , peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	5
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	6
Effluent Discharge		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
Direct reuse or recycle of effluent	6	
Land Application/Irrigation		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
Variation in Raw Wastes (highest level only)		
Variations do not exceed those normally or typically expected	0	
Reoccurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2	2
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow	3	3
Flow equalization	5	
Primary Treatment		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	4	
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	
Activated sludge (including aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film	10	
Biological, physical, or chemical	12	12
Carbon regeneration	4	
Total from page ONE (1)	----	51

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	5
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	8
Solids reduction (incineration, wet oxidation)	12	
Land application	6	
Disinfection		
Chlorination or comparable	5	
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	
UV light	4	4
Required Laboratory Control Performed by Plant Personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page TWO (2)	---	30
Total from page ONE (1)	---	51
Grand Total	---	81

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	15.66	1.5	15.66	31.00	4.15/0.11	1.47	3.77	YES
Total Ammonia as Nitrogen (Winter) mg/L	12.1	25.63	3.1	25.63	33.00	6.63/0.02	1.60	3.87	YES
Chromium III, Total Recoverable (µg/L)	3181.1	19.67	152.0	19.67	20.00	10/0	0.5	1.97	NO
Chromium VI, Dissolved (µg/L)	15.0	6.64	10.0	6.64	15.00	5/2	0.2	1.33	NO
Copper, Total Recoverable (µg/L)	26.9	30.52	16.9	30.52	56.00	19.8/2	0.5	1.54	YES
Cyanide (µg/L)	22.0	2.65	5.0	2.65	18.00	2.5/0.975	0.4	1.06	NO
Nickel, Total Recoverable (µg/L)	843.9	43.64	93.8	43.64	20.00	24/0	0.4	1.82	NO
Selenium, Total Recoverable (µg/L)	NA	NA	5.0	36.09	3.00	7/2.5	0.6	5.16	YES
Silver, Total Recoverable (µg/L)	12.5	5.73	NA	NA	17.00	5/1	0.6	1.15	NO
Zinc, Total Recoverable (µg/L)	216.0	173.91	214.3	173.91	19.00	107/27.1	0.3	1.63	NO

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

APPENDIX – ALTERNATIVE: 2006 WQRS



Missouri Department of Natural Resources
Water Protection Program
NPDES PERMITS AND ENGINEERING SECTION

Water Quality Review Sheet
Determination of Effluent Limits and Monitoring Requirements

FACILITY INFORMATION

FACILITY NAME: City of Wentzville Water Reclamation Center (WRC) NPDES #: MO-0093599

FACILITY TYPE/DESCRIPTION: 14.1 MGD extended aeration facility, UV disinfection.

EDU*: Plains/MS Tribs btwn Des Moines & MO 8-DIGIT HUC: 07110008 COUNTY: St. Charles

* - Ecological Drainage Unit

LEGAL DESCRIPTION: SW SE NE Sec. 2, T47N, R1E LATITUDE/LONGITUDE: +3851431/-09052073

WATER QUALITY HISTORY: Reasonable potential analyses were conducted for ammonia as nitrogen, cyanide, and total recoverable metals (Cr, Cu, Ag, Ni, and Zn); results are available upon request.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	21.9	Secondary	McCoy Creek	0.0 Miles
002	Variable	Stormwater	McCoy Creek	0.0 Miles

RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
McCoy Creek	C	0214	0.0	0.0	0.1	LWW, AQL, WBC

** 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)

COMMENTS: A water quality impact study was submitted by Carollo Engineers on behalf of the city to determine wasteload allocations protective of water quality in McCoy Creek upon final buildout of the WRC. The study, "City of Wentzville, Missouri Water Reclamation Center Expansion Project, Technical Memorandum, McCoy Creek Water Quality Study, Final, August 2005", was reviewed and used by staff to develop BOD₅, TSS, and DO effluent limitations for the facility.

MIXING CONSIDERATIONS

Mixing Zone (MZ): Not allowed, 7Q10 less than 0.1 cfs [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

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

	Flow (cfs)	MZ (cfs)	ZID (cfs)
7Q10	0.0	0.0	0.0
1Q10	0.0	0.0	0.0
30Q10	0.1	0.025	0.0025

Applicable mixing zone regulation: 10 CSR 20-7.031(4)(A)4.B.(I)(a)

PERMIT LIMITS AND INFORMATION

WASTELOAD ALLOCATION
STUDY CONDUCTED (Y OR N): Y

USE ATTAINABILITY
ANALYSIS CONDUCTED (Y OR N): Y

WHOLE BODY CONTACT
USE RETAINED (Y OR N): Y

OUTFALL #001

WET TEST (Y OR N): Y FREQUENCY: ONCE/YEAR AEC: 100 % METHOD: SINGLE

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MONITORING FREQUENCY
FLOW	MONITOR			ONCE/DAY
BOD ₅ (MG/L)		30	20	ONCE/WEEKDAY
TSS (MG/L)		45	30	ONCE/WEEKDAY
PH (S.U.)	6-9		6-9	ONCE/WEEKDAY
DISSOLVED OXYGEN (MG/L)	**		**	ONCE/WEEKDAY
AMMONIA AS N (MG/L) (MAY 1 – OCT 31)	3.7		1.9	ONCE/WEEKDAY
AMMONIA AS N (MG/L) (NOV 1 – APR 30)	7.5		3.7	ONCE/WEEKDAY
OIL & GREASE (MG/L)	15		10	ONCE/MONTH
FECAL COLIFORM* (COLONIES/100 mL)	1000		400	ONCE/MONTH
CHROMIUM (III), TOTAL REC. (µG/L)	221		84.5	ONCE/MONTH
CHROMIUM (IV), TOTAL REC. (µG/L)	13.9		5.3	ONCE/MONTH
COPPER, TOTAL REC. (µG/L)	18.0		5.8	ONCE/MONTH
NICKEL, TOTAL REC. (µG/L)	90.4		68.2	ONCE/MONTH
SILVER, TOTAL REC. (µG/L)	6.9		2.7	ONCE/MONTH
ZINC, TOTAL REC. (µG/L)	169		73.7	ONCE/MONTH
CYANIDE, AMENABLE TO CHLORINATION (µG/L)	8.8		3.9	ONCE/MONTH

* - April 1 – October 31, ** - Dissolved Oxygen Minimum Concentration = 6.0 mg/L

Please report the date, time, and location for each parameter sampled along with the average daily flow (actual flow measured or estimated, not design flow). All the parameters should be sampled on the same day and within no more than a 2-hour period. Dissolved oxygen (DO) measurements are to be taken during the period from one hour prior to sunrise to one and one-half hour after sunrise. If discharge is contingent to storm events, rainfall should be measured every time there is a discharge.

OUTFALL #002

Effluent limits and monitoring requirements from the existing facility operating permit should be retained.

RECEIVING WATER MONITORING REQUIREMENTS

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen	Once/quarter	Grab	S1 – Upstream of Outfall #001
Temperature	Once/quarter	Grab	
pH	Once/quarter	Grab	S2 – Mette Road Bridge
Ammonia as Nitrogen	Once/quarter	Grab	

DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations were calculated 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).

Outfall #001 – Main Facility Outfall

- **Biochemical Oxygen Demand (BOD₅).** Staff have reviewed the wasteload allocations for BOD₅ found in the report “City of Wentzville, Missouri Water Reclamation Center Expansion Project, Technical Memorandum, McCoy Creek Water Quality Study, Final, August 2005” submitted by Carollo Engineers. The wasteload allocations used in the report are the same as the existing BOD₅ effluent limitations for this facility and attain water quality standards at a dissolved oxygen concentration of 6.0 mg/L. The existing BOD₅ effluent limitations of 30 mg/L weekly average, 20 mg/L monthly average will therefore be retained.
- **Total Suspended Solids (TSS).** Existing TSS effluent limitations of 45 mg/L weekly average, 30 mg/L monthly average are expected to be protective of water quality in McCoy Creek and will be retained [10 CSR 20-7.015(8)(B)1.]
- **pH.** pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015(8)(B)2.]
- **Dissolved Oxygen.** Input parameters to the water quality model submitted by Carollo Engineers indicate a dissolved oxygen minimum concentration of 6.0 mg/L is required to ensure maintenance of water quality criteria in McCoy Creek.
- **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/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: May 1 – October 31, Winter: November 1 – April 30

Summer

Chronic WLA: $C_e = ((21.9 + 0.0)1.5 - (0.0 * 0.01))/21.9$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((21.9 + 0.0)12.1 - (0.0 * 0.01))/21.9$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = 1.2 \text{ mg/L}$ [CV = 0.6, 99th Percentile, n = 30]
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

$MDL = 1.2 \text{ mg/L} * 3.11 = 3.7 \text{ mg/L}$ [CV = 0.6, 99th Percentile]
 $AML = 1.2 \text{ mg/L} * 1.55 = 1.9 \text{ mg/L}$ [CV = 0.6, 95th Percentile, n = 4]

Winter

Chronic WLA: $C_e = ((21.9 + 0.0)3.1 - (0.0 * 0.01))/21.9$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((21.9 + 0.0)12.1 - (0.0 * 0.01))/21.9$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.780) = 2.4 \text{ mg/L}$ [CV = 0.6, 99th Percentile, n = 30]
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

MDL = 2.4 mg/L * 3.11 = 7.5 mg/L

[CV = 0.6, 99th Percentile]

AML = 2.4 mg/L * 1.55 = 3.7 mg/L

[CV = 0.6, 95th Percentile, n = 4]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	3.7	1.9
Winter	7.5	3.7

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **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 during the recreational season (April 1 – October 31) [10 CSR 20-7.015(8)(B)4.A.] 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.
- **Metals.** Effluent limitations for all total recoverable metals (Cr, Cu, Ni, Ag, and Zn) have been retained as a result of the reasonable potential analyses. Electronic copies of the reasonable potential analyses are available upon request.

METAL	CMC (µg/L)	CCC (µg/L)	RECEIVING WATER CONCENTRATION (µg/L)	REASONABLE POTENTIAL
Chromium (III)	794	103	144	Yes
Chromium (IV)	15	10	144	Yes
Copper	20	10	523	Yes
Nickel	660	73	111	Yes
Silver	6.5	N/A	21	Yes
Zinc	165	151	1136	Yes

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162.5 mg/L.

Due to the absence of contemporaneous effluent and in-stream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS		WQBEL
	ACUTE	CHRONIC	
Chromium (III)	0.316	0.860	Yes
Chromium (IV)	0.982	0.962	Yes
Copper	0.960	0.960	Yes
Nickel	0.998	0.997	Yes
Silver	0.85	N/A	Yes
Zinc	0.978	0.986	Yes

Chromium III (Cr III): Protection of Aquatic Life CCC = 103 µg/L, CMC = 794 µg/L [10 CSR 20-7.031, Table A];
Background Cr = 0 µg/L

$$C \text{ (Chronic)} = CCC/CF = 103/0.860 = 120 \text{ µg/L}$$

$$C \text{ (Acute)} = CMC/CF = 794/0.316 = 2513 \text{ µg/L}$$

$$\text{Chronic WLA: } C_e = ((21.9 + 0.0)120 - (0.0 * 0.0))/21.9$$
$$C_e = 120 \text{ µg/L}$$

$$\text{Acute WLA: } C_e = ((21.9 + 0.0)2513 - (0.0 * 0.0))/21.9$$
$$C_e = 2513 \text{ µg/L}$$

$$LTA_c = 120 \text{ µg/L (0.345)} = \mathbf{41.4 \text{ µg/L}} \quad [\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$LTA_a = 2513 \text{ µg/L (0.167)} = 420 \text{ µg/L} \quad [\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 41.4 \text{ µg/L} * 5.34 = 221 \text{ µg/L} \quad [\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 41.4 \text{ µg/L} * 2.04 = 84.5 \text{ µg/L} \quad [\text{CV} = 1.1, 95^{\text{th}} \text{ Percentile, } n = 4]$$

Chromium IV (Cr IV): Protection of Aquatic Life CCC = 10 µg/L, CMC = 15 µg/L [10 CSR 20-7.031, Table A];
Background Cr = 0 µg/L

$$C \text{ (Chronic)} = CCC/CF = 10/0.962 = 10.4 \text{ µg/L}$$

$$C \text{ (Acute)} = CMC/CF = 15/0.982 = 15.3 \text{ µg/L}$$

$$\text{Chronic WLA: } C_e = ((21.9 + 0.0)10.4 - (0.0 * 0.0))/21.9$$
$$C_e = 10.4 \text{ µg/L}$$

$$\text{Acute WLA: } C_e = ((21.9 + 0.0)15.3 - (0.0 * 0.0))/21.9$$
$$C_e = 15.3 \text{ µg/L}$$

$$LTA_c = 10.4 \text{ µg/L (0.345)} = 3.6 \text{ µg/L} \quad [\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$LTA_a = 15.3 \text{ µg/L (0.167)} = \mathbf{2.6 \text{ µg/L}} \quad [\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 2.6 \text{ µg/L} * 5.34 = 13.9 \text{ µg/L} \quad [\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 2.6 \text{ µg/L} * 2.04 = 5.3 \text{ µg/L} \quad [\text{CV} = 1.1, 95^{\text{th}} \text{ Percentile, } n = 4]$$

Copper (Cu): Protection of Aquatic Life CCC = 10 µg/L, CMC = 20 µg/L [10 CSR 20-7.031, Table A]; Background
Cu = 0 µg/L

$$C \text{ (Chronic)} = CCC/CF = 10/0.960 = 10.4 \text{ µg/L}$$

$$C \text{ (Acute)} = CMC/CF = 20/0.960 = 20.8 \text{ µg/L}$$

$$\text{Chronic WLA: } C_e = ((21.9 + 0.0)10.4 - (0.0 * 0.0))/21.9$$
$$C_e = 10.4 \text{ µg/L}$$

$$\text{Acute WLA: } C_e = ((21.9 + 0.0)20.8 - (0.0 * 0.0))/21.9$$
$$C_e = 20.8 \text{ µg/L}$$

$$LTA_c = 10.4 \text{ µg/L (0.204)} = \mathbf{2.1 \text{ µg/L}} \quad [\text{CV} = 2.0, 99^{\text{th}} \text{ Percentile}]$$

$$LTA_a = 20.8 \text{ µg/L (0.117)} = 2.4 \text{ µg/L} \quad [\text{CV} = 2.0, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 2.1 \mu\text{g/L} * 8.55 = 18.0 \mu\text{g/L}$$
$$\text{AML} = 2.1 \mu\text{g/L} * 2.78 = 5.8 \mu\text{g/L}$$

$$[\text{CV} = 2.0, 99^{\text{th}} \text{ Percentile}]$$
$$[\text{CV} = 2.0, 95^{\text{th}} \text{ Percentile}, n = 4]$$

Nickel (Ni): Protection of Aquatic Life CCC = 73 $\mu\text{g/L}$, CMC = 660 $\mu\text{g/L}$ [10 CSR 20-7.031, Table A]; Background Ni = 0 $\mu\text{g/L}$

$$C (\text{Chronic}) = \text{CCC}/\text{CF} = 73/0.997 = 73.2 \mu\text{g/L}$$
$$C (\text{Acute}) = \text{CMC}/\text{CF} = 660/0.998 = 661 \mu\text{g/L}$$

$$\text{Chronic WLA: } C_e = ((21.9 + 0.0)73.2 - (0.0 * 0.0))/21.9$$
$$C_e = 73.2 \mu\text{g/L}$$

$$\text{Acute WLA: } C_a = ((21.9 + 0.0)661 - (0.0 * 0.0))/21.9$$
$$C_a = 661 \mu\text{g/L}$$

$$\text{LTA}_c = 73.2 \mu\text{g/L} (0.797) = \mathbf{58.3 \mu\text{g/L}}$$
$$\text{LTA}_a = 661 \mu\text{g/L} (0.643) = 425 \mu\text{g/L}$$

$$[\text{CV} = 0.2, 99^{\text{th}} \text{ Percentile}]$$
$$[\text{CV} = 0.2, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 58.3 \mu\text{g/L} * 1.55 = 90.4 \mu\text{g/L}$$
$$\text{AML} = 58.3 \mu\text{g/L} * 1.17 = 68.2 \mu\text{g/L}$$

$$[\text{CV} = 0.2, 99^{\text{th}} \text{ Percentile}]$$
$$[\text{CV} = 0.2, 95^{\text{th}} \text{ Percentile}, n = 4]$$

Silver (Ag): Protection of Aquatic Life CMC = 6.5 $\mu\text{g/L}$ [10 CSR 20-7.031, Table A]; Background Ag = 0 $\mu\text{g/L}$. C (Acute) = CMC/CF = 6.5/0.85 = 7.6 $\mu\text{g/L}$

$$\text{Acute WLA: } C_a = ((21.9 + 0.0)7.6 - (0.0 * 0.0))/21.9$$
$$C_a = 7.6 \mu\text{g/L}$$

$$\text{LTA}_a = 7.6 \mu\text{g/L} (0.167) = \mathbf{1.3 \mu\text{g/L}}$$

$$[\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 1.3 \mu\text{g/L} * 5.34 = 6.9 \mu\text{g/L}$$
$$\text{AML} = 1.3 \mu\text{g/L} * 2.04 = 2.7 \mu\text{g/L}$$

$$[\text{CV} = 1.1, 99^{\text{th}} \text{ Percentile}]$$
$$[\text{CV} = 1.1, 95^{\text{th}} \text{ Percentile}, n = 4]$$

Zinc (Zn): Protection of Aquatic Life CCC = 151 $\mu\text{g/L}$, CMC = 165 $\mu\text{g/L}$ [10 CSR 20-7.031, Table A]; Background Zn = 0 $\mu\text{g/L}$

$$C (\text{Chronic}) = \text{CCC}/\text{CF} = 151/0.986 = 153 \mu\text{g/L}$$
$$C (\text{Acute}) = \text{CMC}/\text{CF} = 165/0.978 = 169 \mu\text{g/L}$$

$$\text{Chronic WLA: } C_e = ((21.9 + 0.0)153 - (0.0 * 0.0))/21.9$$
$$C_e = 153 \mu\text{g/L}$$

$$\text{Acute WLA: } C_e = ((21.9 + 0.0)169 - (0.0 * 0.0))/21.9$$
$$C_e = 169 \mu\text{g/L}$$

$$\text{LTA}_c = 153 \mu\text{g/L} (0.440) = 67.3 \mu\text{g/L}$$
$$\text{LTA}_a = 169 \mu\text{g/L} (0.249) = \mathbf{42.1 \mu\text{g/L}}$$

$$[\text{CV} = 0.8, 99^{\text{th}} \text{ Percentile}]$$
$$[\text{CV} = 0.8, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 42.1 \mu\text{g/L} * 4.01 = 169 \mu\text{g/L}$$
$$\text{AML} = 42.1 \mu\text{g/L} * 1.75 = 73.7 \mu\text{g/L}$$

$$[\text{CV} = 0.8, 99^{\text{th}} \text{ Percentile}]$$
$$[\text{CV} = 0.8, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Cyanide, Amenable to Chlorination.** Protection of Aquatic Life CCC = 5 µg/L, CMC = 22 µg/L, Background CN = 0 µg/L

Chronic WLA: $C_e = ((21.9 + 0.0)5 - (0.0 * 0.0))/21.9$
 $C_e = 5 \mu\text{g/L}$

Acute WLA: $C_e = ((21.9 + 0.0)22 - (0.0 * 0.0))/21.9$
 $C_e = 22 \mu\text{g/L}$

$LTA_c = 5 \mu\text{g/L} (0.440) = 2.2 \mu\text{g/L}$

[CV = 0.8, 99th Percentile]

$LTA_a = 22 \mu\text{g/L} (0.249) = 5.5 \mu\text{g/L}$

[CV = 0.8, 99th Percentile]

$MDL = 2.2 \mu\text{g/L} * 4.01 = 8.8 \mu\text{g/L}$

[CV = 0.8, 99th Percentile]

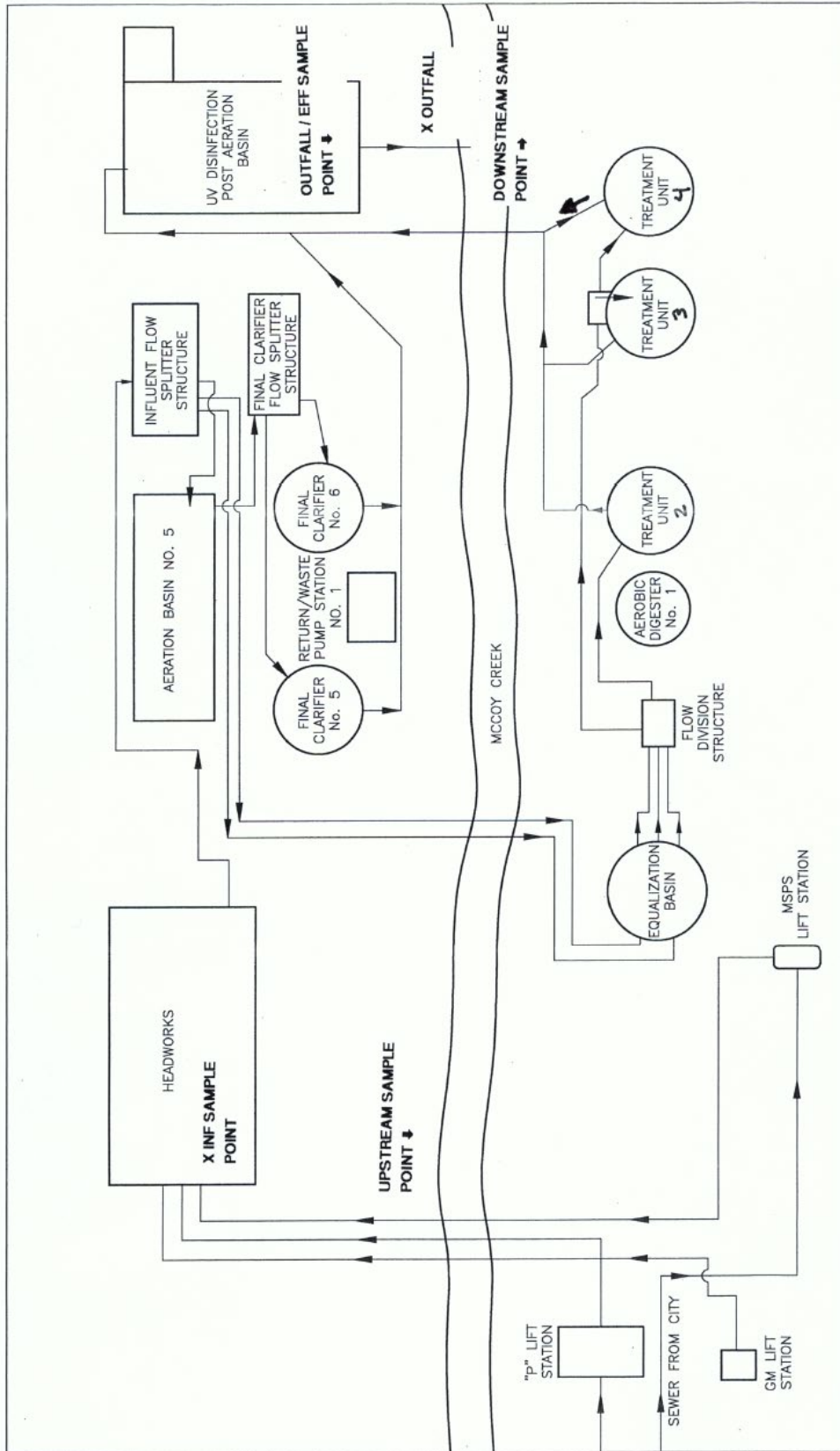
$AML = 2.2 \mu\text{g/L} * 1.75 = 3.9 \mu\text{g/L}$

[CV = 0.8, 95th Percentile, n = 4]

Reviewer: John Hoke
Date: May 16, 2006
Unit Chief: Refaat Mefrakis

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data or anecdotal information are available that may affect the recommended monitoring and effluent limits, please forward these data and information to the author.

APPENDIX – ALTERNATIVE: Process flow diagram



CITY OF WENTZVILLE
WRC PROCESS FLOW DIAGRAM
FIGURE 3-7
WRC FACILITY PLAN



APPENDIX – COST ANALYSIS FOR COMPLIANCE:

**Missouri Department of Natural Resources
 Water Protection Program
 Cost Analysis for Compliance
 (In accordance with RSMo 644.145)**

**Wentzville Water Reclamation Center, Permit Renewal
 City of Wentzville
 Missouri State Operating Permit #MO-0093599**

Section 644.145 RSMo requires the Department of Natural Resources (Department) 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 for publicly-owned treatment works.” This cost analysis does not dictate how the permittee will comply with new permit requirements.

New Permit Requirements

The permit also requires compliance with new requirements for Outfall #003 which includes; the addition of quarterly monitoring for Aluminum, Arsenic, Cadmium, Iron, Lead, monthly monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite, final effluent limits for Cyanide, Selenium, and Silver, annual Total Toxic Organics monitoring, and an annual Chronic Whole Effluent Toxicity test, the revision of Copper limits. Monitoring for BOD₅ was increased to monthly, Ammonia and pH to weekly, and Oil & Grease to quarterly. This permit includes the addition of Permitted Feature INF and associated monthly Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite monitoring. This permit includes the addition of Permitted Feature SM1 and associated monthly Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite monitoring. This permit includes the addition of Permitted Feature SM2 and associated monthly Total Hardness, pH, and Temperature monitoring. Special conditions were updated to include the requirement to develop and implement a Stormwater Pollution Prevention Plan.

Connections: The number of connections was reported by the permittee on the Financial Questionnaire.

Connection Type	Number
Residential	13,533
Commercial	648
Industrial	15
Total	14,196

Data Collection for this Analysis

This cost analysis is based on data available to the Department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City’s financial and socioeconomic situation. The financial questionnaire available to permittees on the Department’s website (<http://dnr.mo.gov/forms/780-2511-f.pdf>) is a required attachment to the permit renewal application. If the financial questionnaire is not submitted with the renewal application, the Department sends a request to complete the form with the welcome correspondence. If certain data was not provided by the permittee to the Department and the data is not obtainable through readily available sources, this analysis will state that the information is “unknown”.

Eight Criteria of 644.145 RSMo

The Department must consider the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with new permit requirements.

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

Criterion 1 Table. Current Financial Information for the City of Wentzville	
Current Monthly User Rates per 5,000 gallons*	\$30.49
Median Household Income (MHI) ¹	\$83,807
Current Annual Operating Costs (excludes depreciation)	\$6,660,144

*User Rates were reported by the permittee on the Financial Questionnaire

(2) Affordability of pollution control options for the individuals or households at or below the median household income level of the community;

The following tables outline the estimated costs of the new permit requirements:

Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements			
New Requirement	Frequency	Estimated Cost	Estimated Annual Cost
Total Phosphorus – Influent	Monthly	\$24 x 12	\$288
Total Kjeldahl Nitrogen - Influent	Monthly	\$33 x 12	\$396
Nitrate + Nitrite - Influent	Monthly	\$40 x 12	\$480
Ammonia - Influent	Monthly	\$20 x 12	\$240
Total Hardness - SM2	Monthly	\$21 x 12	\$252
pH - SM2	Monthly	\$0	\$0
Temperature - SM2	Monthly	\$0	\$0
Ammonia - effluent	Weekly Ω	\$20 x 40	\$800
pH - effluent	Weekly Ω	\$0	\$0
BOD ₅ - effluent	Monthly \S	\$41 x 8	\$328
Total Phosphorus – Effluent	Monthly	\$24 x 12	\$288
Total Kjeldahl Nitrogen - Effluent	Monthly	\$33 x 12	\$396
Nitrate + Nitrite - Effluent	Monthly	\$40 x 12	\$480
Total Recoverable Arsenic	Twice/year	\$20 x 2	\$40
Total Recoverable Selenium	Monthly	\$20 x 12	\$240
Chronic WET test	Annually	\$1,550	\$1,550
SWPPP	Cost estimated for 5 years	\$10,000	\$2,000
Total Estimated Annual Cost of New Permit Requirements			\$7,778

\S - currently sampling quarterly

Ω - currently sampling monthly

Criterion 2B Table. Estimated Costs for New Permit Requirements		
(1)	Estimated Annual Cost	\$7,778
(2)	Estimated Monthly User Cost for New Requirements ²	\$0.05
	Estimated Monthly User Cost for New Requirements as a Percent of MHI ³	0.001%
(3)	Total Monthly User Cost*	\$30.54
	Total Monthly User Cost as a Percent of MHI ⁴	0.44%

* Current User Rate + Estimated Monthly Costs of New Sampling Requirements

The Department does not expect any additional costs for the facility to meet the effluent limitations for Cyanide, Selenium, and Silver as these parameters are not found in normal domestic wastewater and will be addressed by the facility evaluating industrial contributions to the wastewater treatment collection system and determine if more stringent pretreatment limitations are required or by using test methods with detection limits below the Water Quality Standards.

The Department does not expect any additional costs for the facility to meet the effluent limitations for Copper as the facility has demonstrated the ability to meet the recalculated limits. Since October 2014, the facility has not exceeded the proposed final effluent limits for Copper.

Due to the minimal cost associated with new permit requirements, the Department anticipates an extremely low to no rate increase will be necessary, which could impact individuals or households of this community.

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

This analysis is being conducted based on new requirements in the permit, which will not require the addition of new control technologies at the facility. However, the new sampling requirements are being established in order to provide data regarding the health of the receiving stream's aquatic life and to ensure that the existing permit limits are providing adequate protection of aquatic life. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri's water quality standards fulfills the goal of restoring and maintaining the chemical, physical, and biological integrity of the receiving stream; and, where attainable, it achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water.

Nutrient Monitoring: Nutrients are mineral compounds that are required for organisms to grow and thrive. Of the six (6) elemental macronutrients, nitrogen and phosphorus are generally not readily available and limit growth of organisms. Excess nitrogen and phosphorus will cause a shift in the ecosystem's food web. Once excess nitrogen and phosphorus are introduced into a waterbody, some species' populations will dramatically increase, while other populations will not be able to sustain life. Competition and productivity are two factors in which nutrients can alter aquatic ecosystems and the designated uses of a waterbody. For example, designated uses, such as drinking water sources and recreational uses, become impaired when algal blooms take over a waterbody. These blooms can cause foul tastes and odors in the drinking water, unsightly appearance, and fish mortality in the waterbody. Some algae also produce toxins that may cause serious adverse health conditions such as liver damage, tumor promotion, paralysis, and kidney damage. The monitoring requirements for nitrogen and phosphorus have been added to the permit to provide data regarding the health of the receiving stream's aquatic life. A healthy ecosystem is beneficial as it provides reduced impacts on human and aquatic health as well as recreational opportunities.

Stormwater Pollution Prevention Plan (SWPPP): Stormwater runoff is water from rain or snowmelt that does not immediately infiltrate into the ground and flows over or through natural or man-made storage or conveyance systems. When undeveloped areas are converted to land uses with impervious surfaces such as buildings, parking lots, and roads, the natural hydrology of the land is altered and can result in increased surface runoff rates, volumes, and pollutant loads. Stormwater runoff picks up industrial pollutants and typically discharges them directly into nearby waterbodies or indirectly via storm sewer systems. Runoff from areas where industrial activities occur can contain toxic pollutants (e.g., heavy metals and organic chemicals) and other pollutants such as trash, debris, and oil and grease, when facility practices allow exposure of industrial materials to stormwater. This increased flow and pollutant load can impair waterbodies, degrade biological habitats, pollute drinking water sources, and cause flooding and hydrologic changes to the receiving water, such as channel erosion. Industrial facilities typically perform a portion of their activities in outdoor areas exposed to the elements. This may include activities such as material storage and handling, vehicle fueling and maintenance, shipping and receiving, and salt storage, all of which can result in pollutants being exposed to precipitation and capable of being carried off in stormwater runoff. Also, facilities may have performed industrial activities outdoors in the past and materials from those activities still remain exposed to precipitation. In addition, accidental spills and leaks, improper waste disposal, and illicit connections to storm sewers may also lead to exposure of pollutants to stormwater.

A SWPPP is a written document that identifies the industrial activities conducted at the site, including any structural control practices, which the industrial facility operator will implement to prevent pollutants from making their way into stormwater runoff. The SWPPP also must include descriptions of other relevant information, such as the physical features of the facility, and procedures for spill prevention, conducting inspections, and training of employees. The SWPPP is intended to be a "living" document, updated as necessary, such that when industrial activities or stormwater control practices are modified or replaced, the SWPPP is similarly revised to reflect these changes.

Metals Limits and Monitoring: Metals dissolve in water and are easily absorbed by fish and other aquatic organisms. Small concentrations can be toxic because metals undergo bioconcentration, which means that their concentration in an organism is higher than in water. Metal toxicity produces adverse biological effects on an organism's survival, activity, growth, metabolism, or reproduction. Metals can be lethal or harm the organism without killing it directly. Adverse effects on an organism's activity, growth, metabolism, and reproduction are examples of sub-lethal effects.

In order for a metal to be toxic, it needs to enter the body of the exposed organism and interact with the surface or interior of cells. The pathways by which this happens includes diffusion into the bloodstream via the gills and skin, as fish become exposed by drinking water or eating sediments contaminated with the metal, or eating other animals or plants that became exposed to the metal. Humans become exposed to metals via analogous pathways: diffusion into the bloodstream via the lungs and skin, drinking contaminated water, and eating contaminated food.

Whole Effluent Toxicity (WET) test: The WET Test is a quantifiable method of determining if discharge from a facility may be causing toxicity to aquatic life by itself or in combination with receiving stream water. WET tests are required under 10 CSR 20-6.010(8)(A)4 to be performed by specialists properly trained in conducting the test according to 40 CFR 136. This test will help ensure that the existing permit limits are providing adequate protection for aquatic life.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The community reported that their outstanding debt for their current wastewater collection and treatment systems is \$25,119,545 as of December 31, 2017. The community reported that each user pays \$30.49 monthly, of which, \$17.00 is used toward payments on the current outstanding debt.

As shown in Criterion 2, the projected user rate is \$30.54.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

The following table characterizes the current overall socioeconomic condition of the community as compared to the overall socioeconomic condition of Missouri. The following information was compiled using the latest U.S. Census data.

Criterion 5 Table. Socioeconomic Data ^{1, 5-9} for the City of Wentzville

No.	Administrative Unit	Wentzville City	Missouri State
1	Population (2017)	35,768	6,075,300
2	Percent Change in Population (2000-2017)	418.7%	8.6%
3	2017 Median Household Income (in 2018 Dollars)	\$83,807	\$52,801
4	Percent Change in Median Household Income (2000-2017)	17.7%	-7.7%
5	Median Age (2017)	33.2	38.4
6	Change in Median Age in Years (2000-2017)	2.4	2.3
7	Unemployment Rate (2017)	3.3%	5.8%
8	Percent of Population Below Poverty Level (2017)	5.6%	14.6%
9	Percent of Household Received Food Stamps (2017)	4.2%	12.2%
10	(Primary) County Where the Community Is Located	St. Charles County	

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

The City listed the following environmental improvement projects with estimated costs and timeline:

- Reclamation Center Expansion construction: \$7,000,000 in 2019/2020
- MSP, St. Luke's, and Norfolk Southern Lift Stations reconstruction: \$2,250,000 in 2019/2020
- Legion and East Lift Stations reconstruction: \$1,250,000 in 2021/2022
- Bio-Solids Building Expansion construction: \$2,605,000 in 2021/2022
- Crossroads Trunk Relief Sewer reconstruction: \$2,000,000 in 2023/2024

- (7) 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;**

The new requirements associated with this permit will not impose a financial burden on the community, nor will they require the City of Wentzville to seek funding from an outside source.

- (8) An assessment of any other relevant local community economic conditions.**

The City reported that the rapid community growth has accelerated the City's need to expand the Wentzville Water Reclamation facility.

Conclusion and Finding

As a result of new regulations, the Department is proposing modifications to the current operating permit that may require the permittee to increase monitoring. The Department has considered the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

This analysis examined whether the new sampling requirements affect the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. After reviewing the above criteria, the Department finds that the new sampling requirements may result in a low burden with regard to the community's overall financial capability and a low financial impact for most individual customers/households; therefore, the new permit requirements are affordable.

References

- (A) 2017 MHI in 2017 Dollar: United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars). http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B19013&prodType=table.

(B) 2000 MHI in 1999 Dollar: (1) For United States, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-1 Part 1. United States Summary, Table 5. Work Status and Income in 1999: 2000, Washington, DC. <https://www.census.gov/prod/cen2000/phc-2-1-pt1.pdf>. (2) For Missouri State, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-27, Missouri, Table 10. Work Status and Income in 1999: 2000, Washington, DC. <https://www.census.gov/prod/cen2000/phc-2-27-pt1.pdf>.

(C) 2018 CPI, 2017 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2018) Consumer Price Index - All Urban Consumers, U.S. City Average. All Items. 1982-84=100. http://data.bls.gov/timeseries/CUUR0000SA0?data_tool=Xgtable.

(D) 2017 MHI in 2018 Dollar = 2017 MHI in 2017 Dollar x 2018 CPI / 2017 CPI; 2000 MHI in 2018 Dollar = 2000 MHI in 1999 Dollar x 2018 CPI / 1999 CPI.

(E) Percent Change in Median Household Income (2000-2017) = (2017 MHI in 2018 Dollar - 2000 MHI in 2018 Dollar) / (2000 MHI in 2018 Dollar).
- $(\$7,778/14,196)/12 = \0.05 (Estimated Monthly User Cost for New Requirements)
- $(\$0.05/(\$83,807/12))100\% = 0.001\%$ (New Sampling Only)
- $(\$30.54/(\$83,807/12))100\% = 0.44\%$ (Total User Cost)
- (A) Total Population in 2017: United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B01003&prodType=table. (B) Total Population in 2000: (1) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC. <https://www.census.gov/prod/cen2000/phc-1-1-pt1.pdf>. (2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC. <http://www.census.gov/prod/cen2000/phc-2-27-pt1.pdf>.

(C) Percent Change in Population (2000-2017) = (Total Population in 2017 - Total Population in 2000) / (Total Population in 2000).
- (A) Median Age in 2017: United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B01002&prodType=table.

(B) Median Age in 2000: (1) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC., Page 2. <https://www.census.gov/prod/cen2000/phc-1-1-pt1.pdf>. (2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC., Pages 64-92. <http://www.census.gov/prod/cen2000/phc-2-27-pt1.pdf>.

(C) Change in Median Age in Years (2000-2017) = (Median Age in 2017 - Median Age in 2000).
- United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, B23025: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B23025&prodType=table.
- United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S1701&prodType=table.
- United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B22003: Receipt of Food Stamps/SNAP in the Past 12 Months by Poverty Status in the Past 12 Months for Households - Universe: Households. http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B22003&prodType=table



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ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
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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;
 - 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. **Non-compliance 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. **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.
 4. **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.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **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.
 7. **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.
- 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.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - 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.

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



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- 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.
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.



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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.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, 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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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

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MISSOURI CLEAN WATER COMMISSION
August 1, 2019**

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.
2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Biosolids and Sludge Use and Disposal Practices:
 - a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.
4. Biosolids or Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee's design sludge capacity is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge
5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.
6. This permit does not preclude the enforcement of other applicable 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 biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department may modify a site-specific permit following permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR § 124.10, and 40 CFR § 501.15(a)(2)(ix)(E).
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures 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, feed 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 Part 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 (PSRP) in accordance with 40 CFR Part 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. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limited to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater 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. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. 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.
14. 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), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined 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.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RSMo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RSMo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

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

1. Permittees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
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, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or 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 biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or 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 biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or 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 biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes “Class A” or “Class B” biosolids derived from domestic wastewater 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.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
 - a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
 - b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
 - c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
 - d. Animal grazing shall not be allowed for 30 days after application of biosolids.
 - e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
 - f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
 - g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
 - h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.
5. Pollutant limits
 - a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
 - b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). 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 achieve pollutant concentration below those identified in Table 1, below.
 - c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

Biosolids ceiling concentration	
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

- d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track pollutant loading onto application sites for parameters that have exceeded the low metal concentration limits.

TABLE 2

Biosolids Low Metal Concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

- e. Annual pollutant loading rate.

Table 3

Biosolids Annual Loading Rate	
Pollutant	Kg/ha (lbs./ac) per year
Arsenic	2.0 (1.79)
Cadmium	1.9 (1.70)
Copper	75 (66.94)
Lead	15 (13.39)
Mercury	0.85 (0.76)
Nickel	21 (18.74)
Selenium	5.0 (4.46)
Zinc	140 (124.96)

- f. Cumulative pollutant loading rates.

Table 4

Biosolids Cumulative Pollutant Loading Rate	
Pollutant	Kg/ha (lbs./ac)
Arsenic	41 (37)
Cadmium	39 (35)
Copper	1500 (1339)
Lead	300 (268)
Mercury	17 (15)
Nickel	420 (375)
Selenium	100 (89)
Zinc	2800 (2499)

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.

- Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
- Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
- The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

- 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. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis.
 - ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.
 - iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.
- d. Buffer zones are as follows:
- i. 300 feet of a water supply well, sinkhole, 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 of dwellings or public use areas;
 - iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);
 - v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.
 - vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.
- e. Slope limitation for application sites are as follows:
- i. For slopes less than or equal to 6 percent, 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 percent, 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.
 - iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.
- f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:
- i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
 - ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
 - iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic 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 mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. 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.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. 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 sludges and/or biosolids. 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. Biosolids or sludge 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. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
 - 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. Alternative, site-specific application rates may be included in the closure plan for department consideration.
 - 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. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are “similar treatment works” under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. 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. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, 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. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure 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 plant, all biosolids or 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. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.
 - c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo 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, reclamation, or other beneficial use. Other solid wastes must be removed.
8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, 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 Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, biosolids or sludge 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

Biosolids or Sludge produced and disposed (Dry Tons per Year)	Monitoring Frequency (See Notes 1, and 2)		
	Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium	Nitrogen TKN, Nitrogen PAN ¹	Priority Pollutants ²
319 or less	1/year	1 per month	1/year
320 to 1650	4/year	1 per month	1/year
1651 to 16,500	6/year	1 per month	1/year
16,501+	12/year	1 per month	1/year

¹Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

² Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pre-treatment program. Monitoring requirements may be modified and incorporated into the operating permit by the Department on a case-by-case basis.

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: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. 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.
4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – 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 Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
- a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
 - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:
Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:

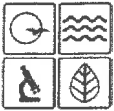
DNR regional or other applicable office listed in the permit (see cover letter of permit)

ATTN: Sludge Coordinator

Reports to EPA must be electronically submitted online via the Central Data Exchange at: <https://cdx.epa.gov/> Additional information is available at: <https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws>

5. Annual report contents. The annual report shall include the following:
 - a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
 - b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/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 and 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 using a 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 biosolids or sludge 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. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - 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 and phosphorus. If no soil was tested during the year, report the last date when tested and the results.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**FORM B2 – APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT
 RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN
 100,000 GALLONS PER DAY**

FACILITY NAME
 Wentzville Water Reclamation Center

PERMIT NO. MO-0093599	COUNTY St. Charles
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APPLICATION OVERVIEW

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

BASIC APPLICATION INFORMATION

- A. Basic application information for all applicants. All applicants must complete Part A.
- B. Additional application information for all applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.
 SIUs are defined as:
 - 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
 - 2. Any other industrial user that meets one or more of the following:
 - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
 - iv. Is otherwise required by the permitting authority to provide the information.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

ALL APPLICANTS MUST COMPLETE PARTS A, B and C



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
FORM B2 – APPLICATION FOR AN OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY	
CHECK NUMBER	254755
DATE RECEIVED	10-5-20
FEE SUBMITTED	\$200.00
JET PAY CONFIRMATION NUMBER	

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

An operating permit for a new or unpermitted facility. Construction Permit # _____
 (Include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)
 An operating permit renewal: Permit #MO- _____ Expiration Date _____
 An operating permit modification: Permit #MO-0093599 Reason: Submittal of Construction Permit Application

1.1 Is the appropriate fee included with the application (see instructions for appropriate fee)? YES NO

2. FACILITY

NAME Wentzville Water Reclamation Center (WRC)		TELEPHONE NUMBER WITH AREA CODE (636) 639-2078	
ADDRESS (PHYSICAL) 2455 Mette Road	CITY Wentzville	STATE MO	ZIP CODE 63385

2.1 LEGAL DESCRIPTION (Facility Site): Sec. 2, T 47N, R 1E COUNTY St. Charles

2.2 UTM Coordinates Easting (X): 684925 Northing (Y): 430837
 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: McCoy Creek

2.4 Number of Outfalls: 1 wastewater outfalls: 1 stormwater outfalls: 0 instream monitoring sites:

3. OWNER: The owner of the regulated activity/discharge being applied for and is not necessarily the owner of the real property on which the activity or discharge is occurring.

NAME City of Wentzville		EMAIL ADDRESS susan.spiegel@wentzvillemo.org	TELEPHONE NUMBER WITH AREA CODE 636-639-2049
ADDRESS 1001 Schroeder Creek Boulevard	CITY Wentzville	STATE MO	ZIP CODE 63385

3.1 Request review of draft permit prior to Public Notice? YES NO

3.2 Are you a Publically Owned Treatment Works (POTW)? YES NO
 If yes, is the Financial Questionnaire attached? YES NO See: <https://dnr.mo.gov/forms/780-2511-f.pdf>

3.3 Are you a Privately Owned Treatment Facility? YES NO

3.4 Are you a Privately Owned Treatment Facility regulated by the Public Service Commission (PSC)? YES NO

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME City of Wentzville/Susan Spiegel, Director of Public Works		EMAIL ADDRESS susan.spiegel@wentzvillemo.org	TELEPHONE NUMBER WITH AREA CODE 636-639-2049
ADDRESS 1001 Schroeder Creek Boulevard	CITY Wentzville	STATE MO	ZIP CODE 63385

If the Continuing Authority is different than the Owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

5. OPERATOR

NAME Daniel Todd	TITLE Superintendent Wastewater Systems	CERTIFICATE NUMBER (IF APPLICABLE) 5528
EMAIL ADDRESS dan.todd@wentzvillemo.org	TELEPHONE NUMBER WITH AREA CODE 636-639-2071	

6. FACILITY CONTACT

NAME Daniel Todd	TITLE Superintendent Wastewater Systems		
EMAIL ADDRESS dan.todd@wentzvillemo.org	TELEPHONE NUMBER WITH AREA CODE 636-639-2071		
ADDRESS 2455 Mette Road	CITY Wentzville	STATE MO	ZIP CODE 63385

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 0093599	OUTFALL NO. 003
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PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

7.1 Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – Chlorination and Dechlorination), influents, and outfalls. Specify where samples are taken. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram. Attach sheets as necessary.

Refer to "Supplemental Information"

FACILITY NAME Wentzville Water Reclamation Center		PERMIT NO. MO- 093599	OUTFALL NO. 003
PART A – BASIC APPLICATION INFORMATION			
7. FACILITY INFORMATION (continued)			
<p>7.2 Map. Attach to this application an aerial or topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. A map can be obtained by visiting the following website: https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce</p> <ol style="list-style-type: none"> The area surrounding the treatment plant, including all unit processes. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable. The actual point of discharge. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, or disposed. 			
7.3 Facility SIC Code: 4952		Discharge SIC Code: 4952	
7.4 Number of people presently connected or population equivalent (P.E.): 39,000		Design P.E. 47,800	
<p>7.5 Connections to the facility: 14,044 Residential and Commercial Number of units presently connected: 38k Residential: <u>See above</u> Commercial: <u>See above</u> Industrial <u>See above</u></p>			
7.6 Design Flow 5.3 MGD Average Day Capacity		Actual Flow 4.31 MGD Avg Day (2017)	
<p>7.7 Will discharge be continuous through the year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Discharge will occur during the following months: <u>January through December</u> How many days of the week will discharge occur? <u>7 days per week</u></p>			
<p>7.8 Is industrial wastewater discharged to the facility? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, describe the number and types of industries that discharge to your facility. Attach sheets as necessary 2 Categorical SIU's: Missouri Heat Treat and General Motors. 1 Non-Categorical IU: DuBois Chemical</p> <p>Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.</p>			
7.9 Does the facility accept or process leachate from landfills?:		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
7.10 Is wastewater land applied? If yes, please attach Form I See: https://dnr.mo.gov/forms/780-1686-f.pdf		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
7.11 Does the facility discharge to a losing stream or sinkhole?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
7.12 Has a wasteload allocation study been completed for this facility?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
8. LABORATORY CONTROL INFORMATION			
LABORATORY WORK CONDUCTED BY PLANT PERSONNEL			
Lab work conducted outside of plant.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Push-button or visual methods for simple test such as pH, settleable solids.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

FACILITY NAME Wentzville Water Reclamation Center		PERMIT NO. MO- 093599	OUTFALL NO. 003	
PART A – BASIC APPLICATION INFORMATION				
9. SLUDGE HANDLING, USE AND DISPOSAL				
9.1	Is the sludge a hazardous waste as defined by 10 CSR 25?		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
9.2	Sludge production (Including sludge received from others): Design Dry Tons/Year 935		Actual Dry Tons/Year 542	
9.3	Sludge storage provided: <u>260</u> Cubic feet; <u>7</u> Days of storage; <u>2.39</u> Average percent solids of sludge;			
	<input type="checkbox"/> No sludge storage is provided. <input type="checkbox"/> Sludge is stored in lagoon.			
9.4	Type of storage:	<input checked="" type="checkbox"/> Holding Tank	<input checked="" type="checkbox"/> Building	
		<input type="checkbox"/> Basin	<input type="checkbox"/> Lagoon	
		<input type="checkbox"/> Concrete Pad	<input type="checkbox"/> Other (Describe) _____	
9.5	Sludge Treatment:			
	<input type="checkbox"/> Anaerobic Digester	<input type="checkbox"/> Storage Tank	<input checked="" type="checkbox"/> Lime Stabilization	<input type="checkbox"/> Lagoon
	<input checked="" type="checkbox"/> Aerobic Digester	<input type="checkbox"/> Air or Heat Drying	<input type="checkbox"/> Composting	<input type="checkbox"/> Other (Attach Description)
9.6	Sludge use or disposal:			
	<input checked="" type="checkbox"/> Land Application	<input type="checkbox"/> Contract Hauler	<input checked="" type="checkbox"/> Hauled to Another Treatment Facility	<input type="checkbox"/> Solid Waste Landfill
	<input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years)	<input type="checkbox"/> Other (Attach Explanation Sheet) _____		<input type="checkbox"/> Incineration
9.7	Person responsible for hauling sludge to disposal facility:			
	<input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (complete below)			
NAME		EMAIL ADDRESS		
City of Wentzville		dan.todd@wentzvillemo.org		
ADDRESS	CITY	STATE	ZIP CODE	
2455 Mette Road	Wentzville	MO	63385	
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.		
Daniel Todd	636-639-2071	MO- 0093599		
9.8	Sludge use or disposal facility:			
	<input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (Complete below)			
NAME		EMAIL ADDRESS		
City of Wentzville		dan.todd@wentzvillemo.org		
ADDRESS	CITY	STATE	ZIP CODE	
2455 Mette Rd.	Wentzville	MO	63385	
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.		
Daniel Todd	636-639-2071	MO- 0093599		
9.9	Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503?			
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain)			
END OF PART A				

FACILITY NAME Wentzville Water Reclamation Center		PERMIT NO. MO- 093599	OUTFALL NO. 003
PART B – ADDITIONAL APPLICATION INFORMATION			
10. COLLECTION SYSTEM			
10.1 Are there any municipal satellite collection systems connected to this facility? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please list all connected to this facility, contact phone number and length of each collection system			
FACILITY	CONTACT PHONE NUMBER		LENGTH OF SYSTEM (FEET OR MILES)
City of Flint Hill	636-327-4441		Est. 6.3 Miles (domestic)
10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) <u>258</u> miles			
10.3 Does significant infiltration occur in the collection system? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, briefly explain any steps underway or planned to minimize inflow and infiltration: Repairing, replacing, lining and grouting sanitary sewer systems to include manholes and Lateral connections based on inspections/videos of systems.			
11. BYPASSING			
Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, explain:			
12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)			
Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of the contractor? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)			
NAME			
MAILING ADDRESS			
TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
RESPONSIBILITIES OF CONTRACTOR			
13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION			
Provide information about any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses for each. Future plant expansions are outlined in the facility plan submitted with this application.			

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data for each outfall through which effluent is discharged. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcd91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8

Outfall Number 003

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	4.99	S.U.	7.38	S.U.	259
pH (Maximum)	8.02	S.U.	7.38	S.U.	259
Flow Rate	13.92	MGD	4.31	MGD	362

*For pH report a minimum and a maximum daily value


POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		

Conventional and Nonconventional Compounds

BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD ₅	7.00	mg/L	4.29	mg/L	7	SM-5210 8-2011	
	CBOD ₅		mg/L		mg/L			
E. COLI	211	#/100 mL	14.29	#/100 mL	30	SM 9223B		
TOTAL SUSPENDED SOLIDS (TSS)	b	mg/L	8.78	mg/L	141	SM-2540 0-2011		
TOTAL PHOSPHORUS		mg/L		mg/L				
TOTAL KJELDAHL NITROGEN		mg/L		mg/L				
NITRITES + NITRATES		mg/L		mg/L				
AMMONIA AS N	6.53	mg/L	.59	mg/L	31	EPA 350.1		
CHLORINE* (TOTAL RESIDUAL, TRC)		mg/L		mg/L				
DISSOLVED OXYGEN	9.30	mg/L	8.46	mg/L	3	SM-4500-0 G-2011		
OIL and GREASE	9.00	mg/L	2.84	mg/L	15	EPA-1664-B		
OTHER: _____		mg/L		mg/L				

*Report only if facility chlorinates

END OF PART B

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
PART C – CERTIFICATION		
15. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM		
Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data. One of the following must be checked in order for this application to be considered complete. Please visit https://dnr.mo.gov/forms/780-2204-f.pdf to access the eDMR application.		
<input type="checkbox"/> - You have completed and submitted with this permit application the required documentation to participate in the eDMR system. <input checked="" type="checkbox"/> - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system. <input type="checkbox"/> - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.		
16. JETPAY		
Permit fees may be payed online by credit card or eCheck through a system called JetPay. Use the URL provided to access JetPay and make an online payment. New Site Specific Permit: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/ Construction Permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/ Modification Fee: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/		
17. CERTIFICATION		
All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.		
ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.		
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		
PRINTED NAME Susan Spiegel	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL) Director of Public Works	
SIGNATURE 		
TELEPHONE NUMBER WITH AREA CODE 636-639-2030		
DATE SIGNED 10/2/2020		
Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.		
Send Completed Form to: Department of Natural Resources Water Protection Program ATTN: NPDES Permits and Engineering Section P.O. Box 176 Jefferson City, MO 65102-0176		
END OF PART C		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH PARTS OF FORM B2 YOU MUST COMPLETE.		
Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:		
1. Your facility design flow is equal to or greater than 1,000,000 gallons per day. 2. Your facility is a pretreatment treatment works. 3. Your facility is a combined sewer system.		
Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.		

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

Refer to the APPLICATION OVERVIEW to determine whether Part D applies to the treatment works.

If the treatment works has a design flow greater than or equal to 1 MGD or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information for each outfall through which effluent is discharged. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected and analyzed using sufficiently sensitive methods found in 40 CFR Part 136. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcd91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8. In addition, all data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three pollutant scans** and must be no more than four and one-half years prior to the date of the permit application submittal. In the blank rows provided at the end of this list, include any additional data for pollutants not specifically listed in this form. Information may be written in the blanks below or provided as attached documents containing the laboratory test results.

Outfall Number (Complete Once for Each Outfall Discharging Effluent to Waters of the State.) **003**

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples			
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS												
ALUMINUM	<.200	mg/L		<0.200	mg/L					3	EPA-200.7	
ANTIMONY	0.015	mg/L		.011	mg/L					3	EPA-200.7	
ARSENIC	.008	mg/L		0.006	mg/L					3	EPA-200.7	
BERYLLIUM	<0.004	mg/L		<0.004	mg/L					3	EPA-200.7	
CADMIUM	<0.003	mg/L		<0.003	mg/L					3	SM-3111 B	
CHROMIUM III	<0.005	mg/L		<0.005	mg/L					3	SM-3500-Cr	
CHROMIUM VI	<0.005	mg/L		<0.005	mg/L					3	SM-3500-Cr	
COPPER	0.006	mg/L		0.006	mg/L					3	SM-3111 B	
IRON	0.078	mg/L		0.070	mg/L					3	SM-3111 B	
LEAD	<0.005	mg/L		<0.005	mg/L					3	EPA-200.7	
MERCURY	<.0002	mg/L		<.0002	mg/L					3	SM-3112 B	
NICKEL	0.026	mg/L		0.019	mg/L					3	SM-3111 B	
SELENIUM	0.007	mg/L		0.006	mg/L					3	EPA-200.7	
SILVER	0.005	mg/L		0.004	mg/L					3	SM-3111 B	
THALLIUM	<0.002	mg/L		<0.002	mg/L					3	EPA-200.7	
ZINC	0.067	mg/L		0.044	mg/L					3	SM-3111 B	
CYANIDE	<0.005	mg/L		<0.005	mg/L					3	SM-4500 CN	
TOTAL PHENOLIC COMPOUNDS	<0.050	mg/L		<0.050	mg/L					3	EPA-420.1	
HARDNESS (as CaCO ₃)	278	mg/L		229	mg/L					3	SM-2340 C	
VOLATILE ORGANIC COMPOUNDS												
ACROLEIN	ND	mg/L		ND	mg/L					3	EPA 624.1	
ACRYLONITRILE	ND	mg/L		ND	mg/L					3	EPA 624.1	
BENZENE	ND	mg/L		ND	mg/L					3	EPA 624.1	
BROMOFORM	ND	mg/L		ND	mg/L					3	EPA 624.1	
CARBON TETRACHLORIDE	ND	mg/L		ND	mg/L					3	EPA 624.1	

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

Complete Once for Each Outfall Discharging Effluent to Waters of the State

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples			
CHLOROBENZENE												
CHLORODIBROMO-METHANE												
CHLOROETHANE												
2-CHLORO-ETHYL VINYL ETHER												
CHLOROFORM												
DICHLOROBROMO-METHANE												
1,1-DICHLORO-ETHANE												
1,2-DICHLORO-ETHANE												
TRANS-1,2-DICHLOROETHYLENE												
1,1-DICHLORO-ETHYLENE												
1,2-DICHLORO-PROPANE												
1,3-DICHLORO-PROPYLENE												
ETHYLBENZENE												
METHYL BROMIDE												
METHYL CHLORIDE												
METHYLENE CHLORIDE												
1,1,2,2-TETRA-CHLOROETHANE												
TETRACHLORO-ETHANE												
TOLUENE												
1,1,1-TRICHLORO-ETHANE												
1,1,2-TRICHLORO-ETHANE												
TRICHLOROETHYLENE												
VINYL CHLORIDE												

ACID-EXTRACTABLE COMPOUNDS

P-CHLORO-M-CRESOL												
2-CHLOROPHENOL												
2,4-DICHLOROPHENOL												
2,4-DIMETHYLPHENOL												
4,6-DINITRO-O-CRESOL												
2,4-DINITROPHENOL												
2-NITROPHENOL												
4-NITROPHENOL												

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples			
PENTACHLOROPHENOL												
PHENOL												
2,4,6-TRICHLOROPHENOL												
BASE-NEUTRAL COMPOUNDS												
ACENAPHTHENE												
ACENAPHTHYLENE												
ANTHRACENE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
3,4-BENZO-FLUORANTHENE												
BENZO(GH) PHERYLENE												
BENZO(K) FLUORANTHENE												
BIS (2-CHLOROTHOXY) METHANE												
BIS (2-CHLOROETHYL) – ETHER												
BIS (2-CHLOROISO-PROPYL) ETHER												
BIS (2-ETHYLHEXYL) PHTHALATE												
4-BROMOPHENYL PHENYL ETHER												
BUTYL BENZYL PHTHALATE												
2-CHLORONAPH-THALENE												
4-CHLORPHENYL PHENYL ETHER												
CHRYSENE												
DI-N-BUTYL PHTHALATE												
DI-N-OCTYL PHTHALATE												
DIBENZO (A,H) ANTHRACENE												
1,2-DICHLORO-BENZENE												
1,3-DICHLORO-BENZENE												
1,4-DICHLORO-BENZENE												
3,3-DICHLORO-BENZIDINE												
DIETHYL PHTHALATE												
DIMETHYL PHTHALATE												

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples			
2,4-DINITRO-TOLUENE												
2,6-DINITRO-TOLUENE												
1,2-DIPHENYL-HYDRAZINE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLO-PENTADIENE												
HEXACHLOROETHANE												
INDENO (1,2,3-CD) PYRENE												
ISOPHORONE												
NAPHTHALENE												
NITROBENZENE												
N-NITROSODI-PROPYLAMINE												
N-NITROSODI-METHYLAMINE												
N-NITROSODI-PHENYLAMINE												
PHENANTHRENE												
PYRENE												
1,2,4-TRICHLOROBENZENE												

Use this space (or a separate sheet) to provide information on other pollutants not specifically listed in this form.

END OF PART D
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART E – TOXICITY TESTING DATA

19. TOXICITY TESTING DATA

Refer to the APPLICATION OVERVIEW to determine whether Part E applies to the treatment works.

Publicly owned treatment works, or POTWs, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.

- A. POTWs with a design flow rate greater than or equal to 1 million gallons per day
- B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)
- C. POTWs required by the permitting authority to submit data for these parameters
 - At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
 - If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: _____ chronic 4 acute

Complete the following chart for the last three whole effluent toxicity tests. Allow one column per test. Copy this page if more than three tests are being reported.

	Most Recent	2 ND Most Recent	3 RD Most Recent
A. Test Information			
Test Method Number	EAS LOG #2113329	EAS LOG #2006309	EAS LOG #1901212
Final Report Number	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
Outfall Number	003	003	003
Dates Sample Collected	8/15/17 - 8/16/17	7/18/16 - 7/19/16	7/20/15 - 7/21/15
Date Test Started	8/16/17	7/20/16	7/24/15
Duration	24 HRS	48 HRS	48 HRS
B. Toxicity Test Methods Followed			
Manual Title	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
Edition Number and Year of Publication	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
Page Number(s)	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	X	X	X
Grab			
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After Disinfection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
After Dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	POST UV AERATION	POST UV AERATION	POST UV AERATION
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acute Toxicity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G. Provide the type of test performed			
Static	<input type="checkbox"/> SEE ATTACHED	<input type="checkbox"/> SEE ATTACHED	<input type="checkbox"/> SEE ATTACHED
Static-renewal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flow-through	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Receiving Water	<input checked="" type="checkbox"/> McCoy Creek	<input checked="" type="checkbox"/> McCoy Creek	<input checked="" type="checkbox"/> McCoy Creek

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003	
PART E – TOXICITY TESTING DATA			
19. TOXICITY TESTING DATA (continued)			
	Most Recent	Second Most Recent	Third Most Recent
I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh Water	X	X	X
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	SEE ATTACHED	SEE ATTACHED	SEE ATTACHED
Salinity			
Temperature			
Ammonia			
Dissolved Oxygen			
L. Test Results			
Acute:			
Percent Survival in 100% Effluent			
LC ₅₀			
95% C.I.			
Control Percent Survival			
Other (Describe)			
Chronic:			
NOEC			
IC ₂₅			
Control Percent Survival			
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (Describe)			
Is the treatment works involved in a toxicity reduction evaluation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, describe:			
If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.			
Date Submitted (MM/DD/YYYY)			
Summary of Results (See Instructions)			
END OF PART E			
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.			

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART E – TOXICITY TESTING DATA

19. TOXICITY TESTING DATA

Refer to the APPLICATION OVERVIEW to determine whether Part E applies to the treatment works.

Publicly owned treatment works, or POTWs, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.

- A. POTWs with a design flow rate greater than or equal to 1 million gallons per day
- B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)
- C. POTWs required by the permitting authority to submit data for these parameters
 - At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
 - If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: _____ chronic 4 acute

Complete the following chart **for the last three whole effluent toxicity tests**. Allow one column per test. Copy this page if more than three tests are being reported.

	4th Most Recent	2ND Most Recent	3RD Most Recent
A. Test Information			
Test Method Number	EAS LOG #1711901		
Final Report Number	SEE ATTACHED		
Outfall Number	003		
Dates Sample Collected	7/21/14 - 7/22/14		
Date Test Started	7/23/14		
Duration	48 HRS		
B. Toxicity Test Methods Followed			
Manual Title	SEE ATTACHED		
Edition Number and Year of Publication	SEE ATTACHED		
Page Number(s)	SEE ATTACHED		
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	X		
Grab			
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After Disinfection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After Dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	POST UV AERATION		
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acute Toxicity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. Provide the type of test performed			
Static	<input type="checkbox"/> SEE ATTACHED	<input type="checkbox"/>	<input type="checkbox"/>
Static-renewal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flow-through	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Receiving Water	<input checked="" type="checkbox"/> McCoy Creek	<input type="checkbox"/>	<input type="checkbox"/>

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART E – TOXICITY TESTING DATA

19. TOXICITY TESTING DATA (continued)

	4th Most Recent	Second Most Recent	Third Most Recent
I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh Water	X		
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	SEE ATTACHED		
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	SEE ATTACHED		
Salinity			
Temperature			
Ammonia			
Dissolved Oxygen			
L. Test Results			
Acute:			
Percent Survival in 100% Effluent			
LC ₅₀			
95% C.I.			
Control Percent Survival			
Other (Describe)			
Chronic:			
NOEC			
IC ₂₅			
Control Percent Survival			
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (Describe)			
Is the treatment works involved in a toxicity reduction evaluation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, describe:			
If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.			
Date Submitted (MM/DD/YYYY)			
Summary of Results (See Instructions)			
END OF PART E			
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.			

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME

Wentzville Water Reclamation Center

PERMIT NO.

MO- 093599

OUTFALL NO.

003

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

Refer to the APPLICATION OVERVIEW to determine whether Part F applies to the treatment works.

20. GENERAL INFORMATION**20.1** Does the treatment works have, or is it subject to, an approved pretreatment program? Yes No**20.2** Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works:

Number of non-categorical SIUs 2 _____

Number of CIUs 0 _____

21. INDUSTRIES CONTRIBUTING MORE THAN 5 PERCENT OF THE ACTUAL FLOW TO THE FACILITY OR OTHER SIGNIFICANT INDUSTRIAL USERS INFORMATION

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME

General Motors

MAILING ADDRESS

1500 East Route A

CITY

Wentzville

STATE

MO

ZIP CODE

63385

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge
Light Truck Assembly (Van and Mid Sized Pickup)**21.2** Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s):

Raw Material(s): Raw materials are shipped to the facility and assembled at the plant. Pollutants of concern are Ni, Zn and COD.

21.3 Flow Ratea. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.
gpd Continuous Intermittentb. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.
gpd Continuous Intermittent**21.4** Pretreatment Standards. Indicate whether the SIU is subject to the following:a. Local Limits Yes No
b. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

21.5 Problems at the treatment works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years? Yes No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

Refer to the APPLICATION OVERVIEW to determine whether Part F applies to the treatment works.

20. GENERAL INFORMATION

20.1 Does the treatment works have, or is it subject to, an approved pretreatment program?
 Yes No

20.2 Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works:
 Number of non-categorical SIUs 2 ____
 Number of CIUs 0 ____

21. INDUSTRIES CONTRIBUTING MORE THAN 5 PERCENT OF THE ACTUAL FLOW TO THE FACILITY OR OTHER SIGNIFICANT INDUSTRIAL USERS INFORMATION

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME
Missouri Heat Treat

MAILING ADDRESS 55 May Rd.	CITY Wentzville	STATE MO	ZIP CODE 63385
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21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge
 Commercial Heat Treat Services, pH Control, Black Oxide

21.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.
 Principal Product(s):

 Raw Material(s): Iron, Oil, Salt, Hydrochloric Acid

21.3 Flow Rate
 a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.
 6,256 gpd Continuous Intermittent
 b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.
 gpd Continuous Intermittent

21.4 Pretreatment Standards. Indicate whether the SIU is subject to the following:
 a. Local Limits Yes No
 b. Categorical Pretreatment Standards Yes No
 If subject to categorical pretreatment standards, which category and subcategory?

21.5 Problems at the treatment works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?
 Yes No
 If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL		
FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES		
22. RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE		
22.1 Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
22.2 Method by which RCRA waste is received. (Check all that apply) <input type="checkbox"/> Truck <input type="checkbox"/> Rail <input type="checkbox"/> Dedicated Pipe		
22.3 Waste Description		
EPA Hazardous Waste Number	Amount (volume or mass)	Units
23. CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER		
23.1 Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Provide a list of sites and the requested information for each current and future site.		
23.2 Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).		
23.3 List the hazardous constituents that are received (or are expected to be received). Included data on volume and concentration, if known. (Attach additional sheets if necessary)		
23.4 Waste Treatment		
a. Is this waste treated (or will it be treated) prior to entering the treatment works? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, describe the treatment (provide information about the removal efficiency):		
b. Is the discharge (or will the discharge be) continuous or intermittent? <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent If intermittent, describe the discharge schedule:		
END OF PART F		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.		

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL		
FACILITY NAME Wentzville Water Reclamation Center	PERMIT NO. MO- 093599	OUTFALL NO. 003
PART G – COMBINED SEWER SYSTEMS		
Refer to the APPLICATION OVERVIEW to determine whether Part G applies to the treatment works.		
24. GENERAL INFORMATION		
24.1 System Map. Provide a map indicating the following: (May be included with basic application information.) A. All CSO Discharges. B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.) C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.		
24.2 System Diagram. Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information: A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary. B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System. C. Locations of In-Line or Off-Line Storage Structures. D. Locations of Flow-Regulating Devices. E. Locations of Pump Stations.		
24.3 Percent of collection system that is combined sewer		
24.4 Population served by combined sewer collection system		
24.5 Name of any satellite community with combined sewer collection system		
25. CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT		
25.1 Description of Outfall a. Outfall Number b. Location c. Distance from Shore (if applicable) _____ ft d. Depth Below Surface (if applicable) _____ ft e. Which of the following were monitored during the last year for this CSO? <input type="checkbox"/> Rainfall <input type="checkbox"/> CSO Pollutant Concentrations <input type="checkbox"/> CSO <input type="checkbox"/> CSO Flow Volume <input type="checkbox"/> Receiving Water Quality f. How many storm events were monitored last year?		
25.2 CSO Events a. Give the Number of CSO Events in the Last Year Events <input type="checkbox"/> Actual <input type="checkbox"/> Approximate b. Give the Average Duration Per CSO Event Hours <input type="checkbox"/> Actual <input type="checkbox"/> Approximate c. Give the Average Volume Per CSO Event Million Gallons <input type="checkbox"/> Actual <input type="checkbox"/> Approximate d. Give the minimum rainfall that caused a CSO event in the last year _____ inches of rainfall		
25.3 Description of Receiving Waters a. Name of Receiving Water b. Name of Watershed/River/Stream System c. U.S. Soil Conservation Service 14-Digit Watershed Code (If Known) d. Name of State Management/River Basin e. U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)		
25.4 CSO Operations Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)		
END OF PART G		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.		

SUPPLEMENTAL INFORMATION FOR CITY OF WENTZVILLE WRC OPERATING PERMIT RENEWAL APPLICATION (FORM B2)

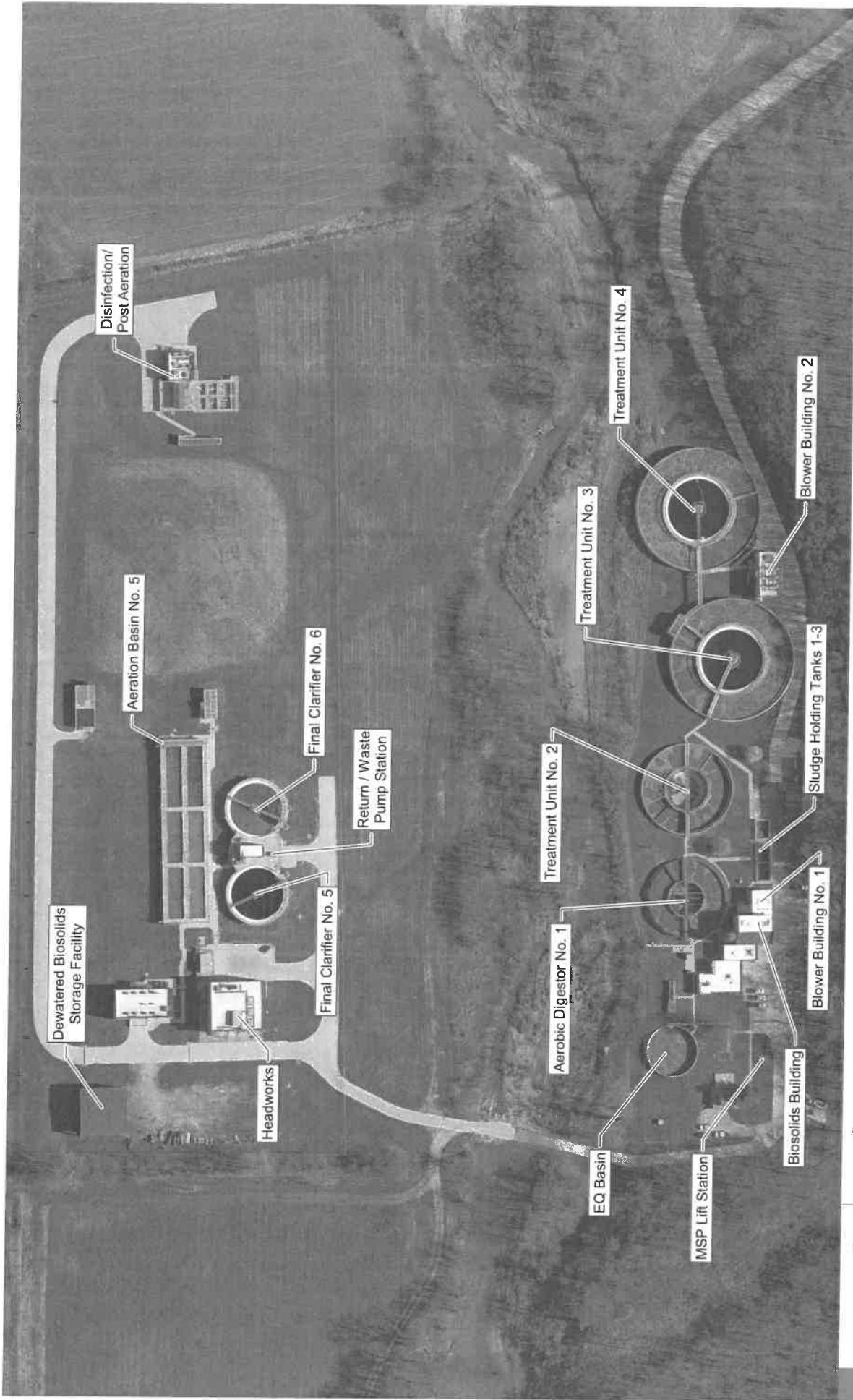
Item 7.1 – Facility Information: Process Flow Diagram or Schematic

1. Refer to Drawing – WRC Layout Fig. 3-1, 3-7
2. The City of Wentzville Water Reclamation Center is an extended aeration facility that uses preliminary treatment (screening equipment, grit removal and equalization basin), secondary clarifiers and UV disinfection to meet treatment goals before discharging to McCoy Creek. Sludge is aerobically digested prior to storage in sludge holding tanks prior to land application.
3. The three existing wastewater influent pipelines enter the WRC via the headworks on the west side of McCoy Creek. Following preliminary treatment, raw wastewater is split at the Influent Flow Splitter Structure between the east treatment train and the west treatment train. The east treatment train consists in the equalization basin, where raw wastewater is pumped to the three secondary treatment units located on the east side of McCoy Creek. Secondary treatment consists of three circular units including an integral clarifier, aeration zone and aerobic digester. The west treatment train consists of one rectangular aeration basin, a Clarifier Flow Splitter Structure, two secondary clarifiers and a Return Waste Pump Station. The effluent from all five secondary clarifiers flows by gravity through the Effluent Metering Structure in the UV Disinfection/Post-Aeration Basin, before discharging into McCoy Creek at Outfall #003.

Item 7.2 – Topographic Map

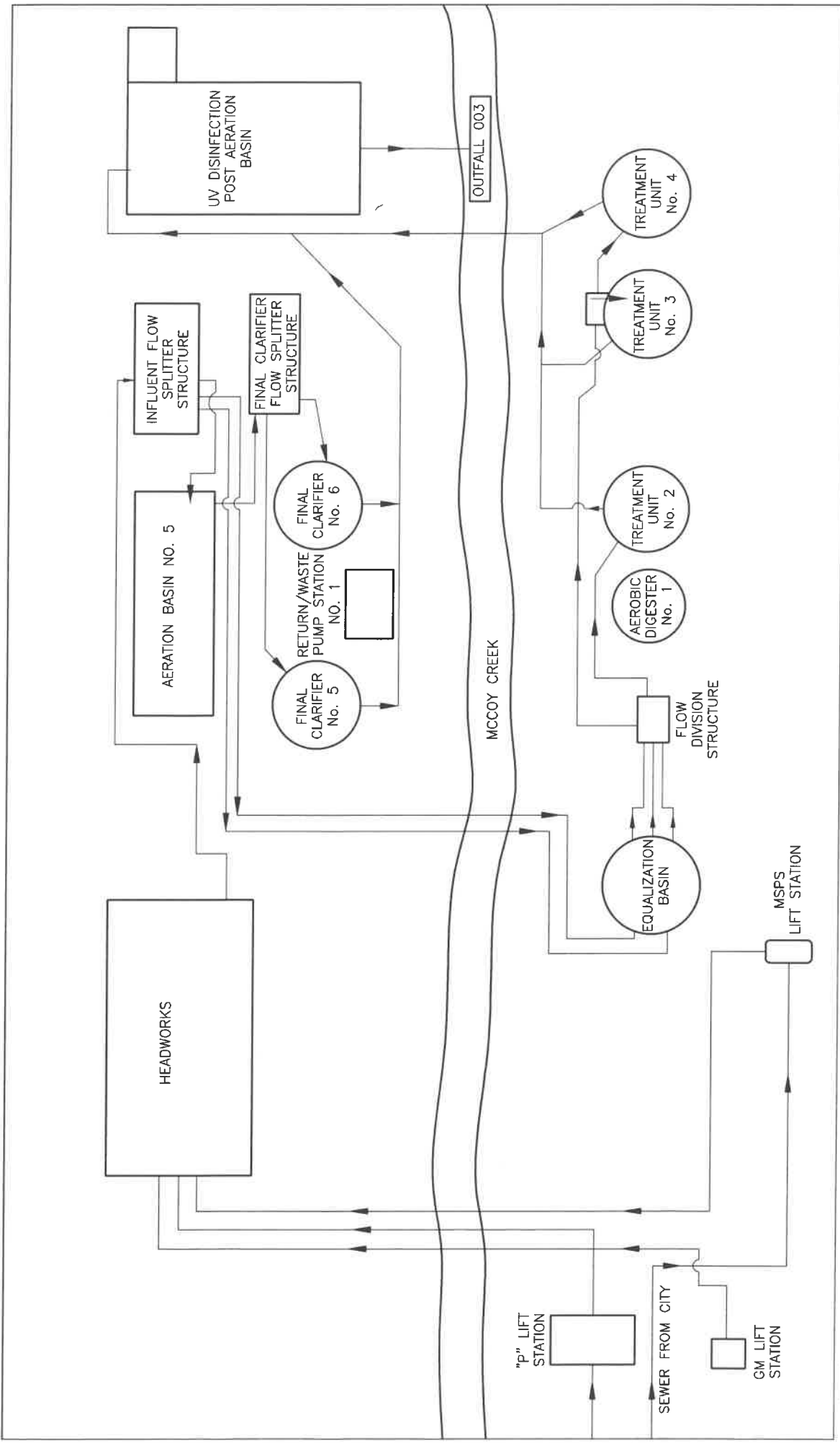
A 1:12500 scale USGS topographic map is attached for reference

B 1:29474 scale USGS aerial map is attached for reference



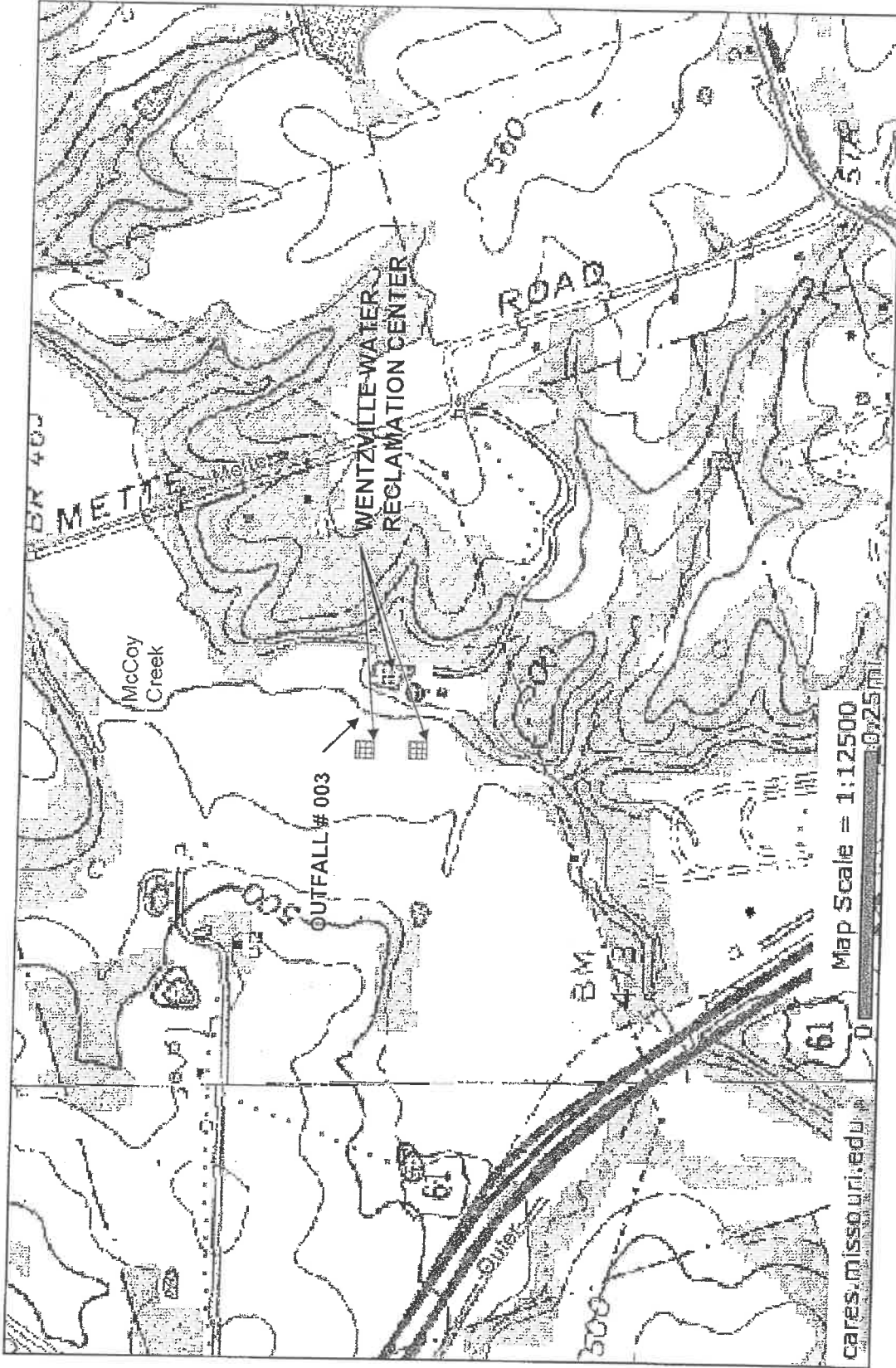
CITY OF WENTZVILLE
WRC LAYOUT
FIGURE 3-1
WRC FACILITY PLAN



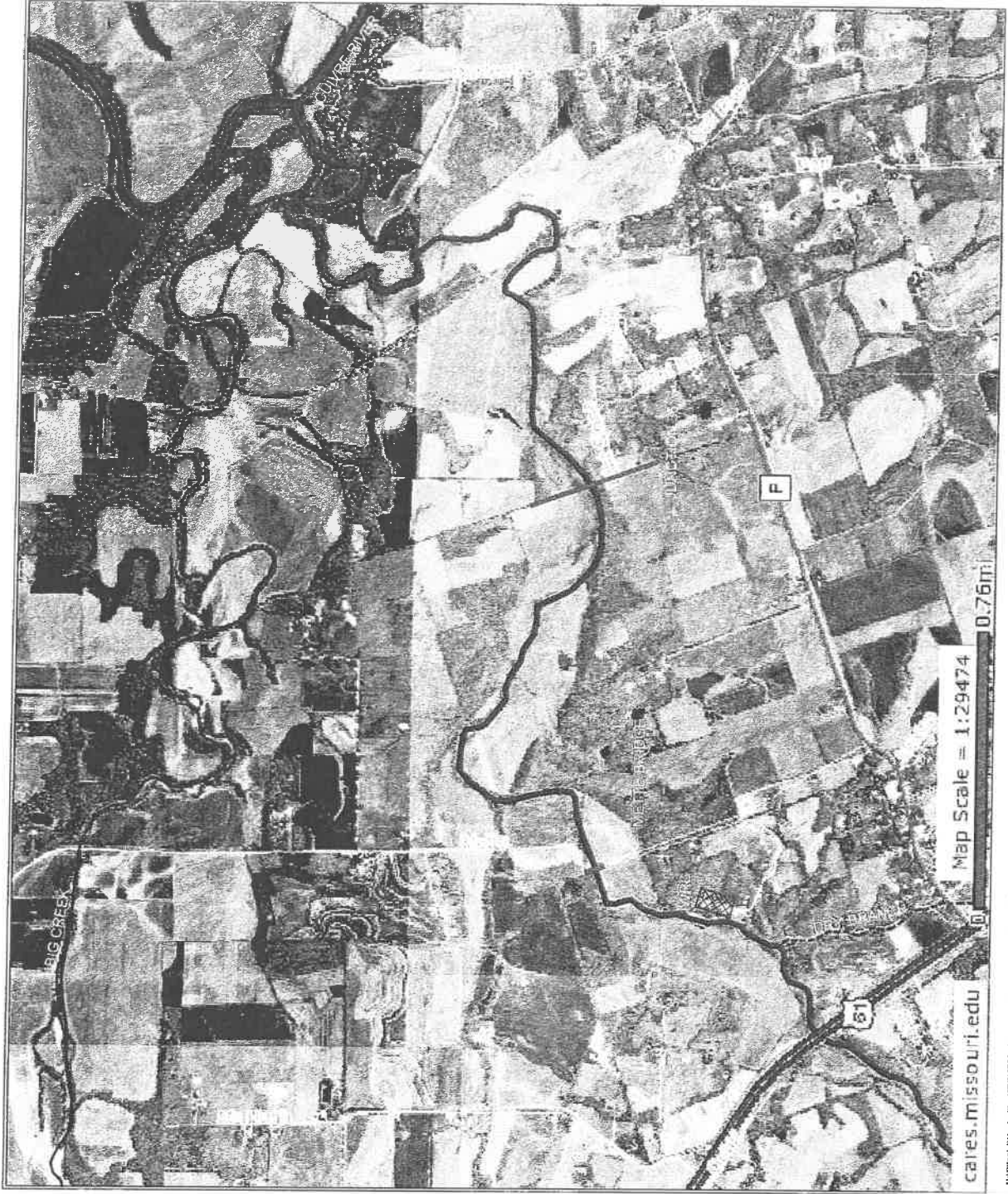


CITY OF WENTZVILLE
 WRC PROCESS FLOW DIAGRAM
 FIGURE 3-2
 WRC FACILITY PLAN





FORM B2 - PART A: BASIC APPLICATION INFORMATION
 7.0 ADDITIONAL FACILITY INFORMATION
 7.2 TOPOGRAPHIC MAP



cares.missouri.edu
Map Scale = 1:29474
0.76mi

H:\Client\Wentville_KC0107861\DD\gwentv\ZF161_2-17-05_0408pm_bathroader_XREFS_Wentville_WRC_Aerial_Maps

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Todd/David Jolley
Wentzville WWTF
5 West Pearce Blvd.
Wentzville, MO 63385

Report Number: 145763

Report of Analysis

Reference:

The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136. All results expressed on an as received basis unless indicated by a footnote.

Log Number: **2210125** Sample Description: **Permit Renewal Effluent #1** Sample Date: **4/30/2018** Sample Received Date: **4/30/2018**

Demands

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
B.O.D. (5-day)	3.25	mg/L	SM-5210 B-2011		05/02/18	114
Dissolved Oxygen	9.3	mg/L	SM-4500-O G-2011		04/30/18	133

Microbiology

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
E. Coli Modified mTEC	2.00	MPN/100 mL	Colilert-18		04/30/18	102

Minerals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Hardness-Titration	176	mg/L	SM-2340 C-2011		05/03/18	133

Miscellaneous

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Chlorine DPD Method	< 0.04	mg/L	SM-4500-Cl G-2011 (Hach)		04/30/18	133
Cyanide (total)	< 0.005	mg/L	Lachat-CN2/SM-4500 CN E		05/08/18	133
Phenolics	ND	mg/L	EPA 420.1 or 420.4 M	SUM	05/02/18	

Nutrients

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Ammonia as Nitrogen	< 0.020	mg/L	Lachat-10-107-06-1-K		05/01/18	102

O&G Group

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Oil & Grease by n-Hexane Extr.	< 2	mg/L	EPA-1664B		05/02/18	100

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Todd/David Jolley
Wentzville WWTF
5 West Pearce Blvd.
Wentzville, MO 63385

Report Number: 145763

Report of Analysis

Log Number: 2210125 Sample Description: Permit Renewal Effluent #1 Sample Date: 4/30/2018 Sample Received Date: 4/30/2018

Organics

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Acid, Base, and Neutral Fractions b	1	attachment	EPA-625	SUM	05/07/18	
Volatiles by GCMS	1	attachment	EPA-624	SUM	05/03/18	

Preparation Methods

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Metals ICP Sample Digestion	1	Prep	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Total (Total Recoverable) Metals	1	Prep	EPA-200.2		04/30/18	133

Solids

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Suspended Solids	8	mg/L	SM-2540 D-2011	J	05/01/18	149

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Aluminum by ICP	< 0.200	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Antimony by ICP	0.013	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Arsenic by ICP	< 0.005	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Beryllium by ICP	< 0.004	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Cadmium	< 0.003	mg/L	SM-3111 B-2011		05/04/18	133
Chromium	< 0.005	mg/L	SM-3111 B-2011		05/04/18	133
Copper	0.006	mg/L	SM-3111 B-2011		05/04/18	133
Hexavalent Chromium	< 0.005	mg/L	SM-3500-Cr B-2011		04/30/18	133
Iron	0.054	mg/L	SM-3111 B-2011		05/02/18	133
Lead by ICP	< 0.005	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Mercury by Cold-Vapor Technique	< 0.0002	mg/L	SM-3112 B-2011		05/15/18	133
Nickel	< 0.015	mg/L	SM-3111 B-2011		05/04/18	133

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5 West Pearce Blvd.
Wentzville, MO 63385

Report Number: 145763

Report of Analysis

Log Number: 2210125 Sample Description: Permit Renewal Effluent #1 Sample Date: 4/30/2018 Sample Received Date: 4/30/2018

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Selenium by ICP	0.007	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Silver	< 0.003	mg/L	SM-3111 B-2011		05/02/18	133
Thallium by ICP	< 0.002	mg/L	EPA-200.7 Rev. 4.4	ESS	05/17/18	
Trivalent Chromium	< 0.005	mg/L	SM-3111 B/3500-Cr B-2011		05/04/18	133
Zinc	0.046	mg/L	SM-3111 B-2011		05/04/18	133

Respectfully submitted,

David F. Warren

Comments:	
ESS	This parameter or group of analytes was analyzed by Engineering Surveys and Service Testing Laboratories, a subcontracting lab located in Columbia, MO.
J	Estimated value, result is less than the reporting limit.
SUM	This parameter or group of analytes was analyzed by the subcontracting lab - Summit Labs, OH

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Wentzville WWTF
2455 Mette Road
Wentzville, MO 63385

Report Number: 146097

Report of Analysis

Reference:

The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136. All results expressed on an as received basis unless indicated by a footnote.

Log Number:	Sample Description:	Sample Date:	Sample Received Date:
2211607	Permit Renewal Effluent 2 of 3	5/21/2018	5/21/2018

Demands

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
B.O.D. (5-day)	5.94	mg/L	SM-5210 B-2011		05/23/18	114
Dissolved Oxygen	8.0	mg/L	SM-4500-O G-2011		05/17/18	133

Microbiology

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
E. Coli Modified mTEC	12.1	MPN/100 mL	Collert-18		05/21/18	133

Minerals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Hardness-Titration	232	mg/L	SM-2340 C-2011		05/25/18	133

Miscellaneous

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Chlorine DPD Method	< 0.04	mg/L	SM-4500-Cl G-2011 (Hach)		05/21/18	133
Cyanide (total)	< 0.005	mg/L	Lachat-CN2/SM-4500 CN E		06/04/18	133
Phenolics	< 0.050	mg/L	EPA 420.1 or 420.4 M	SUM	05/22/18	

Nutrients

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Ammonia as Nitrogen	< 0.020	mg/L	Lachat-10-107-06-1-K		05/24/18	102

O&G Group

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Oil & Grease by n-Hexane Extr.	< 2	mg/L	EPA-1664B		05/23/18	100

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Report Number: 146097

Report of Analysis

Log Number: 2211607 Sample Description: Permit Renewal Effluent 2 of 3 Sample Date: 5/21/2018 Sample Received Date: 5/21/2018

Organics

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Acid, Base, and Neutral Fractions b	1	attachment	EPA-625	SUM	05/24/18	
Volatiles by GCMS	1	attachment	EPA-624	SUM	05/22/18	

Preparation Methods

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Metals ICP Sample Digestion	1	Prep	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Total (Total Recoverable) Metals	1	Prep	EPA-200.2		05/21/18	133

Solids

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Suspended Solids	10	mg/L	SM-2540 D-2011		05/22/18	149

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Aluminum by ICP	< 0.200	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Antimony by ICP	< 0.006	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Arsenic by ICP	0.008	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Beryllium by ICP	< 0.004	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Cadmium	< 0.003	mg/L	SM-3111 B-2011		06/01/18	133
Chromium	< 0.005	mg/L	SM-3111 B-2011		06/01/18	133
Copper	0.006	mg/L	SM-3111 B-2011		06/01/18	133
Hexavalent Chromium	< 0.005	mg/L	SM-3500-Cr B-2011		05/21/18	133
Iron	0.080	mg/L	SM-3111 B-2011		06/01/18	133
Lead by ICP	< 0.005	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Mercury by Cold-Vapor Technique	< 0.0002	mg/L	SM-3112 B-2011		06/12/18	133
Nickel	0.026	mg/L	SM-3111 B-2011		06/01/18	133

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Report Number: 146097

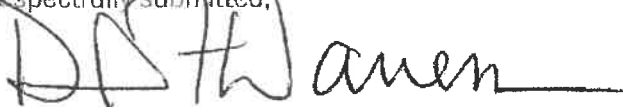
Report of Analysis

Log Number: 2211607 Sample Description: Permit Renewal Effluent 2 of 3 Sample Date: 5/21/2018 Sample Received Date: 5/21/2018

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Selenium by ICP	0.006	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Silver	< 0.005	mg/L	SM-3111 B-2011		06/01/18	133
Thallium by ICP	< 0.002	mg/L	EPA-200.7 Rev. 4.4	ESS	06/12/18	
Trivalent Chromium	< 0.005	mg/L	SM-3111 B/3500-Cr B-2011		06/01/18	133
Zinc	0.067	mg/L	SM-3111 B-2011		05/30/18	133

Respectfully submitted,



David F. Warren

Comments:

- ESS This parameter or group of analytes was analyzed by Engineering Surveys and Service: Testing Laboratories, a subcontracting lab located in Columbia, MO.
- SUM This parameter or group of analytes was analyzed by the subcontracting lab - Summit Labs, OH

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Report Number: 146347

Report of Analysis

Reference:

The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136. All results expressed on an as received basis unless indicated by a footnote.

Log Number:	Sample Description:	Sample Date:	Sample Received Date:
2212703	Permit Renewal Effluent #3	6/6/2018	6/6/2018

Demands

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
B.O.D. (5-day)	3.26	mg/L	SM-5210 B-2011		06/06/18	114
Dissolved Oxygen	8.1	mg/L	SM-4500-O G-2011		06/06/18	133

Microbiology

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
E. Coli Modified mTEC	5.2	MPN/100 mL	Colilert-18		06/06/18	133

Minerals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Hardness-Titration	278	mg/L	SM-2340 C-2011		06/07/18	133

Miscellaneous

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Chlorine DPD Method	< 0.04	mg/L	SM-4500-Cl G-2011 (Hach)		06/06/18	133
Cyanide (total)	< 0.005	mg/L	Lachat-CN2/SM-4500 CN E		06/11/18	133
Phenolics	< 0.050	mg/L	EPA 420.1 or 420.4 M	SUM	06/13/18	

Nutrients

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Ammonia as Nitrogen	< 0.02	mg/L	Lachat-10-107-06-1-K		06/08/18	100

O&G Group

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Oil & Grease by n-Hexane Extr.	< 2	mg/L	EPA-1664B		06/07/18	150

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Wentzville, MO 63385

Report Number: 146347

Report of Analysis

Log Number: 2212703 Sample Description: Permit Renewal Effluent #3 Sample Date: 6/6/2018 Sample Received Date: 6/6/2018

Organics

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Acid, Base, and Neutral Fractions b	1	attachment	EPA-625	SUM	06/12/18	
Volatiles by GCMS	1	attachment	EPA-624	SUM	06/07/18	

Preparation Methods

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Metals ICP Sample Digestion	1	Prep	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Total (Total Recoverable) Metals	1	Prep	EPA-200.2		06/11/18	133

Solids

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Suspended Solids	5	mg/L	SM-2540 D-2011	J	06/07/18	149

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Aluminum by ICP	< 0.200	mg/L	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Antimony by ICP	0.015	mg/L	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Arsenic by ICP	0.006	mg/L	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Beryllium by ICP	< 0.004	mg/L	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Cadmium	< 0.003	mg/L	SM-3111 B-2011		06/14/18	133
Chromium	< 0.005	mg/L	SM-3111 B-2011		06/14/18	133
Copper	0.006	mg/L	SM-3111 B-2011		06/14/18	133
Hexavalent Chromium	< 0.005	mg/L	SM-3500-Cr B-2011		06/06/18	133
Iron	0.078	mg/L	SM-3111 B-2011		06/13/18	133
Lead by ICP	< 0.005	mg/L	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Mercury by Cold-Vapor Technique	< 0.0002	mg/L	SM-3112 B-2011		06/12/18	133
Nickel	< 0.015	mg/L	SM-3111 B-2011		06/14/18	133

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Report Number: 146347

Report of Analysis

Log Number: 2212703 Sample Description: Permit Renewal Effluent #3 Sample Date: 6/6/2018 Sample Received Date: 6/6/2018

Total (Total Recoverable) Trace Metals

Test Description	Result	Units	Method	Comment Code	Analysis Date	Analyst
Selenium by ICP	< 0.005	mg/L	EPA-200.7 Rev. 4.4	ESS	06/13/18	
Silver	< 0.003	mg/L	SM-3111 B-2011		06/14/18	133
Thallium by ICP	< 0.002	mg/L	EPA-200.7 Rev. 4.4	PDC	06/13/18	
Trivalent Chromium	< 0.005	mg/L	SM-3111 B/3500-Cr B-2011		06/14/18	133
Zinc	0.019	mg/L	SM-3111 B-2011		06/14/18	133

Respectfully submitted,



David F. Warren

Comments:

- ESS This parameter or group of analytes was analyzed by Engineering Surveys and Service: Testing Laboratories, a subcontracting lab located in Columbia, MO.
- J Estimated value, result is less than the reporting limit.
- PDC This parameter or group of analytes was analyzed by the subcontracting lab - PDC Lab Saint Louis, MO
- SUM This parameter or group of analytes was analyzed by the subcontracting lab - Summit Labs, OH

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND
HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY, Form 780-1805
(Facilities less than or equal to 100,000 gallons per day of domestic waste must use Form B, 780-1512.)

PART A – BASIC APPLICATION INFORMATION

1. Check the appropriate box. **Do not check more than one item.** Operating permits refer to permits issued by the Department of Natural Resources, Water Protection Program. If an Antidegradation Review has not been conducted, submit the application located at the following link, to the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102: dnr.mo.gov/forms/780-1893-f.pdf.

1.1 **Fees Information:**

DOMESTIC OPERATING PERMIT FEES – PRIVATE

Annual operating permit fees are based on flow.

Annual fee/Design flow	Annual fee/Design flow	Annual fee/Design flow
\$150.....<5,000 gpd	\$1,000..... 15,000-24,999 gpd	\$4,000..... 100,000-249,999 gpd
\$300..... 5,000-9,999 gpd	\$1,500.....25,000-29,999 gpd	\$5,000.....≥250,000 gpd
\$600..... 10,000-14,999 gpd	\$3,000.....30,000-99,999 gpd	

New domestic wastewater treatment facilities must submit the annual fee with the original application.

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department on the anniversary date of the original permit. Permit fees must be current for the department to reissue the operating permit. Late fees of two percent per month are charged and added to outstanding annual fees.

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, public sewer district, public water district, or other publicly owned treatment works) Annual fee is based on number of service connections. Fees listings are found in 10 CSR 20-6.011 which is available at <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf>. New public sewer system facilities should not submit any fee as the department will invoice the permittee.

OPERATING PERMIT MODIFICATIONS, including transfers, are subject to the following fees:

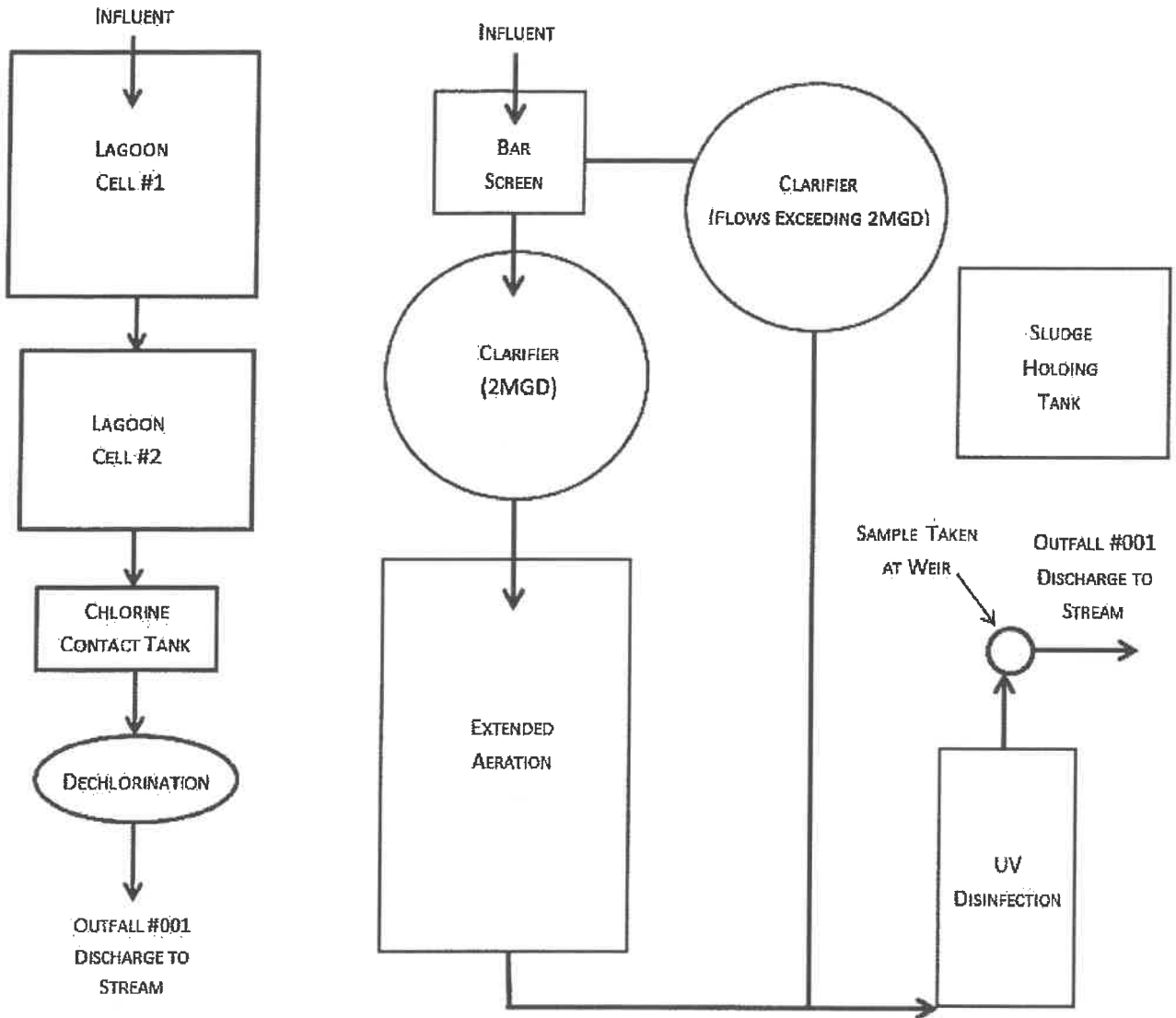
- a. Publicly Owned Treatment Works (POTWs) - \$200 each.
- b. Non-POTWs – \$100 each for a minor modification (name changes, address changes, other non-substantive changes) or a fee equal to 25 percent of the facility's annual operating fee for a major modification.

2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.
- 2.1 Self-explanatory.
- 2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.
- 2.3-2.4 Self-explanatory.
3. Owner – Provide the legal name, mailing address, phone number, and email address of the owner.
- 3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 15 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice.
- 3.2-3.4 Self-explanatory.
4. Continuing Authority – Provide information for the permanent organization which will serve as the continuing authority for the operation, maintenance, and modernization of the facility. The regulatory requirement regarding continuing authority is available at <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf> or contact the Department of Natural Resources Water Protection Program (see contact information below).
5. Operator – Provide the name, certificate number, title, mailing address, phone number, and email address of the operator of the facility.
6. Provide the name, title, mailing address, work phone number, and email address of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department.

7.1 Process Flow Diagram Examples

WASTEWATER TREATMENT LAGOON

WASTEWATER TREATMENT FACILITY



- 7.2 A topographic map is available on the web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.
- 7.3 For Standard Industrial Codes visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the Department of Natural Resources' Water Protection Program.
- 7.4-7.8 Self – explanatory.
- 7.9 If wastewater is land-applied submit form I: www.dnr.mo.gov/forms/780-1686-f.pdf.
- 7.10-8. Self-explanatory
- 9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.
- 9.2-9.9 Self – explanatory.

**INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND
HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(continued)**

PART B – ADDITIONAL APPLICATION INFORMATION

10.-14. Self-explanatory

PART C – CERTIFICATION

15. Electronic Discharge Monitoring Report (eDMR) Submission System – Visit the eDMR site at <http://dnr.mo.gov/env/wpp/edmr.htm> and click on the "Facility Participation Package" link. The eDMR Permit Holder and Certifier Registration Form and information about the eDMR system can be found in the Facility Participation Package.

Waivers to electronic reporting may be granted by the Department per 40 CFR 127.15 under certain, special circumstances. A written request must be submitted to the Department for approval. Waivers may be granted to facilities owned or operated by:

- a. members of religious communities that choose not to use certain technologies or
 - b. permittees located in areas with limited broadband access. The National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC) have created a broadband internet availability map: <http://www.broadbandmap.gov/>. Please contact the Department if you need assistance.
16. Signature – All applications must be signed as follows and the signatures must be original:
- a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
 - b. For a partnership or sole proprietorship, by a general partner or the proprietor.
 - c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

PART D – EXPANDED EFFLUENT TESTING DATA

17. Self-explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA

18. Self-explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

19. Federal regulations are available through the U.S. Government Printing Office at <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>.

19.1 Self-explanatory

19.2 A noncategorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:

- i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
- ii. Contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
- iii. Is designated as an SIU by the control authority.

20.-22.4 Self-explanatory.

PART G – COMBINED SEWER SYSTEMS

23.-24.4 Self-explanatory.

Submittal of an incomplete application may result in the application being returned.

This completed form and any attachments along with the applicable permit fees, should be submitted to:

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102-0176

Map of regional offices with addresses and phone numbers are available on the web at <http://dnr.mo.gov/regions/>. If there are any questions concerning this form, contact the appropriate regional office or the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-751-6825.