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 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0028720
Owner:	City of O'Fallon
Address:	100 N Main Street, O'Fallon, MO 63366
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	O'Fallon Wastewater Treatment Plant
Facility Address:	150 Firma Road, O'Fallon, MO 63366
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.

August 1, 2020
Effective Date

October 1, 2023
Modification Date

March 31, 2025
Expiration Date

John Hoke, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW
The use or operation of this facility shall be by or under the supervision of a Certified "A" Operator.
Influent Lift Station / 2 Flow Equalization Basins / Bar Screen / Grit Tank / 4 Primary Clarifiers / 4 Biological Nutrient Removal Tanks / 4 Final Clarifiers / UV Disinfection / Effluent Pump Station / Aerobic Sludge Holding Tank / Rotary Drum Thickeners / Sludge Blend Tank / Sludge Dewatering / Thermal-Lime Pasteurization / Biosolids are Land Applied or Landfilled

Design population equivalent is 93,000.
Design flow is 11.25 million gallons per day.
Actual flow is 7.5 million gallons per day.
Design sludge production is 2,800 dry tons/year.

Legal Description:	Landgrant 01687, St. Charles County
UTM Coordinates:	X = 703631, Y = 4308102
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi (P) (3699)
USGS Basin & Sub-watershed No.:	(07110009-0106)

Permitted Feature INF – Influent Monitoring Location

Outfall #002 – POTW High flow event – SIC #4952
Only authorized for use during high-flow events when the flow in Peruque Creek is at a minimum of 704 cfs or Mississippi River is at or above flood conditions as measured by the Grafton, IL USGS Gage (Gage #05587450). Discharge from this outfall are expected to occur 0-5 times per year during high flow events and will consist of fully treated effluent.
The use or operation of this facility shall be by or under the supervision of a Certified "A" Operator.
Influent Lift Station / 2 Flow Equalization Basins / Bar Screen / Grit Tank / 4 Primary Clarifiers / 4 Biological Nutrient Removal Tanks / 4 Final Clarifiers / UV Disinfection / Effluent Pump Station / Aerobic Sludge Holding Tank / Rotary Drum Thickeners / Sludge Blend Tank / Sludge Dewatering / Thermal-Lime Pasteurization / Biosolids are Land Applied or Landfilled

Legal Description:	Landgrant 01687, St. Charles County
UTM Coordinates:	X=700051, Y=4301947
Receiving Stream:	Peruque Creek (P)
First Classified Stream and ID:	Peruque Creek (P) (216)
USGS Basin & Sub-watershed No.:	(07110009-0102)

OUTFALL #001	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-1** shall become effective on **August 1, 2020** 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
Carbonaceous Biochemical Oxygen Demand$_5$	mg/L		40	25	twice/week	composite**
Total Suspended Solids	mg/L		45	30	twice/week	composite**
E. coli (**Note 1**)	#/100mL		630	126	twice/week	grab
Ammonia as N	mg/L	32.3		32.3	once/month	composite**
Oil & Grease	mg/L	15		10	once/month	grab
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrate + Nitrite	mg/L	*		*	once/month	composite**
EFFLUENT PARAMETER(S)	**UNITS**	**MINIMUM**		**MAXIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
pH – Units****	SU	6.0		9.0	twice/week	grab

EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Carbonaceous 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 SEPTEMBER 28, 2020.

* 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 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. Treatment is the same for Outfall #001 and Outfall #002; therefore, overall removal efficiency will be calculated using both Outfall #001 and Outfall #002.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.

OUTFALL #001	TABLE A-2. FINAL EFFLUENT 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-2** shall become effective on **August 1, 2020** 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: Q						
Methylene Chloride	µg/L	*		*	once/quarter**	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE OCTOBER 28, 2020.

* Monitoring requirement only.
** See table below for quarterly sampling.

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

OUTFALL #001	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-3** shall become effective on **August 1, 2020** 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: WA						
Acute Whole Effluent Toxicity (**Note 3**)	TU_a	1.5			once/year	composite**

ACUTE WET TEST MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**; THE FIRST REPORT IS DUE JANUARY 28, 2020.

* 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 Acute WET test shall be conducted once per year during the permit cycle. See Special Condition #17 for additional requirements.

OUTFALL #002	TABLE A-4. 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-4** shall become effective on **October 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/day	24 hr. total
Carbonaceous Biochemical Oxygen Demand$_5$	mg/L		40		twice/week	composite**
Total Suspended Solids	mg/L		45		twice/week	composite**
E. coli (Note 2)	#/100mL		630		twice/week	grab
Ammonia as N	mg/L	23.8			once/month	grab
Oil & Grease	mg/L	15			once/month	grab
Total Phosphorus	mg/L	*		*	once/month	grab
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	grab
Nitrite + Nitrate	mg/L	*		*	once/month	grab

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units****	SU	6.5		9.0	once/day	grab

EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Carbonaceous Biochemical Oxygen Demand$_5$ – Percent Removal (**Note 2**)	%	85	twice/week	calculated
Total Suspended Solids – Percent Removal (Note 2**)**	%	85	twice/week	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE NEXT REPORT IS DUE November 28, 2023.

* Monitoring requirement only.

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

**** 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 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. Treatment is the same for Outfall #001 and Outfall #002; therefore, overall removal efficiency will be calculated using both Outfall #001 and Outfall #002.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.

PERMITTED FEATURE INF	TABLE B-1. INFLUENT MONITORING REQUIREMENTS

The monitoring requirements in **Table B-1** shall become effective on **August 1, 2020** 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						
Carbonaceous 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 SEPTEMBER 28, 2020.

* 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 $CBOD_5$ 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. Influent and effluent samples are to be taken during the same month. Influent 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. Treatment is the same for Outfall #001 and Outfall #002; therefore, overall removal efficiency will be calculated using both Outfall #001 and Outfall #002.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.

C. 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. Annual reports required per Standard Conditions Part III Section K shall be submitted online to the Department via the Department's eDMR system as an attachment. This supersedes Standard Conditions Part III Section K #4. EPA reports shall continue to be submitted online via the Central Data Exchange system.

D. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System.
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Collection System Maintenance Annual Reports;
      (2) Sludge/Biosolids Annual Reports;
         i. In addition to the annual Sludge/Biosolids report submitted to the Department, the permittee must submit Sludge/Biosolids Annual Reports electronically using EPA's NPDES Electronic Reporting Tool ("NeT") (https://cdx.epa.gov/).
      (3) Pretreatment Program Reports; and
      (4) Any additional report required by the permit excluding bypass reporting.

      After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
      (1) Notices of Termination (NOTs);
      (2) No Exposure Certifications (NOEs); and
      (3) Bypass reporting, See Special Condition #9 for 24-hr. bypass reporting requirements.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must submit compliance monitoring data and reports electronically. The Department may grant a waiver to a permittee in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. 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.

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.

4. Report as no-discharge when a discharge does not occur 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.

D. SPECIAL CONDITIONS (continued)

(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).

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. 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 http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc. Additional information regarding the Departments' CMOM Model is available at http://dnr.mo.gov/pubs/pub2574.htm.

   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.

9. 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 Saint 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.

10. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

11. 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.

12. An all-weather access road to the treatment facility shall be maintained.

13. 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.

14. The storage basins shall be operated and maintained to ensure their structural integrity, which includes maintaining adequate freeboard and keeping the berms free of deep-rooted vegetation, animal dens, or other potential sources of damage.

15. The facility shall ensure that adequate provisions are provided to prevent or minimize surface water intrusion into the storage basins and to divert stormwater runoff around the storage basins and protect embankments from erosion.

D. SPECIAL CONDITIONS (continued)

16. 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 dated 02-19), 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.

17. Acute 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 acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
    i. The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
    ii. The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
(b) 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 20%; the dilution series is: 5%, 10%, 20%, 40%, and 80%.
(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 acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.
(h) Accelerated Testing Trigger: If the regularly scheduled acute WET test exceeds the TU_a limit, the permittee shall conduct accelerated follow-up WET testing as prescribed in the following conditions. Results of the follow-up accelerated WET testing shall be reported in TU_a. This permit requires the following additional toxicity testing if any one test result exceeds a TU_a limit.
    (1) A multiple dilution test shall be performed for both test species within 60 calendar days of becoming aware the regularly scheduled WET test exceeded a TU_a limit, and once every two weeks thereafter until one of the following conditions are met:
        i. Three consecutive multiple-dilution tests are below the TU_a limit. No further tests need to be performed until next regularly scheduled test period.
        ii. A total of three multiple-dilution tests exceed the TU_a limit.
    (2) Follow-up tests do not negate an initial test result.
    (3) The permittee shall submit a summary of all accelerated WET test results for the test series along with complete copies of the laboratory reports as received from the laboratory within 14 calendar days of the availability of the third test exceeding a TU_a limit.
(i) TIE/TRE Trigger: The following shall apply upon the exceedance of the TU_a limit in three accelerated follow-up WET tests. The permittee should contact the Department within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact the Department upon the third follow up test exceeding a TU_a limit, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE within 60 calendar days of the date of the automatic trigger or the Department's direction to perform either a TIE or TRE. The plan shall be based on EPA Methods and include a schedule for completion. This plan must be approved by the Department before the TIE or TRE is begun.

D. SPECIAL CONDITIONS (continued)

18. Stormwater Pollution Prevention Plan (SWPPP): A SWPPP must be implemented upon permit issuance. 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.
    (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.22.
        (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.

D. SPECIAL CONDITIONS (continued)

19. 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.

20. 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 **February 1, 2021**. 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.

21. The permittee shall update their pretreatment program to incorporate the requirements of 10 CSR 20-6.100, effective October 30, 2012, which adopted the 2005 "Streamlining" revisions to the federal pretreatment rule, 40 CFR 403. This update to city code will include at the minimum the "required streamlining" 40 CFR 403 rule updates. The permittee shall submit the draft revision to the pretreatment program along with the draft revisions to the city code to the Department by **February 1, 2021,** for review and approval. After draft review, the formal submission of the program modification will follow the requirements of 40 CFR 403.18. The permittee shall immediately implement the finalized updates to the pretreatment program and adopt the revised city code no later than **6 months** after Department approval of the changes. The permittee shall submit notification of city code adoption to the Department no later than **7 months** after Department approval.

D. SPECIAL CONDITIONS (continued)

22. Outfall #002 Discharges.
    (a) Monitoring. Any discharge shall be monitored for the parameters and frequency identified in **Table A-4.** The facility shall submit test results, along with the number of days Outfall #002 discharged during the month, via the Electronic Discharge Monitoring Report (eDMR) Submission System by the 28th day of the month after the discharge ceases.
    (b) Authorized Discharges. A discharge through Outfall #002 may only occur if the Mississippi River is at or above flood stage at Grafton, Il or if Peruque Creek has a flow of 704 cfs, due to the O'Fallon service area receiving two or more inches of rainfall in a twenty-four (24) hour period or three or more inches of rainfall during a seventy-two (72) hour period. The discharge can occur until the treatment plant operations are able to return to standard operations.
    (c) Unauthorized Discharges. **Discharge for any other reason than what is stated in 22(b) of this Special Condition shall constitute a permit violation and shall be reported in accordance with Standard Conditions Part 1 Section B.2.** Unauthorized discharges 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/data-e-services/missouri-gateway-environmental-management-mogem or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours.

E. 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-0028720
O'Fallon WWTP

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

Facility Description:
Influent Lift Station / 2 Flow Equalization Basins / Bar Screen / Grit Tank / 4 Primary Clarifiers / 4 Biological Nutrient Removal Tanks / 4 Final Clarifiers / UV Disinfection / Effluent Pump Station / Aerobic Sludge Holding Tank / Rotary Drum Thickeners / Sludge Blend Tank / Sludge Dewatering / Thermal-Lime Pasteurization / Biosolids is Land Applied or Landfilled

The project involves upgrades to the biological treatment system at the WWTP to help meet more stringent Ammonia limits in the City's discharge permit. The project also involves a new high flow treated effluent outfall system to Peruque Creek, which is adjacent to the WWTP, to reduce operational challenges and the risk of surcharging unit processes at the treatment plant during high flow events. Finally, the project involves significant upgrades to the plants electrical and control systems due to age, condition, and the need to support plant upgrades.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#002	7.01	Secondary	Domestic

Part II – Reason for the Modification

This operating permit is hereby modified to add Outfall #002 for discharge of treated effluent to Peruque Creek during high flow events, change the facility description to address removal of the Bio-Filter Activated Sludge process and replacement with an Activated Sludge with Biological Nutrient Removal (BNR) process, reflect recent upgrades to the WWTP and Biosolids Processing System, and remove the interim effluent limits table and schedule of compliance for meeting ammonia effluent limits.

All pollutants of concern for Outfall #002 will have either weekly average or daily maximum limits and no monthly average effluent limits since the discharge to Peruque Creek is not continuous as per 40 CFR 122.45(e). The efficiency removal for the O'Fallon WWTF will include the overall discharge to both Peruque Creek and the Mississippi River.

Since the draft operating permit was public noticed prior to the start of construction in 2020, an additional scenario has been identified when high flows may occur requiring the need to discharge treated effluent to Peruque Creek. The first scenario identified was when the Mississippi River at Grafton, IL (USGS gaging station: 05587450) was at flood stage. The second point when the City of O'Fallon may utilize Outfall #002 is when the service area experiences more than 2-inches of rain in a single day (24-hour period as measured midnight to midnight) or more than 3-inches of rain in a period of 3 consecutive days (as measured midnight to midnight) and/or the receiving stream, Peruque Creek is at a minimum of 704 cfs. This was identified as a need when the City of O'Fallon received approximately 8 inches of rain in a 24 hour period on July 26, 2022, which increased the flow in Peruque Creek to above 704 cfs, but the Mississippi River at Grafton, IL was below the flood stage.

The facility description was updated to include the high flow events that a discharge of fully treated effluent is allowed through Outfall #002 and Special Condition #22 was added.

Other changes since the 2019 public notice for the construction permit modification, 2020 renewal public notice, and 2022 pretreatment modification is the removal of total recoverable zinc and total recoverable copper from Outfall #002 for consistency with the 2020 renewal.

The proposed project under construction permit CP0002069 is designed to meet the final ammonia effluent limits. This modification will be issued upon completion of construction under construction permit CP0002069. Statement of Work Complete was received on August 29, 2023.

Part III – Receiving Stream Information

RECEIVING STREAM(S) TABLE: OUTFALL #002

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Peruque Creek	P	216	AQL, HHP, IRR, LWW, SCR, WBC(B), General Criteria	07110009-0102	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 HHF) = 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);

MIXING CONSIDERATIONS:

Mixing Zone (MZ): One-quarter (1/4) of the stream volume of flow; length one-quarter (1/4) mile. [10 CSR 20-7.031(5)(A)4.B.(III)(a)].

Zone of Initial Dilution (ZID): One-tenth (0.1) of the mixing zone volume of flow, not to exceed 10 times the effluent design flow. [10 CSR 20-7.031(5)(A)4.B.(III)(b)].

The proposed Outfall #002 discharge to Peruque Creek from the O'Fallon WWTF is based on higher stream flows than the critical low-flow conditions for Peruque Creek. The definition of low flow conditions is the minimum amount of stream flow occurring immediately upstream of a wastewater discharge, as per 10 CSR 20-7.031(1)(O)1. According to 10 CSR 20-7.031(5)(A)4.F, discharge limitations may be based on higher stream flows if the discharge volume or quality may be adjusted to correlate with stream flows. This proposed discharge is a unique case where the discharge will only occur during wet weather events during which the Mississippi River is under flood conditions. As per 10 CSR 20-7.015(9)(A)2.B.(I) and (II), the water quality based effluent limitations incorporating mixing zones may be based on stream flows other than critical low-flow conditions if the proposed limits are protective of critical low-flow conditions and the permit requires instream flow measurements. The discharge is only expected to occur 0-5 times per year. Weekly Average and Daily Maximum effluent limits have been proposed for each pollutant of concern.

The consultant analyzed precipitation data from NOAA weather station GHCND: USW00053904 in St. Charles County and flow data from US Gage Station 05514712 on Peruque Creek. Stream flows for twelve days of high precipitation were used to determine the typical stream flow in Peruque Creek during periods of high precipitation. The flow in Peruque Creek was determined to be approximately 704 CFS during high flow precipitation events.

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)], 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

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

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

☒ - Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)]. Treatment for Outfall #002 is the same as for Outfall No. 001; therefore, overall removal efficiency will be calculated using both Outfall No. 001 and Outfall No. 002.

Part V – Effluent Limits Determination

OUTFALL #002 – HIGH FLOW EVENT 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/day	monthly	T
$CBOD_5$	mg/L	4		40		***	2/week	monthly	C
TSS	mg/L	4		45		***	2/week	monthly	C
Escherichia coli **	#/100mL	1, 3		630		***	1/month	monthly	G
Ammonia as N	mg/L	4	23.8			***	1/month	monthly	G
Oil & Grease	mg/L	1, 3	15			***	1/month	monthly	G
Total Phosphorus	mg/L	1/11	*			***	1/month	monthly	G
Total Kjeldahl Nitrogen	mg/L	11	*			***	1/month	monthly	G
Nitrites+Nitrates	mg/L	11	*			***	1/month	monthly	G
PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.5		9.0	***	1/day	monthly	G
PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
BOD_5 Percent Removal	%	1			85	Same	2/week	monthly	M
TSS Percent Removal	%	1			85	Same	2/week	monthly	M

* - Monitoring requirement only.
** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
**** - C = 24-hour composite
G = Grab

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

T = 24-hr. total
E = 24-hr. estimate
M = Measured/Calculated

Basis for Limitations Codes:

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

OUTFALL #002 – DERIVATION AND DISCUSSION OF LIMITS:

See Derivation and Discussion section in **APPENDIX – ANTIDEGRADATION REVIEW** on page 6 of this factsheet addendum.

- **Carbonaceous Biochemical Oxygen Demand ($CBOD_5$).**

  ☒ - 40 mg/L as a Weekly Average. To protect beneficial uses within segment 216 of Peruque Creek, the consultant used 40 mg/L $CBOD_5$ as input to the Streeter Phelps analysis. Streeter Phelps modeling simulated using the proposed design flow indicated the modeled lowest dissolved oxygen or critical dissolved oxygen sag was 5.5 mg/L. The Department agrees that this is protective of the impairment for dissolved oxygen in Peruque Creek.

- **Total Nitrogen (Speciated)**. Effluent monitoring for Total Kjeldahl Nitrogen, and Nitrite + Nitrate are required per 10 CSR 20-7.015(9)(D)8.

All pollutants of concern for Outfall #002 will have either weekly average or daily maximum limits and no monthly average effluent limits since the discharge to Peruque Creek is not continuous as per 40 CFR 122.45(e). The efficiency removal for the O'Fallon WWTF will include the overall discharge to both Peruque Creek and the Mississippi River.

OUTFALL #002 – 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. 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 that has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is expected to be in compliance with the secondary treatment technology based effluent limits established in this permit. 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) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.

(F) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.

(G) 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.

(H) 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 that 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 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 permittee has waived the requirement for an affordability finding (See Appendix – Cost Analysis Waiver).

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 August 30, 2019 to September 30, 2019. Due to the major modifications of this permit, this operating permit was public noticed again April 7, 2023 to May 8, 2023. No comments received.

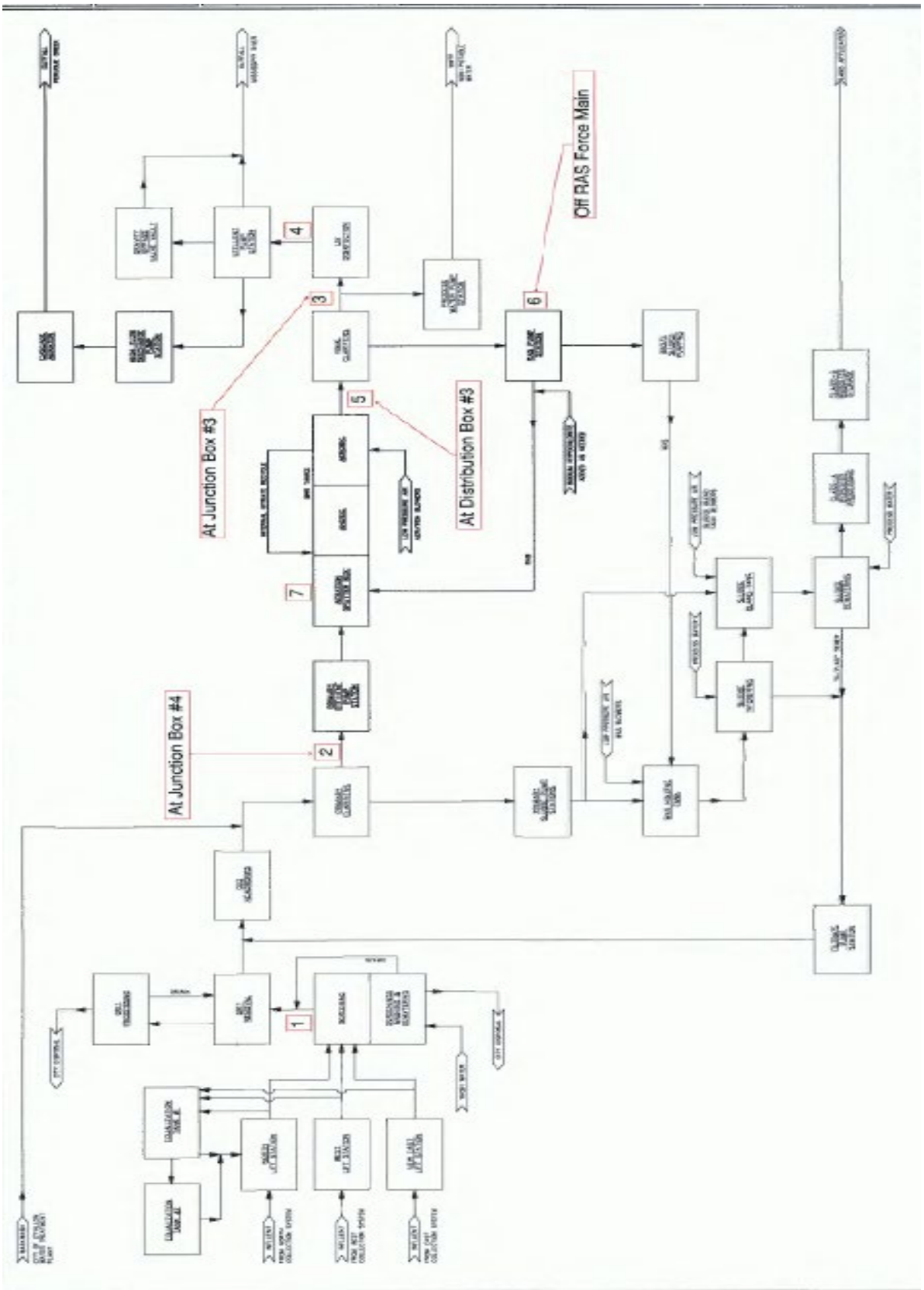
DATE OF ADDENDUM: 07/17/2019; UPDATED 02/07/2023

COMPLETED BY:

CAILIE CARLILE, P.E.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
ENGINEERING SECTION

Updated by:
LEASUE MEYERS, EI
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
ENGINEERING SECTION
LEASUE.MEYERS@DNR.MO.GOV

APPENDIX- PROCESS FLOW DIAGRAM



APPENDIX – ANTIDEGRADATION REVIEW

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

MAR 02 2018

Mr. Mike Pratt
100 North Main Street
O'Fallon, MO 6336

RE: Water Quality and Antidegradation Review Preliminary Determination for O'Fallon WWTF MO-0028720

Dear Mr. Pratt:

In accordance with the *Missouri Antidegradation Rule and Implementation Procedure (AIP)*, your proposed discharge is subject to an Antidegradation Review. The enclosed *Water Quality and Antidegradation Review (WQAR)* summarizes this preliminary determination based upon your *Peruque Creek High Flow Discharge* Report dated June 28, 2017, which proposed an alternate discharge to Peruque Creek during times when the Mississippi River is under flood conditions.

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.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, an engineering report, or a complete application for a construction permit to the Department or to the financial assistance center for projects that are seeking funding assistance from the Department of Natural Resources. 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. 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 commen are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved with 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.

If you should have questions, please feel free to contact Ms. Sonali Siriwardana by telephone at (573) 751-7466, by e-mail at sonali.siriwardana@dnr.mo.gov, or by mai P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

Refaat Mefrakis

Refaat Mefrakis, P.E., Engineering Section Chief
Water Pollution Control Branch

Enclosures

RKM:ssn

c: Mr. Robert T. Polys, P.E.
St. Louis Regional Office

Water Quality and Antidegradation Review

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

by
O'Fallon Wastewater Treatment Facility

February 2018

Table of Contents

1. Facility Information

FACILITY NAME: O'Fallon Wastewater Treatment Facility (WWTF) NPDES #: MO-0028720

FACILITY TYPE: POTW – Residential Subdivision– SIC #4952
FACILITY DESCRIPTION: The current facility utilizes a Bio-Filter/Activated Sludge treatment process that discharges to the Mississippi River. The consultant has proposed a high flow discharge to Peruque Creek when the Mississippi River is under flood conditions during wet weather events. As a result of the submitted alternative analysis, the applicant's preferred alternative is the Conventional Activated Sludge (CAS) system with provisions for Biological Nutrient Removal (BNR) in an MLE type configuration and UV disinfection. The design flow will be 4.53 MGD.

COUNTY:	St. Charles	UTM COORDINATES:	X=700051 / Y=4301947
12- DIGIT HUC:	07110009-0102	LEGAL DESCRIPTION:	SE ¼, SW ¼, Section 469, T0N, R0E
EDU*:	Central Plains/ Cuivre/Salt	ECOREGION:	Ozark Border

* - 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 (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, 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:

Monthly averages for the facility's discharge monitoring report: 11.1 mg/L BOD_5, 12.4 mg/L TSS, 16.1 mg/L Ammonia, 97#/100mL *E. coli* for the 30-day geometric mean. This facility is not under enforcement. No receiving water information. Peruque Creek is on the 303(d) list for dissolved oxygen and fishes bioassessments for segments 215 and 218. There is not a TMDL for Peruque Creek. The discharge in segment 216 is approximately 2,200 ft from impaired segment 215 of Peruque Creek. The low-flow value for Peruque Creek was calculated by using flow data from Peruque Creek on days when the Mississippi River was at flood level.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
002	7.01	Secondary	Peruque Creek	0.0

3. Receiving Waterbody Information

WATERBODY NAME	CLASS	WBID	FLOW VALUES (CFS)			DESIGNATED USES*
			1Q10	7Q10	30Q10	
Peruque Creek	P	216	-	704**	-	AQL, HHP, IRR, LWW, SCR, WBC(B), General Criteria

* 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).

** Flow conditions under which the discharge will occur. 704 CFS was calculated using data from US Gage Station 05514712 during days which the Mississippi River was flooded.

RECEIVING WATER BODY SEGMENT #1: Peruque Creek
Upper end segment* UTM coordinates: X=700051 / Y=4301947 (Outfall)
Lower end segment* UTM coordinates: X= 700312/ Y=4301750 (meets segment 215 of Peruque Creek)

* 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

Woodard & Curran, Inc. Engineering prepared, on behalf of the City of O'Fallon, the *Peruque Creek High Flow Discharge Antidegradation Report* for the City of O'Fallon dated June 28, 2017. Applicant elected to assume that all pollutants of concern (POC) are significantly degrading the receiving stream in the absence of existing water quality. An alternative analysis was conducted to fulfill the requirements of the AIP. A dissolved oxygen modeling (Appendix C) analysis was submitted for review. Staff believes that the results of the model are protective of the water quality standards for dissolved oxygen. Information that was provided by the applicant in the submitted report and summary forms in Appendix D was used to develop this review document.

Geohydrological Evaluation was submitted with the request and the receiving stream is gaining for discharge purposes (Appendix A: Map).

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; Indiana bats (*Myotis sodalis*, federal and state-listed endangered) may occur within the project area. Bald eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. The applicant should follow recommendations given in the Natural Heritage Review (Appendix B) and if any trees need to be removed should contact the U.S. Fish and Wildlife Service for further coordination under the Endangered Species Act.

5. Antidegradation Review Information

The following is a review of the *Peruque Creek High Flow Discharge Antidegradation Report* dated June 28, 2017.

5.1. TIER DETERMINATION

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

Table 1. Pollutants of Concern and Tier Determination

POLLUTANTS OF CONCERN	TIER*	DEGRADATION	COMMENT
BOD_5/DO	1		
Total Suspended Solids (TSS)	**	Significant	
Ammonia	2	Significant	
pH	***	Significant	Permit limits applied
Escherichia coli (*E. coli*)	2	Significant	
Oil & Grease	2	Significant	
Total Nitrogen	2		
Total Phosphorus	2		
Copper	2		
Zinc	2		

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

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

For pollutants of concern, the attachments are:
☒ Attachment A, Tier 2 with significant degradation.

5.2. EXISTING WATER QUALITY

Existing water quality data was submitted for ammonia. The Zone of Initial Dilution (ZID) is the 1Q10 value for the stream and the 30Q10 is considered the mixing zone when calculating ammonia limits. All POCs except dissolved oxygen and BOD_5 were considered to be Tier 2 and significantly degrading in the absence of existing water quality. Dissolved oxygen and BOD_5 are considered to be Tier 1 POCs due to the dissolved oxygen impairment in segment 215 of Peruque Creek.

Stone Ridge Meadows Subdivision WWTF's Outfall No. 002 discharges under two miles away from Outfall No. 002 from the O'Fallon WWTF. Stone Ridge Meadows Subdivision WWTF's outfall is located on an unnamed tributary to Peruque Creek. Stone Ridge Meadows Subdivision WWTF has an actual flow of 1,700 gpd.

5.3. NO DISCHARGE EVALUATION

According to 10 CSR 20-6.010 (4)(D), reports for the purpose of constructing a wastewater treatment facility shall consider the feasibility of constructing and operating a no discharge facility. Because Missouri's antidegradation implementation procedures specify that if the proposed activity results in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Part of that analysis as shown below is the non-degrading or no discharge evaluation. See Section 5.4.1 discussion for the regionalization alternative.

The first non-discharging alternative was land application with seasonal storage. This option would require an additional storage basin, which would take up about 10 acres of land, and a large amount of land suited for land application, approximately 21 acres. The land the WWTF site is located on is nearly built out and cannot accommodate for the acreage required to upgrade for land application. Typically, land application is prohibited for about six months of the year due to weather. The storage area and land required for this facility's wet weather flows deems this option impractical.

The second non-discharging alternative was subsurface disposal with seasonal storage. This option would require the land to be completely dug up and reconstructed to install the subsurface distribution and disposal system. This would require the purchase of approximately 50 acres of land that could be disturbed to install the distribution system. This option is deemed economically impractical for the high flow discharge.

The third non-discharging alternative was recycling or reuse. Examples of reuse could be treated effluent irrigating golf courses, washing of trucks, or groundwater recharge. The source of flow is so high that it will not be used in its entirety for non-potable uses within the facility itself. Since this source of flow is not reliable, this cannot be used for a truck washing stations or golf courses, which usually depend on a continuous source. This option is deemed impractical for the high flow discharge.

The fourth non-discharging alternative was regionalization. O'Fallon WWTF has the highest permitted flow out of any of the neighboring facilities. In addition, the only time O'Fallon WWTF will see high flow discharge is during sustained high precipitation events, which is when all surrounding facilities also see high flow conditions. This would prevent them from accepting an additional high volume of flow. This option is deemed impractical for the high flow discharge.

The fifth non-discharging alternative was an alternative discharge location. Peruque Creek is the only stream in the immediate area with a significant flow which is maintained year round. It would be cost prohibitive and disruptive to the environment to run a pipe line to any other receiving water body due to disturbance of the natural landscape and acquisitions of property easements. This option is deemed impractical for the high flow discharge.

The sixth non-discharging alternative was improved operations & maintenance. The City and the WWTP staff are currently maximizing the hydraulic capacity to its fullest available extent to manage sustained high flow conditions while running all available treatment units during high flow events. Even with these management techniques, the Effluent Pump Station was still a limiting factor. The City is maximizing the ability of the collection system to convey wastewater to the WWTP and minimizing inflow and infiltration in the collection system. With all of these precautions being taken, the improved operations and maintenance is considered an impractical alternative and is already being done by the City to the extent possible.

The seventh non-discharging alternative is additional effluent pump capacity. This option would involve the construction of a new pump station that would include two 1,000 HP pumps with a new electrical system to accommodate the new electrical loads from pumps of that size. This would cost upward of eight million dollars. This option is deemed impractical and not economically feasible for the city.

The eighth non-discharging alternative is a parallel effluent force main. This option consists of the construction of a new 30-inch force main adjacent to the existing effluent force main to the Mississippi River. This cost for this is estimated to be $12,873,000. This project is considered impractical and not economically feasible for the city.

5.3.1. Regionalization Alternative

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional wastewater collection system is mentioned. The applicant provided discussion of this alternative. O'Fallon WWTP itself has the highest permitted flow of any neighboring facility. The high discharge flow that O'Fallon WWTP sees during sustained high precipitation events is when all surrounding facilities also see high flow conditions. There are no treatment facilities in the immediate area that could take and treat the additional flow during wet weather events.

Needs a Waiver to prevent conflict with area wide management plan approved under Section 208 of the Clean Water Act and/or under 10 CSR 20-6.010(3) (B) 1 or 2 Continuing Authorities? (Y or N) N

5.4. Demonstration of Necessity and Social and Economic Importance

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

The first degrading alternative was the Conventional Activated Sludge system. This is the base case option that includes provisions for Biological Nutrient Removal (BNR) in an MLE type configuration with suspended-growth treatment processes. This consists of a series of reactors for biological treatment including BOD and Ammonia-Nitrogen removal. This option also has the capability for Total Nitrogen and Total Phosphorus nutrient removal with an upgrade in the future.

The second degrading alternative is the same as the first but includes the addition of an effluent Tertiary Filtration system.

The third degrading alternative is identical to the second alternative with the addition of a chemical coagulant for improved treatment performance. This option can also be used to achieve Total Phosphorus removal. Chemical feed and storage systems would need to be included to accommodate chemical addition to the treatment process.

The fourth degrading alternative is a Membrane Bioreactor (MBR). This option involves a suspended growth activated sludge treatment which utilizes filtration for solids-liquid separation within the biological reactor. UV disinfection will be used.

All four degrading options mentioned above are practical alternatives. This analysis showed that the return on environmental benefits with increasing cost of treatment did not justify more expenditure beyond the base case treatment alternative (see Appendix D, Attachment A). The base case, conventional activated sludge system, was the preferred alternative based on this analysis.

Table 2: Alternatives Analysis Comparison

	Conventional Activated Sludge (CAS) (Base Case)	CAS with Tertiary Filtration	CAS with Tertiary Filtration & Chemical Addition	Membrane Bioreactor
BOD_5 (mg/L)	45	10	>5-10	5
TSS (mg/L)	45	15	>5-10	1
DO (mg/L)(Minimum)	5	5	5	5
Ammonia (mg/L)	23.8	1	1	1
Oil & Grease (mg/L)	15	10	10	7
pH (S.U.)	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0
E. coli (#/100mL)	630	126	126	126
Zinc (TR)**	>50% Removal	50-75% Removal	70-90% Removal	50-90% Removal
Copper (TR)**	>50% Removal	50-75% Removal	70-90% Removal	50-90% Removal
Practical	Y	Y	Y	Y
Economical	Y	N	N	N
Life Cycle Cost*	$34,889,000	$48,685,000	$58,937,000	$61,512,000
Base to Alternate Ratio	1.00	1.40	1.69	1.76

* Life cycle cost at 20 year design life and 1.2% interest
** Total Recoverable

5.4.1. LOSING STREAM ALTERNATIVE 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 discharge does not enter a losing stream segment and will not discharge within two miles of a losing stream segment.

5.4.2. SOCIAL AND ECONOMIC IMPORTANCE EVALUATION

The applicant first identified the community that will be affected by the proposed degradation of water quality. Secondly, a number of relevant factors were identified including affordable housing, needed growth, increased land value and tax base, and environmental factors. Within a Social and Economic Benefits section each factor was evaluated. Appendix D, Attachment A: Tier 2 with Significant Degradation form contains a summary of this information.

The new high flow effluent discharge to Peruque Creek from the facility will increase the community's potential to grow and can lead to more jobs being generated in the area which will continue to raise the median household income (MHI) for the cities served by the O'Fallon WWTF. The increase in population increases the need for businesses of all types. These businesses increase the need for jobs while decreasing the poverty level in the surrounding area, which will help to increase the value to existing property in the community. The existing infrastructure will be more easily funded with the expanded tax revenue that is expected from the additional development.

6. General Assumptions of the Water Quality and Antidegradation Review

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

7. Mixing Considerations

Mixing Zone (MZ): One-quarter (1/4) of the stream volume of flow; length one-quarter (1/4) mile. [10 CSR 20-7.031(5)(A)4.B.(III)(a)].

Zone of Initial Dilution (ZID): One-tenth (0.1) of the mixing zone volume of flow, not to exceed 10 times the effluent design flow. [10 CSR 20-7.031(5)(A)4.B.(III)(b)].

The proposed discharge to Peruque Creek from the O'Fallon WWTF is based on higher stream flows than the critical low-flow conditions for Peruque Creek. The definition of low flow conditions is the minimum amount of stream flow occurring immediately upstream of a wastewater discharge, as per 10 CSR 20-7.031(1)(O)1. According to 10 CSR 20-7.031(5)(A)4.F, discharge limitations may be based on higher stream flows if the discharge volume or quality may be adjusted to correlate with stream flows. This proposed discharge is a unique case where the discharge will only occur during wet weather events during which the Mississippi River is under flood conditions. As per 10 CSR 20-7.015(9)(A)2.B.(I) and (II), the water quality based effluent limitations incorporating mixing zones may be based on stream flows other than critical low-flow conditions if the proposed limits are protective of critical low-flow conditions and the permit requires instream flow measurements. The discharge is only expected to occur 0-5 times per year. Weekly Average and Daily Maximum effluent limits have been proposed for each pollutant of concern.

The consultant analyzed precipitation data from NOAA weather station GHCND: USW00053904 in St. Charles County and flow data from US Gage Station 05514712 on Peruque Creek. Stream flows for twelve days of high precipitation were used to determine the typical stream flow in Peruque Creek during periods of high precipitation. The flow in Peruque Creek was determined to be approximately 704 CFS during high flow precipitation events.

8. Permit Limits and Monitoring Information

Wasteload Allocation Study Conducted (Y or N):	N	Use Attainability Analysis Conducted (Y or N):	N	Whole Body Contact Use Retained (Y or N):	Y

Table 3. Effluent Limits Outfall No. 002

Parameter	Units	Daily Maximum ***	Weekly Average	Basis for Limit (Note 2)	Monitoring Frequency (Note 3)
Flow	MGD	*		PEL	once/day
Biochemical Oxygen Demand$_5$**	MG/L		45	PEL	twice/week
Total Suspended Solids**	MG/L		45	PEL	twice/week
pH	SU	6.5– 9.0		FSR	once/day
Ammonia as N (Summer)	MG/L	23.8		PEL	once/month
Ammonia as N (Winter)	MG/L	23.8		PEL	once/month
Escherichia coliform (*E. coli Summer*)	Note 1		630	FSR	twice/week
Oil & Grease	MG/L	15		FSR	once/month
Total Nitrogen	MG/L	*		FSR	once/quarter
Total Phosphorus	MG/L	*		FSR	once/quarter
Copper, Total Recoverable	µG/L	*		PEL	once/quarter
Zinc, Total Recoverable	µG/L	*		PEL	once/quarter

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.**

Note 3 – Only during Wet Weather Discharge.

* Monitoring requirements only.

** This facility is required to meet a removal efficiency of 85% or more for BOD_5 and TSS. Treatment is the same as for Outfall No. 001; therefore, overall removal efficiency will be calculated using both Outfall No. 001 and Outfall No. 002.

*** All pollutants of concern will have either weekly average or daily maximum limits and no monthly average effluent limits since the discharge to Peruque Creek is not continuous as per 40 CFR 122.45(e). The efficiency removal for the O'Fallon WWTF will include the overall discharge to both Peruque Creek and the Mississippi River.

9. Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

10. Derivation and Discussion of Limits

Wasteload allocations and limits were calculated using two methods:

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

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}$$ (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).

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD_5 and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. OUTFALL #002 – MAIN FACILITY OUTFALL 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 (BOD_5).** BOD_5 limits of 45 mg/L weekly average.
  To protect beneficial uses within segment 216 of Peruque Creek, the consultant uses 40 mg/L $CBOD_5$ as input to the Streeter Phelps analysis. Streeter Phelps modeling simulated using the proposed design flow indicated the modeled lowest dissolved oxygen or critical dissolved oxygen sag was 5.5 mg/L. The Department agrees that this is protective of the impairment for dissolved oxygen in Peruque Creek.

  As a result of this analysis, MDNR staff concludes that the above mentioned effluent limits are protective of beneficial uses and existing water quality.

A reaeration system is proposed to be included as part of any future wet weather discharge to Peruque Creek. With a reaeration system, the dissolved oxygen level of the creek would consistently stay above 5 mg/L.

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

- **Total Suspended Solids (TSS).** TSS limits of 45 mg/L daily maximum. According to the EPA, because TSS and BOD_5 are closely correlated, the same limits are applied for TSS as BOD_5.

  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.

- **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

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)*	Total Ammonia Nitrogen CMC (mg N/L)*
Summer	26	7.8	1.7	6.8
Winter	6	7.8	2.7	6.8

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

* Values calculated from existing data.

Summer

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

Chronic WLA: $C_e = ((7.01 + 176)1.7 – (176 * 0.01))/7.01$
$C_e = 44.1$ mg/L

Acute WLA: $C_e = ((7.01 + 17.6)*6.8 – (17.6 * 0.01))/7.01$
$C_e = 23.8$ mg/L

LTA_c = 44.1 mg/L (0.927) = 40.9 mg/L [CV = 0.18, 99th Percentile, 30 day avg.]
LTA_a = 23.8 mg/L (0.672) = 16.0 mg/L [CV = 0.18, 99th Percentile]

MDL = 16.0 mg/L (1.49) = 23.8 mg/L [CV = 0.18, 99th Percentile]

Winter

Chronic WLA: $C_e = ((7.01 + 176)*2.7 – (176 * 0.01))/7.01$
$C_e = 70.2$ mg/L

Acute WLA: $C_e = ((7.01 + 17.6)*6.8 – (17.6 * 0.01))/7.01$
$C_e = 23.8$ mg/L

LTA_c = 70.2 mg/L (0.636) = 64.4 mg/L [CV = 0.21, 99th Percentile, 30 day avg.]
LTA_a = 23.8 mg/L (0.917) = 15.17 mg/L [CV = 0.21, 99th Percentile]

MDL = 15.17 mg/L (1.57) = 23.8 mg/L [CV = 0.21, 99th Percentile]

With the mixing zone allowed for Peruque Creek, the water quality based maximum daily effluent limits for ammonia are less stringent than the proposed effluent limits for the preferred alternative. Therefore, the limits

in the table below will be used for ammonia.

Table 4. Ammonia Limits

Season	Maximum Daily Limit (mg/l)
Summer	23.8
Winter	23.8

- ***Escherichia coli (E. coli)***. Weekly average of 630 per 100 mL 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). A maximum rate of discharge is required by 40 CFR 122.45(e) and 10 CSR 20-7.015(9)(B)1.E. Please see **GENERAL ASSUMPTIONS OF THE WQAR #7.**

- **Oil & Grease**. Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

Metals
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 = 162 mg/L. The Missouri state default receiving stream hardness value of 162 mg/L was used for the analysis of all metals in the *Peruque Creek High Flow Discharge Antidegradation Report.*

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 adsorbed 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
Zinc	0.978	0.986

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- **Copper, Total Recoverable.** Monitoring only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

- **Zinc, Total Recoverable.** Monitoring only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

NUTRIENTS

- **Total Phosphorus and Total Nitrogen**. Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Once per day sampling for one permit cycle or up to 5 years if permit cycle is less than 5 years.

11. Antidegradation Review Preliminary Determination

The proposed new facility discharge, O'Fallon WWTF, 4.53 MGD will result in significant degradation of the segment identified in Peruque Creek. Conventional Activated Sludge (CAS) was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations). The cost effectiveness of the other technologies was evaluated, and the Conventional Activated Sludge system was found to be cost effective and was determined to be the preferred alternative.

It has also been determined that the other treatment options presented (Convention Activated Sludge with Tertiary Filtration, Convention Activated Sludge with Tertiary Filtration and Chemical Addition, and Membrane Bioreactor) may also be considered reasonable alternatives provided they are designed to be capable of meeting the effluent limitations developed based on the preferred alternative. If any of these options are selected, you may proceed with the appropriate facility plan, construction permit application, or other future submittals without the need to modify this Antidegradation review document.

To proceed with a new technology, your construction permit application must address approvability of the technology in accordance with the *New Technology Definitions and Requirements* factsheet available at http://dnr.mo.gov/pubs/pub2453.htm. If you have any questions regarding the new technology factsheet, please contact the Water Protection Program. The permittee will need to work with the review engineer to ensure equipment is sized properly and that the technology will consistently achieve the proposed effluent limits. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation.

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

Reviewer: Sonali Siriwardana
Date: February 28, 2018
Unit Chief: John Rustige, P.E. JR

Appendix A: Map of Discharge Location to Peruque Creek

Appendix B: Natural Heritage Review

Missouri Department of Conservation

Natural Heritage Review Report

June 5, 2017 -- Page 1 of 2

Resource Science Division
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Brittnie Brauner
Brittnie.Brauner@mdc.mo.gov
(573) 522 – 4115 ext. 3182

ROBERT POLYS
WOODARD & CURRAN, INC.
41 HUTCHINS DR.
PORTLAND, ME 04102

Project type:	WASTEWATER
Location/Scope:	LANDGRANT 469
County:	ST. CHARLES
Query reference:	O'FALLON WWTF
Query received:	5/4/2017

is NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and sensitive resources known to have been cated close to and/or potentially affected by the proposed project. On-site verification is the responsibility of the project. Natural Heritage records re identified at some date and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do nt communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected ecies will not be encountered. These records only provide one reference and other information (e.g. wetland or soils maps, on-site inspections or surveys) ould be considered. Look for additional information about the biological and habitat needs of records listed in order to avoid or minimize impacts. More formation is at http://mdc.mo.gov/discover-nature/places-go/natural-areas and mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx.

evel 3 issues: Records of federal-listed (these are also state-listed) species or critical abitats near the project site:

atural Heritage records identify no wildlife preserves, no designated wilderness areas or critical abitats, and no federal-listed species records within the project area, or in the public land survey ection listed above or sections adjacent.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact the U.S. Fish and Wildlife Service (101 Park DeVille Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information.

evel 2 issues: Records of state-listed (not federal-listed) endangered species AND / OR tate-ranked (not state-listed endangered) species and natural communities of conservation oncern. The Department tracks these species and natural communities due to population eclines and/or apparent vulnerability.

atural Heritage records identify no state-listed endangered species within the project area.

atural Heritage records identify no state-ranked species and/or natural communities within the roject area.

ee https://nature.mdc.mo.gov/sites/default/files/downloads/2017-SOCC.pdf for a complete list of pecies and communities of conservation concern.

STATE ENDANGERED species are listed in and protected under the Wildlife Code of Missouri (3CSR10-4.111).

eneral recommendations related to this project or site, or based on information about ie historic range of species (unrelated to any specific Natural Heritage records):

Indiana bats *(Myotis sodalis*, federal and state-listed endangered) occur in St. Charles County and could occur within the project area. Indiana bats and Northern long-eared bats (*Myotis septentrionalis*, federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. **If any trees need to be removed by your project, please contact the U.S. Fish and**

Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.

- Bald eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html if eagle nests are seen.

- St. Charles County has known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area.

- Clean Water Act permits issued by other agencies regulate both construction and operation of wastewater systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream. Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions.

- Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with of native plant species compatible with the local landscape and for wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.

- Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers is a Conservation Department publication available at http://mdc.mo.gov/sites/default/files/resources/2013/02/constprojnearstreams_2013.pdf

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≧140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

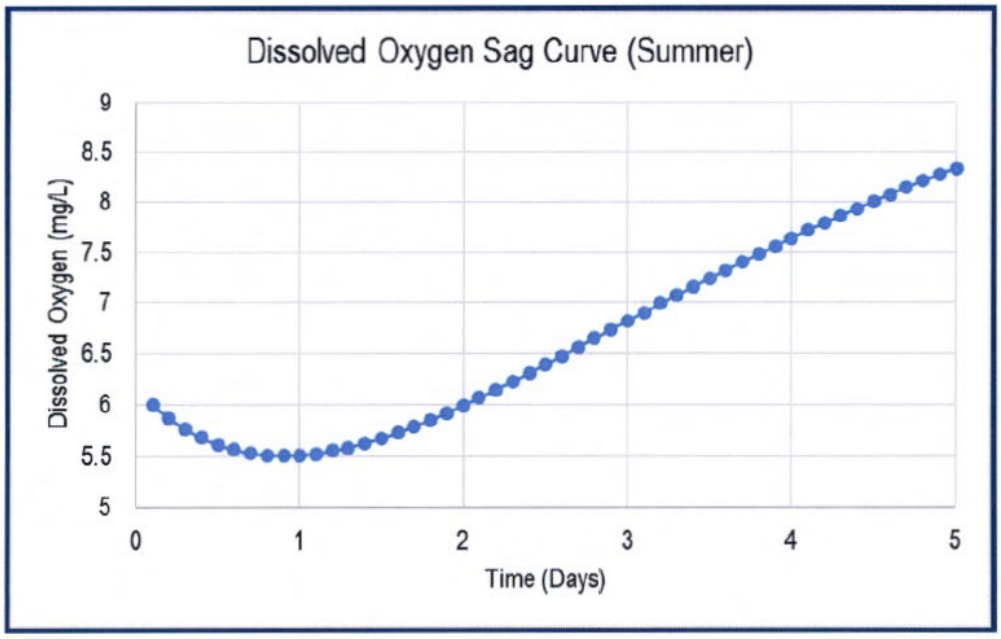
These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Appendix C: Streeter Phelps Model – Applicant Results

A Maximum Day effluent BOD_5 of 45 mg/L was assumed as the treated effluent value for the wet weather discharge based on the weekly average Technology Based Limits previously presented. The Streeter-Phelps formula was used to calculate the minimum dissolved oxygen concentration in the Summer months that would occur in Peruque Creek during a typical high flow discharge event.

With the anticipated maximum daily BOD_5 limit of 45 mg/L and an effluent DO of 5 mg/L; the DO of Peruque Creek will not fall below state WQS'. The following figure depicts the summer DO sag curve at the proposed maximum daily BOD_5 discharge limit with a wet weather discharge flow of 4.53 MGD (7.02 CFS).

Figure 2-1 Peruque Creek Dissolved Oxygen Sag Curve (Summer)



As previously mentioned the Streeter-Phelps equation was used to determine the DO sag curves, and ultimately help analyze the proposed effluent limits for BOD_5. The equation which was used and variable explanations are provided as follows:

$$D_t = ((K_d * L_o)/(K_r - K_d)) * (e^{-K_d * t} - e^{-K_r * t}) + D_o * e^{-K_2 * t}$$

D= Dissolved Oxygen Deficit (mg/L)

t = Time measured downstream from the point of discharge (days)

D_o = Dissolved Oxygen deficit at point of discharge (mg/L)

$D_0 = DO_{sat} - DO_{mixed}$

BOD_5 = BOD of the river and WWTF effluent mixed (mg/L)

L_o = Ultimate BOD at point of discharge (mg/L)

$$L_o = BOD_5/(1 - e^{-5 * K_d})$$

K_d = Deoxygenation coefficient, base e, ($days^{-1}$)

θK_d = Deoxygenation coefficient temperature correction factor

- 1.056 was assumed for temperatures between 20°C & 30°C to account for Summer conditions

K_r = Reoxygenation (Reaeration) coefficient, base e, ($days^{-1}$)

θKr = Reaeration coefficient temperature correction factor

- 1.024 was assumed for summer conditions

Q_w = O'Fallon WWTP High Flow Event Effluent Flow = 4.53 MGD (7.02 CFS)

S_w = O'Fallon WWTP Effluent BOD_5 = 45 mg/L (Daily Maximum)

DO_w = O'Fallon WWTP Effluent Dissolved Oxygen = 5 mg/L

Q_s = Peruque Creek Mixing Zone Flow = 176 CFS

$T_{s\text{-}Summer}$ = Peruque Creek Summer Temperature = 25.4 °C

$T_{s\text{-}Winter}$ = Peruque Creek Winter Temperature = 4.2 °C

$T_{w\text{-}Summer}$ = O'Fallon WWTP Summer (June – September) Temperature = 21.6 °C

$T_{w\text{-}Winter}$ = O'Fallon WWTP Winter (Nov. – March) Temperature = 14.8 °C

S_s = Peruque Creek Background BOD_5 = 7.66 mg/L. Average Summer BOD_5 concentration obtained from data provided by the MDNR for periodic sampling from January 1978 to August 1990. This background BOD_5 data was typically recorded at low flows and Summer temperatures in Peruque Creek. It is anticipated that any time the Peruque Creek discharge will be used the Creek will be experiencing high flows with reduced background BOD_5. The discharge

Appendix D: Antidegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, O'Fallon WWTP, MDNR staff determined that changes must be made to the information contained within these attachments.

The following were modified and can be found within the MDNR WQAR:

1) Attachment A: Ammonia limits under section 9 for Identifying Alternatives should match the daily maximum limits given under Section 8 since these are the limits the facility will be expected to meet.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

ANTIDEGRADATION REVIEW SUMMARY FOR PUBLIC NOTICE
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

FACILITY

ME		TELEPHONE NUMBER WITH AREA CODE	
y of O'Fallon Wastewater Treatment Plant		(636) 379-7605	
DRESS (PHYSICAL)	CITY	STATE	ZIP CODE
0 Firma Road	O'Fallon	MO	63366

OWNER

ME AND OFFICIAL TITLES			
y of O'Fallon, MO			
DRESS	CITY	STATE	ZIP CODE
0 North Main Street	O'Fallon	MO	63366
LEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS		
36) 379-7605	mpratt@ofallon.mo.us		

CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at ww.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

ME AND OFFICIAL TITLES			
y of O'Fallon, MO			
DRESS	CITY	STATE	ZIP CODE
0 North Main Street	O'Fallon	MO	63366
LEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS		
36) 379-7605	mpratt@ofallon.mo.us		

RECEIVING WATER BODY SEGMENT #1

ME
tfall #002: Peruque Creek (Proposed)

1 UPPER END OF SEGMENT (Location of discharge)
UTM _____ OR Lat 38.843614 Long -90.694922
2 LOWER END OF SEGMENT
UTM _____ OR Lat 38.896017 Long -90.646972

r 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 sting sources and confluences with other significant water bodies."

WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)

ME

1 UPPER END OF SEGMENT
UTM _____ OR Lat _____, Long _____
2 LOWER END OF SEGMENT
UTM _____ OR Lat _____, Long _____

WET WEATHER ANTICIPATIONS

an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a sibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations cluding 40 CFR 122.41(m)(4). Attach the feasibility analysis to the antidegradation review report.

hat is the Wet Weather Flow Peaking Factor in relation to design flow? Not Applicable (N/A)

et Weather Design Summary:
ıe proposed Peruque Creek outfall will be used only when sustained high flows are seen at the WTP and the Mississippi River is at or above the National Weather Service Flood Stage.

. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

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

omments/Discussion: Not Applicable (N/A)

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

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

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

ollutants of Concern*	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
OD5	MG/L			45
SS	MG/L			45
ISSOLVED OXYGEN	MG/L			5
MMONIA	MG/L			(Sum/Win) 14.4/23.8
ACTERIA (E. COLI)	CFUS			1,030
pH	SU			6.5-9.0
Oil & Grease	MG/L			15
Total Phosphorous & Nitrogen	MG/L			Monitor Daily
Copper & Zinc	UG/L			Monitor Daily

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

ssumed Tier 2.

IDENTIFYING ALTERNATIVES

pply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause gnificant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation plementation 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 pportive documentation in the Antidegradation Review report.

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

on-degrading alternatives: Land Application, Subsurface Land Application, Alternate Discharge Location, Regional Treatment, etc.

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

lternatives	Level of Treatment Attainable for each Pollutant of Concern					
	BOD5	TSS	AMMONIA AS N	Oil & Grease	E. Coli Bacteria	Dissolved Ox.
	(MG/L)	MG/L	MG/L	MG/L	#/100 mL	MG/L
CAS	<45	<45	1	<15	<1,030	>5
CAS With Tertiary Filtration	<10	<15	<1	<10	<126	>5
CAS With TF & Chem. Add.	<5-10	<5-10	<1	<10	<126	>5
Membrane Bioreactor	<5	<1	<1	<7	<126	>5

). DETERMINATION OF THE REASONABLE ALTERNATIVE

er the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically ficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. **Please do not write iee Report" for any box below.**

racticability Summary:

"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.

ght no-discharge (non-degrading) alternatives were considered based on WWTP location, land availability & flow. Of these eight ernatives, construction of a high flow pump station to pump all flows to the Mississippi River outfall and construction of a parallel ce main were considered to be practical. Less-degrading alternatives were also considered as part of the analysis. The base case nsidered was a Conventional Activated Sludge (CAS) with Biological Nutrient Removal (BNR) treatment process, with less grading alternatives being CAS with Tertiary Filtration, CAS with Tertiary Filtration and chemical addition and Membrane Bioreactor. of the less degrading alternatives were considered to be practical.

conomic Efficiency Summary:

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.

of the practicable alternatives, both no-discharge and less-degrading, had cost analysis preformed to determine if they were onomically efficient when compared to the base CAS project with a High Flow discharge to Peruque Creek. Though the cost alysis it was determined that both no-discharge alternatives were not economically efficient when compared to the Peruque Creek gh Flow discharge. The cost analysis also showed that the three less-degrading alternatives were not economically efficient when mpared to the base CAS treatment process.

ffordability Summary:

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."

e CAS treatment process with high flow discharge to Peruque Creek is the only alternative considered to be affordable.

eferred Chosen Alternative:

e Conventional Activated Sludge treatment alternative with Biological Nutrient Removal and a High Flow Discharge to Peruque eek was selected as the proposed alternative due to its ability to meet State Water Quality Standards and also remain economically ordable.

easons for Rejecting the other Evaluated Alternatives:

e no-discharge alternatives were considered to be either not practicable or not affordable for the City. The less-degrading rnatives were not affordable for the City.

mments/Discussion:

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 is the City of O'Fallon, Missouri

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 of O'Fallon is a growing community with numerous new commercial and residential developments throughout the City. With all of the growth, the median household income has gone up over the past ten years and unemployment has fallen. The majority of the City's residents are on a public wastewater system and much of the new development relies on the ability for the wastewater system to handle their flows.

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.

When high flows are seen at the WWTP and the Mississippi River is at or above the National Weather Service Flood Stage the UV Disinfection system becomes submerged causing a hazard to WWTP staff. In order to handle these flows the WWTP needs a reliable way to dispose of their treated effluent in high flow conditions. The Peruque Creek High Flow discharge provides the City an affordable way to dispose of their treated effluent while allowing growth, development and sewer service within the City.

PROPOSED PROJECT SUMMARY:

When the WWTP experiences high flows and the Mississippi River is at or above the National Weather Service Flood Stage the Effluent Pump Station is hydraulically limited and cannot pump flows in excess of 12.75 MGD to the Mississippi River. As a result flow backs up in the UV Disinfection System. The City has had flow backup into the UV Disinfection system in the past which can cause damage and presents a safety hazard to the City staff. The most recent occurrences were on April 29th and May 4th of 2017. The only practicable and affordable solution is to discharge a portion of the fully treated effluent flow to Peruque Creek. This project will include a high flow pump station and dedicated outfall to Peruque Creek which will only be used as needed. It is anticipated that the proposed outfall will be used 0-5 times per year based on past WWTP records and feedback from the City staff.

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	DATE
Robert T. Polys	5/25/2017

NAME AND OFFICIAL TITLES / LICENSE #	COMPANY NAME
Robert T. Polys, P.E., Technical Manager / MO PE-2017010251	Woodard & Curran, Inc.

ADDRESS	CITY	STATE	ZIP CODE
1520 South Fifth Street	St. Charles	MO	63303

TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
(207) 558-3812	rpolys@woodardcurran.com

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

SIGNATURE	DATE
	6/7/17

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

SIGNATURE	DATE
Same As Owner	6/7/17

APPENDIX – COST ANALYSIS WAIVER

Carlile, Cailie

From: Chris Horvath <chorvath@ofallon.mo.us>
Sent: Tuesday, July 2, 2019 7:50 AM
To: Carlile, Cailie
Cc: 'Robert Polys'; Chris Horvath
Subject: RE: O'Fallon Construction Permit Completeness Check

The City of O'Fallon would like to waive the affordability finding.

Chris Horvath
Water and Sewer Senior Project Manager
Public Works Department
City of O'Fallon
100 N. Main Street
O'Fallon, MO 63366
Office: (636) 379-4225
Cell: (636) 233-2665

Missouri Department of Natural Resources
Factsheet Addendum
For Pretreatment Program Modification
#MO-0028720
O'Fallon Wastewater Treatment Facility

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 O'Fallon 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 if 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 is not required to public notice this program modification.

In a letter dated June 16, 2021, EPA's Office of Information Management confirmed that the city of O'Fallon's proposed Pretreatment Electronic Reporting Program (PERP) is Cross Media Electronic Reporting Regulation (CROMERR)-

compliant. The City is adopting a new PERP for industrials that must submit reports under the federal General Pretreatment Regulation at 40 CFR 403. Modifications to the sewer use ordinance (SUO) under Section 700.480.N.1.and City's industrial user permit template are non-substantial changes in 40 CFR 403.18(b)(1). The City's proposed modification submission also included PERP training modules for administrators and industrial users.

See Factsheet **Appendix** for POTW's October 20, 2021, Statement of Basis letter for the CROMERR-compliant pretreatment modification. This is a non-substantial modification of the city's pretreatment program, according to the 40 CFR 403.18(b)(1). These changes do not require public notice and are hereby approved pursuant to 40 CFR 403.18 (adopted in 10 CSR 20-6.100) and the city of O'Fallon should proceed to implement the pretreatment program requirements and permit modification to incorporate the CROMERR system.

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: 01/04/2022

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
MO-0028720
O'FALLON WASTEWATER TREATMENT FACILITY

This Statement of Basis (Statement) gives pertinent information regarding a minor modification to the above listed operating permit without the need for a public comment process. A Statement is not an enforceable part of a Missouri State Operating Permit.

Part I – Facility Information

Facility Type: POTW
Facility Description: Influent lift station / flow equalization basins (2) / bar screen / grit tank / primary clarifiers (4) / biofilter towers (3) / activated sludge basins (4) / final clarifiers (4) / UV disinfection / effluent pump station / aerobic digester / rotary drum sludge thickeners (2) / lime stabilization / sludge belt filter press / sludge screw press (2 as back-up to sludge belt filter press) / sludge storage tank / biosolids are land applied or sludge is landfilled

Part II – Modification Rationale

This operating permit is hereby modified to correct an error in the permit that required Methylene Chloride to be collected as a composite sample. Methylene Chloride is a volatile organic compound and therefore should be collected as a grab sample.

No other changes were made at this time.

Part III – 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.

DATE OF FACT SHEET: OCTOBER 6, 2020

COMPLETED BY:

SAM BUCKLER, ENVIRONMENTAL PROGRAM ANALYST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573)526-0827
sam.buckler@dnr.mo.gov

Missouri Department of Natural Resources
Factsheet Addendum
For Pretreatment Program Modification
#MO-0028720
O'Fallon Wastewater Treatment Facility

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 O'Fallon 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 if 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 is not required to public notice this program modification.

The city is adopting the U.S. Environmental Protection Agency's (EPA's) 2005 amendments to the federal General Pretreatment Regulation at 40 CFR 403. Modifications to the sewer use ordinance (SUO) and enforcement response plan (ERP) that incorporate the revisions to a federal rule are non-substantial changes, as stated in the publication of the 2005 Streamlining Rule in the Federal Registry at 70 FR 60187 and in 40 CFR 403.18(b)(1) which says modifications that relax POTW legal authorities [as described in §403.8(f)(1)] are substantial modifications, **except** for modifications that directly reflect a revision to this part 403 or to 40 CFR chapter I, subchapter N, and are reported pursuant to paragraph (d) of 40 CFR 403.18.

See Factsheet **Appendix** for POTW's Statement of Basis letter for the SUO and ERP pretreatment modification. This is a non-substantial modification of the city's pretreatment program, according to the 40 CFR 403.18(b)(1). These changes do not require public notice and are hereby approved pursuant to 40 CFR 403.18 (adopted in 10 CSR 20-6.100) and the city of O'Fallon should proceed to implement the pretreatment program requirements.

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: 07/15/2020

Completed by:
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0028720
O'FALLON WASTEWATER TREATMENT PLANT

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 lift station / flow equalization basins (2) / bar screen / grit tank / primary clarifiers (4) / biofilter towers (3) / activated sludge basins (4) / final clarifiers (4) / UV disinfection / effluent pump station / aerobic digester / rotary drum sludge thickeners (2) / lime stabilization / sludge belt filter press / sludge screw press (2 as back-up to sludge filter press) / sludge storage tank / biosolids are land applied or sludge is landfilled

Have any changes occurred at this facility or in the receiving water body that affects effluent limit derivation?
✓ No.

Application Date: 09/16/19
Expiration Date: 03/31/20

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	17.4	Secondary	Domestic

Facility Performance History:
This facility was last inspected on June 20, 2019. The inspection showed the following unsatisfactory features:

- Facility failed to adequately address the cause of ammonia limit exceedances, and to explain how future exceedances would be prevented.
- Facility failed to provide written notification to the Saint Louis Regional Office of the use of the emergency sludge storage basin and failed to submit the 2018 sludge report on time.
- Facility failed to submit the 2018 Schedule of Compliance report on time.
- Facility failed to properly conduct and report WET tests.
- Facility's daily operational log was missing monitoring reading for Dissolved Oxygen and Temperature.
- Facility was using the incorrect incubator temperature to perform *E.coli* tests according to Standard Methods.
- Facility's pH buffer solutions used to calibrate the pH meter were expired.
- Facility was not keeping log books to document maintenance and calibration of each major lab instrument.
- Facility failed to adequately address the causes for not meeting BOD percent removal requirements, and to explain how future non-compliances would be prevented.

Sufficient responses to theses unsatisfactory features were received on August 28th and September 17th, 2019 to return the facility to compliance. A review of Discharge Monitoring Reports (DMRs) from the previous permit cycle revealed the following parameter exceedances (month/year):

- *E. coli*: 09/19
- Ammonia: 09/17, 11/17, 12/17, 07/18, 09/18, 12/18, 05/19, 10/19

Comments:
Changes in this permit include the following:

- a new ammonia limit derived using updated flow data and site specific conditions, and the Department's 2019 Total Ammonia Nitrogen Criteria Implementation Guidance
- the removal of quarterly monitoring requirements for Total Recoverable Copper and Zinc, and Total Hardness
- the addition of quarterly monitoring for Methylene Chloride
- the addition of a limit for the acute WET test instead of monitoring only
- the removal of the chronic WET test monitoring requirement
- the removal of instream monitoring for Total Phosphorus and Total Nitrogen
- the addition of monthly, influent and effluent monitoring for Total Phosphorus and Speciated Total Nitrogen. Total Nitrogen should now be reported as Speciated Total Nitrogen (Total Kjeldahl Nitrogen and Nitrate + Nitrate).

See Part VI of the Fact Sheet for further information regarding the addition, revision, and removal of effluent parameters. Special conditions were updated to include a requirement to update the pretreatment program to comply with the "Streamlining" revisions to the federal pretreatment rule, a requirement to revise local limits in the pretreatment program, and a requirement to submit Expanded Effluent Testing Data with permit renewal applications that characterizes the effluent with sufficiently sensitive data to evaluate reasonable potential to exceed water quality criteria. Additionally, the schedule of compliance established in the previous permit has been terminated with the issuance of this permit. Due to the use of new flow data and the Department's 2019 Total Ammonia Nitrogen Criteria Implementation Guidance, the ammonia limit calculated in this permit is less strict than the ammonia limits established in the previous permit and a schedule to obtain compliance with the new ammonia limit is not necessary.

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	☐ - State agency
☐ - County	☐ - Public Water Supply Districts
☐ - Public Sewer District	☐ - 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: Marshall Suddarth
Certification Number: 5100
Certification Level: WW-A

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. 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:

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 #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Mississippi River	P	3699	AQL-WWH, DWS, HHP, IND, IRR, LWW, SCR, WBC-A	07110009-0106	0.0

*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 HHF) = 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
Mississippi River (P)	19,961.4	27,927.1	32,241.3

* - Data from USGS Gauge Station 05587450 located on the Mississippi River at Grafton, IL.. Daily flow values from 2-4-2000 to 2-4-2020 were used to generate annual 7-day, 1-day, and 30-day low-flow values. In a 2008 Water Quality Review Sheet (WQRS), Water Protection Program staff determined the flow through the Peruque Island slough by first assuming that the flow splits proportionally between the slough and the main channel. Then, we assumed the slough as shallower than the main channel, and with the wing dike at the entrance of the slough, we assumed flow is further restricted as compared to the main channel. Thus, we assumed the slough is not more than 10 percent of the total main channel flow. We then created a mixing zone with one quarter of that value. For example, 10% of 25550 cfs = 2,555 cfs, and 1/4 of that value is 638 cfs. – Using this basis, the permit writer took 10% of the 1Q10, 7Q10, and 30Q10 to develop the Mixing Zone flows.

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
499.00	698.18	806.03	49.900	69.818	80.603

RECEIVING STREAM MONITORING REQUIREMENTS:
No receiving water monitoring requirements recommended at this time.

Receiving Water Body's Water Quality
Currently, the Department has not conducted a stream survey for this facility. 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 using updated site-specific data for flow, temperature, pH, and background ammonia concentrations. Additionally, 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 direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will

need to be calculated into WLA with mixing considerations using the mass-balance equation. The newly established limitations are still protective of water quality.

- **Metals & Total Hardness (SM2)**. A reasonable potential analysis showed that this facility does not have reasonable potential to exceed water quality criteria for Total Recoverable Copper and Total Recoverable Zinc. Additionally, the facility's DMRs have consistently shown that the detectable levels in the effluent are far below the limits this facility would receive based on the water quality criteria due to the large mixing allowance received for discharging to the Mississippi River; therefore monitoring requirements have been removed from the permit at this time. Monitoring for Total Hardness was also removed from this permit as there are no requirements for hardness dependent metals. The permit is still protective of water quality and this determination will be reassessed at the time of renewal. Please see Appendix – RPA Results for more information.

- **Upstream Nutrient Monitoring (SM1)**. The previous permit required quarterly monitoring for instream nutrients. Instream nutrient monitoring has been determined to be no longer necessary. Nutrient monitoring in the Mississippi River is already being conducted by the United States Geological Survey as part of their effort to reduce nutrient loading in the Gulf of Mexico and sufficient data is available. Therefore, instream nutrient monitoring requirements have been removed from this permit.

- **Chronic WET Test**. The previous permit required one chronic WET test be performed per permit cycle for monitoring purposes only. The October 2019 chronic WET test showed that the facility does not exhibit toxicity at the allowable effluent concentration for the chronic WET test due to the large mixing zone allocated to this facility. However, the permit writer has determined that the discharge has reasonable potential to cause an excursion of the acute whole effluent water quality standard and has implemented a WET_a effluent limitation of 1.5 TU_a. The department believes that the reduced mixing considerations allowed for zones of initial dilution, which increase the AEC concentration, becomes more protective than chronic testing with larger mixing considerations. The facility is now required to perform yearly acute WET tests that represent the instream conditions in the zone of initial dilution where the impact from the facility's discharge is greater than in the large mixing zone where chronic toxicity is monitored. The permit is still protective of water quality and this determination will be reassessed at the time of renewal.

✓ 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; alternatively, sludge can be disposed of by landfill.

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. For more information, please see the Department's Nutrient Criteria Implementation Plan at: https://dnr.mo.gov/env/wpp/rules/documents/nutrient-implementation-plan-final-072618.pdf

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 Carbonaceous Biochemical Oxygen Demand 5-day ($CBOD_5$) 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.

✓ This permit does not contain an SOC. The schedule of compliance established in the previous permit has been terminated with the issuance of this permit. Due to the use of new site-specific data for flow, temperature, pH, and background ammonia concentrations, and the Department's 2019 Total Ammonia Nitrogen Criteria Implementation Guidance, the ammonia limit calculated in this permit is less strict than the ammonia limits established in the previous permit and a schedule to obtain compliance with the new ammonia limit is not necessary.

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:

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

Where C = downstream concentration Ce = effluent concentration
Cs = upstream concentration Qe = effluent flow
Qs = 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. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

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

✓ 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 BOD_5 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 NH_3)
- ☒ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- ☐ Other – please justify.

✓ The permittee is required to conduct WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from "bypassing" untreated or partially treated sewage (wastewater) beyond the headworks. A bypass 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(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

✓ 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 discharges to a stream with an EPA approved TMDL. The Mississippi River (P) 3699 has an EPA approved TMDL for Chlordane and Poly-Chlorinated Biphenyls (PCBs). Chlordane and PCBs bio-accumulate in fish tissue and impair the protection of human health use designation of this water body. There are no Missouri facilities which discharge either directly to the Mississippi River or to a tributary where the Mississippi River is the first classified water body, that have that potential for discharging detectable amounts of PCBs or chlordane. Since chlordane and PCBs were banned in 1988 and 1977, respectively, there should be negligible discharge of chlordane and PCBs into streams from wastewater treatment plants and other point sources.

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.

- ☒ Missouri or Mississippi River [10 CSR 20-7.015(2)]
- ☐ Lakes or Reservoirs [10 CSR 20-7.015(3)]
- ☐ Losing Streams [10 CSR 20-7.015(4)]
- ☐ Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
- ☐ Special Streams [10 CSR 20-7.015(6)]
- ☐ Subsurface Waters [10 CSR 20-7.015(7)]
- ☐ All Other Waters [10 CSR 20-7.015(8)]

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:

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
$CBOD_5$	mg/L	1		40	25	40/25	2/week	monthly	C
TSS	mg/L	1		45	30	45/30	2/week	monthly	C
*Escherichia coli***	#/100mL	1, 3		630	126	630/126	2/week	monthly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	32.3		32.3	25.2/ 17.8	1/month	monthly	C
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	32.3		32.3	25.2/ 17.0	1/month	monthly	C
Oil & Grease	mg/L	1, 3	15		10	15/10	1/month	monthly	G
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
Acute Whole Effluent Toxicity	TUa	1, 9	1.5			*	1/year	annually	C
Methylene Chloride	µg/L	7	*		*	***	1/quarter	quarterly	C

PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.0		9.0	6.0-9.0	2/week	monthly	G

PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg. Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
$CBOD_5$ 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
M = Measured/calculated

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

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.

- **Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)**.

  ✓ Operating permit retains 40 mg/L as a Weekly Average and 25 mg/L as a Monthly Average from the previous permit. The BOD limit for this facility would be 45 mg/L weekly average and 30 mg/L monthly average per 10 CSR 20-7.015(2)(A)1; however, 10 CSR 20-7.015(2)(A)4. requires the Department to set a carbonaceous BOD_5 at five milligrams per liter (5 mg/L) less than the regular BOD in the operating permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

- **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 126 per 100 mL as a geometric mean and Weekly Average of 630 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 (A) 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 = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen**. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. For the period February 2015 to February 2020, temperature, pH, and background ammonia concentrations were obtained from the USGS – WQ station USGS 05587455 on the Mississippi River below Grafton, IL. Background total ammonia nitrogen = 0.05 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. The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation:

  $$Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)}$$

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

  In the event that mixing considerations derive an AML less stringent than the MDL, the AML and MDL will be equal and based on the MDL.

Month	Temp (˚C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)

January	7.2	8.0	2.4	8.4
February	7.2	8.0	2.4	8.4
March	7.2	8.0	2.4	8.4
April	26.1	8.0	1.1	8.4
May	26.1	8.0	1.1	8.4
June	26.1	8.0	1.1	8.4
July	26.1	8.0	1.1	8.4
August	26.1	8.0	1.1	8.4
September	26.1	8.0	1.1	8.4
October	7.2	8.0	2.4	8.4
November	7.2	8.0	2.4	8.4
December	7.2	8.0	2.4	8.4

January

Chronic WLA:
C_e = ((17.44 + 806)2.4 – (806* 0.05))/17.44 = 111.1 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9* 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

February

Chronic WLA:
C_e = ((17.44 + 806)2.4 – (806* 0.05))/17.44 = 111.1 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9* 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

March

Chronic WLA:
C_e = ((17.44 + 806)2.4 – (806 * 0.05))/17.44 = 111.1 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

April

Chronic WLA:
C_e = ((17.44 + 806)1.1 – (806 * 0.05))/17.44 = 49.7 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

May

Chronic WLA:
C_e = ((17.44 + 806)1.1 – (806 * 0.05))/17.44 = 49.7 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML =**32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

June

Chronic WLA:
C_e = ((17.44 + 806)1.1 – (806 * 0.05))/17.44 = 49.7 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML =**32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

July

Chronic WLA:

August

Chronic WLA:

C_e = ((17.44 + 806)1.1 – (806* 0.05))/17.44 = 49.7 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9* 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

C_e = ((17.44 + 806)1.1 – (806* 0.05))/17.44 = 49.7 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9* 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

September

Chronic WLA:
C_e = ((17.44 + 806)1.1 – (806 * 0.05))/17.44 = 49.7 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

October

Chronic WLA:
C_e = ((17.44 + 806)2.4 – (806 * 0.05))/17.44 = 111.1 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

November

Chronic WLA:
C_e = ((17.44 + 806)2.4 – (806 * 0.05))/17.44 = 111.1 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

December

Chronic WLA:
C_e = ((17.44 + 806)2.4 – (806 * 0.05))/17.44 = 111.1 mg/L

Acute WLA:
C_e = ((17.44 + 49.9)8.4 – (49.9 * 0.05))/17.44 = 32.3 mg/L

Acute WLA = MDL = AML = **32.3** mg/L

Chronic WLA is less stringent than the acute WLA; therefore, the AML and MDL will be equal and based on the acute WLA.

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

- **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**. 6.0-9.0 SU. pH limitations [10 CSR 20-7.015] are protective of the water quality standard [10 CSR 20-7.031(5)(E)], due to the assimilative capacity of the receiving stream.

- **Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) 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 BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for $CBOD_5$.

- **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 BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.

- **Methylene Chloride**. A review of expanded effluent testing data revealed a detectable amount of methylene chloride in this facility's discharge. Monitoring only is required at this time to obtain sufficient data to perform a reasonable potential analysis at the next permit renewal.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity**. The permit writer has determined that this facility has reasonable potential to cause toxicity in the receiving stream due to the 2018 acute WET test report showing TUa >1 for both test species.

Acute WLA: $C_e = ((17.44 + 69.82)0.3 – (69.82* 0.0))/17.44$
$C_e = 1.5$ TUa

$LTA_a = 1.5$ TUa (0.321) = 0.483 TUa [CV = 0.6, 99th Percentile]

MDL = 0.483 TUa (3.114) = 1.5 TUa [CV = 0.6, 99th Percentile]

✓ Classified P with other than default Mixing Considerations, the AEC% is determined as follows:

Acute AEC% = $\{[(17.44 + 69.82) / 17.44]^{-1}\}$ x 100 = 20%

Parameters Removed.

- **Metals & Total Hardness (SM2)**. The previous permit contained quarterly monitoring for Total Recoverable Copper and Total Recoverable Zinc. A reasonable potential analysis showed that this facility does not have reasonable potential to exceed water quality criteria. Monitoring requirements have been removed from the permit at this time. Additionally monitoring requirements for Total Hardness have been removed from this permit as there are no longer requirements for hardness dependent metals.

- **Upstream Nutrient Monitoring (SM1)**. The previous permit required quarterly monitoring. Instream nutrient monitoring has been determined to be unnecessary as the Department is now assessing the facility's ability to remove nutrients by monitoring the influent and effluent. Additionally, nutrient monitoring in the Mississippi River is already being conducted by the United States Geological Survey as part of their effort to reduce nutrient loading in the Gulf of Mexico and data is readily available; therefore, instream nutrient monitoring requirements have been removed from this permit.

- **Chronic WET Test**. The previous permit required one chronic WET test be performed per permit cycle for monitoring purposes only. The October 2019 chronic WET test showed that the facility does not exhibit toxicity at the allowable effluent concentration for the chronic WET test due to the large mixing zone allocated to this facility. However, the permit writer has determined that the discharge has reasonable potential to cause an excursion of the acute whole effluent water quality standard and has implemented a WET_a effluent limitation of 1.5 TU_a. The department believes that the reduced mixing considerations allowed for zones of initial dilution, which increase the AEC concentration, becomes more protective than chronic testing with larger mixing considerations. The facility is now required to perform yearly acute WET tests that represent the instream environment in the zone of initial dilution where the facility's discharge is having more of an impact than in the large mixing zone where chronic toxicity is monitored.

Sampling Frequency Justification: Sampling and Reporting Frequency was retained from previous permit. 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.

Acute Whole Effluent Toxicity

✓ No less than **ONCE/YEAR**:
- Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- Facility incorporates a pretreatment program.

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*, and Oil & Grease 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 ***
$CBOD_5$	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.
** - Parameter not previously established in previous state operating permit.
**** - C = Composite

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

Influent Parameters

- **Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) 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 BOD_5 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 $CBOD_5$ and TSS have been retained from the previous permit.

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.

OUTFALL #001 – 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.

(I) 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 Report of Compliance Inspection for the inspection conducted on June 20, 2019, 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 secondary treatment technology based effluent limits established in 40 CFR 133 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.

(J) 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.
(K) 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.
(L) 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.
(M) 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.
(N) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.
(O) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.
(P) 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.
(Q) 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 O'Fallon

New Permit Requirements

Monthly, influent and effluent sampling for Total Phosphorus, Total Speciated Nitrogen, and Ammonia. Quarterly monitoring for Methylene Chloride.			
Estimated Annual Cost	Annual Median Household Income (MHI)	Estimated Monthly User Rate	User Rate as a Percent of MHI
$2,532	$86,646	$45.59	0.63%

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 does not contain requirements for a water quality standard that has changed twenty-five percent or more since the previous operating 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.

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 June 5, 2020 to July 6, 2020. No responses received.

DATE OF FACT SHEET: FEBRUARY 5, 2020

COMPLETED BY:

SAM BUCKLER, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES

WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 526-0827
sam.buckler@dnr.mo.gov

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.)	10
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	10
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	5
Primary Treatment		
Primary clarifiers	5	5
Chemical addition (except chlorine, enzymes)	4	
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	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	
Carbon regeneration	4	
Total from page **ONE (1)**	----	69

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	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)**	----	36
Total from page **ONE (1)**	---	69
Grand Total	---	105

☒ - 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	8.4	17.80	1.1	1.50	30.00	44/2.4	0.36	1.56	YES
Total Ammonia as Nitrogen (Winter) mg/L	8.4	14.93	2.4	1.27	60.00	44/2.4	0.31	1.31	YES
Copper, Total Recoverable (µg/L)	28.66	9.41	17.87	1.15	30	24/2.7	0.579	1.97	NO
Zinc, Total Recoverable (µg/L)	228.75	19.20	226.90	2.34	30	55/11	0.468	1.745	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:

MAP KEY NUMBER	WWTP EQUIPMENT
1	Main Office/ Laboratory
2	Influent Screening/ Grit Removal
3	Primary Clarifiers
4	Biofilter Towers
5	Aeration Tanks
6	Final Clarifiers
7	UV Disinfection
8	Flow Equalization Basins
9	Primary Sludge Tank
10	Biosolids Processing Building

APPENDIX – ALTERNATIVE:

APPENDIX – COST ANALYSIS FOR COMPLIANCE:

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

O'Fallon Wastewater Treatment Plant, Permit Renewal
City of O'Fallon
Missouri State Operating Permit #MO-0028720

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

This permit includes new monitoring requirements for Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Phosphorus, and Methylene Chloride.

Connections
The number of connections was obtained from the Department's fee tracking website.

Connection Type	Number
Residential	16,753
Commercial	1,086
Industrial	7
Total	**17,846**

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 O'Fallon	
Current Monthly User Rates per 5,000 gallons*	$45.58
Median Household Income (MHI)[1]	$86,646
Current Annual Operating Costs (excludes depreciation)	$3,923,575

*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	$288
Total Kjeldahl Nitrogen - Influent	Monthly	$33	$396
Nitrate + Nitrite - Influent	Monthly	$40	$480
Ammonia - Influent	Monthly	$20	$240
Total Phosphorus – Effluent	Monthly (previously quarterly)	$24	$192
Total Kjeldahl Nitrogen - Effluent	Monthly (previously quarterly)	$33	$264
Nitrate + Nitrite - Effluent	Monthly (previously quarterly)	$40	$320
Methylene Chloride	Quarterly	$88	$352
Total Estimated Annual Cost of New Permit Requirements			$2,532

Criterion 2B Table. Estimated Costs for New Permit Requirements		
(1)	Estimated Annual Cost	$3,936
(2)	Estimated Monthly User Cost for New Requirements [2]	$0.02
	Estimated Monthly User Cost for New Requirements as a Percent of MHI [3]	0.000%
(3)	Total Monthly User Cost*	$45.60
	Total Monthly User Cost as a Percent of MHI [4]	0.632%

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

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.

(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 $18,910,479. The community reported that each user pays $45.58 monthly, of which, $15.19 is used toward payments on the current outstanding debt.

(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 O'Fallon

No.	Administrative Unit	O'Fallon City	Missouri State	United States
1	Population (2017)	85,246	6,075,300	321,004,416
2	Percent Change in Population (2000-2017)	84.6%	8.6%	14.1%
3	2017 Median Household Income (in 2018 Dollars)	$86,646	$52,801	$59,060
4	Percent Change in Median Household Income (2000-2017)	-4.5%	-7.7%	-6.7%
5	Median Age (2017)	36.4	38.4	37.8
6	Change in Median Age in Years (2000-2017)	5.3	2.3	2.5
7	Unemployment Rate (2017)	3.4%	5.8%	6.6%
8	Percent of Population Below Poverty Level (2017)	4.3%	14.6%	14.6%
9	Percent of Household Received Food Stamps (2017)	4.1%	12.2%	12.6%
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 community currently is implementing a capital improvement plan that will upgrade many aspects of their wastewater collection and treatment system.

(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 O'Fallon to seek funding from an outside source.

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

The community reported that it has recently raised sewer rates to pay for upgrades to the facility to meet new ammonia limits that were included in their 2016 permit renewal.

The Department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score. The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri. Based on the assessment tool, the City of O'Fallon has been determined to be a category 3 community. This means that the City of O'Fallon's socioeconomic status and population is predicted to remain stable over time. Future changes in only a few of the 19 weighted factors could cause this community to experience either a rise or decline of population. If this community experiences a decline in population which results in the inability to secure the necessary funding for an upgrade to meet the new requirements within

this permit, a modification to the schedule of compliance may be necessary. The community may contact the Department and send an application for a modification to the schedule of compliance with justification for the time necessary to comply with this permit.

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

1. (A) 2017 MHI in 2017 Dollar: United States Census Bureau. 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).
2. ($3,936/17,846)/12 = $0.02 (Estimated Monthly User Cost for New Requirements)
3. ($0.02/($86,646/12))0.000% = 0.01% (New Sampling Only)
4. ($45.60/($86,646/12))100% = 0.632% (Total User Cost)
5. (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).
6. (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).
7. 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.
8. 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.
9. 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

Appendix – Pretreatment Modification Statement of Basis Letter from City

100 NORTH MAIN STREET
O'FALLON, MISSOURI 63366
636.240.2000
FASCIMILE 636.978.4144
www.ofallon.mo.us

October 20, 2021

Mr. Todd Blanc
Pretreatment Program
Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102
Electronic Submittal via Email to todd.blanc@dnr.mo.gov

RE: Submittal of CROMEER Pretreatment Program Request for the City of O'Fallon, Missouri: MO-0028720

Dear Mr. Todd Blanc:

Based on the email from EPA's Office of Information Management dated June 16, 2021 which confirmed that the City's proposed Pretreatment Reporting Program (PRP) is CROMERR-compliant, please find enclosed for your review and approval a program modification request associated with the City of O'Fallon's Pretreatment Program to the PRP. The form attached is an overview of the modifications to the program to incorporate the electronic reporting capabilities, including:

- Legal Authority Modifications
- Clarification of procedures related to implementation of the City's approved Pretreatment Program
- Pretreatment Program Organizational Duties
- Pretreatment Program Training Materials for Administrators and Industrial Users

I, Marshall Suddarth, am the Water and Wastewater Plant Superintendent for the City of O'Fallon, Missouri. I possess the authority to represent the City of O'Fallon, Missouri through this certification document. I have reviewed the City of O'Fallon, Missouri's application and supporting documentation to EPA to approve electronic reporting for Shared CROMERR Services (SCS).

I hereby certify that the City of O'Fallon, Missouri has no lawfully enacted or promulgated statutes, ordinances, or regulations that impede the implementation of the electronic reporting component of its authorized programs consistent with 40 Code of Federal Regulations § 3.2000 and with this application.

I further certify that I have verified with EPA that Missouri has the Attorney General Statement on-file for Missouri which confirms that authority to implement and enforce electronic signatures under CROMERR has been approved by EPA for Missouri as provided under the state Attorney General Certification on file with EPA.

As an official of the City of O'Fallon stating that the program modifications made herein do not affect the POTW's authority or ability to adequately to 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 the Enforcement Response Guide in the event of noncompliance by Industrial Users.

Please notify us if you require any additional information on the documented program modifications. Please contact me at 636-369-2212 for any further documentation or questions.

Sincerely,

Marshall Suddarth
Water & Wastewater Plant Superintendent
City of O'Fallon

Enclosures: CROMERR Program Modification Request and Supporting Information

100 NORTH MAIN STREET
O'FALLON, MISSOURI 63366
636.240.2000
FASCIMILE 636.978.4144
www.ofallon.mo.us

June 16, 2020

Mr. Todd Blanc
Pretreatment Program
Water Protection Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

RE: Pretreatment Program Modifications for the City of O'Fallon, Missouri: MO-0028720

Dear Mr. Blanc:

Please find enclosed for your review and approval proposed modifications to the City of O'Fallon's Pretreatment Program. These modifications include adoption of the Streamlining provisions to the City's Sewer Use Ordinance and the development of an updated Enforcement Response Plan (ERP). The following is an overview of the modifications to the program:

Pretreatment Ordinance (Article XI Industrial Wastes and Pretreatment)

The ordinance submitted for review replaces the City's current Article XI, Sections 700.440 through 700.540 with a new Article XI based on the EPA model ordinance which adopts the required streamlining rule changes. In addition, the following is an overview of the optional provisions taken from the EPA Model Pretreatment Ordinance which are included in the ordinance as part of the program update:

1. General Prohibitions. [700.445]
2. Equivalent mass and concentrations for categorical standards except the net/gross adjustment.
3. Best Management Practices [700.445.F.]
4. Additional Pretreatment Measures [700.450.B]
5. Permit Appeals [700.470.C]
6. Regulation of Waste Received from Other Jurisdictions [700.470.H]
7. Categorical waiver of pollutants not present [700.480.D]
8. Supplemental enforcement actions [700.525]
9. Pretreatment Charges and Fees [700.540]

Local Limit Evaluation

Local limits are not being updated as part of this program update. The City is in the process of upgrading their wastewater treatment plant. Once the upgrades are complete and operations have returned to normal the City intends to perform a local limit evaluation to update the local limits. This program update maintains the previously-adopted local limits.

Enforcement Response Plan (ERP)

The submittal also includes a revised Enforcement Response Plan (ERP). The updated ERP reflects the changes made to the control authority's legal authority and the resulting implications for enforcement. The plan includes an Enforcement Table that has additional violation scenarios.

The ERP document is not being approved as part of the City's ordinance; alternatively, it is being submitted as a stand-alone document with the ability to update or modify with appropriate reviews by Missouri DNR.

Additional Documentation

The following documentation related to these modifications is included below:

- As an official of the City of O'Fallon stating that the program modifications made herein do not affect the POTW's authority or ability to adequately to 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.
- Attached is also documentation of the endorsement and approval of the above modifications to the ordinance and the Enforcement Response Plan. The City Council also endorsed their continued support, supervising, and funding of the POTW program pursuant to §403.9(b)(2).

Legal Review

The Sewer Use Ordinance and Enforcement Response Plan has been reviewed by the City's legal counsel to ensure the City has adequate authority to carry out the program as required in §403.8 of the Code of Federal Regulations.
Please notify us if you require any additional information on the documented program modifications. Please contact Marshall Suddarth at 636-369-2212 for any further documentation or questions.

Sincerely,

Marshall Suddarth
Water & Wastewater Plant Superintendent
City of O'Fallon

Enclosures:
Updated Sewer Use Ordinance
Enforcement Response Plan
City Council Endorsement Documentation
Statement of Legal Authority

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

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

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. **Monitoring Requirements**.
   a. Records of monitoring information shall include:
      i. The date, exact place, and time of sampling or measurements;
      ii. The individual(s) who performed the sampling or measurements;
      iii. The date(s) analyses were performed;
      iv. The individual(s) who performed the analyses;
      v. The analytical techniques or methods used; and
      vi. The results of such analyses.
   b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. **Test Procedures**. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

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

Section B – Reporting Requirements

1. **Planned Changes.**
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1);
      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

2. **Twenty-Four Hour Reporting.**
   a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.

c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

3. **Sanitary Sewer Overflow Reporting.** The following requirements solely reflect reporting obligations, and reporting does not necessarily reflect noncompliance, which may depend on the circumstances of the incident reported.
   a. Twenty-Four Hour (24-Hour) Reporting. The permittee or owner shall report any incident in which wastewater escapes the collection system such that it reaches waters of the state or it may pose an imminent or substantial endangerment to the health or welfare of persons. Relevant information shall be provided orally or via the current electronic method approved by the Department within 24 hours from the time the permittee becomes aware of the incident. A written submission shall also be provided within five (5) business days of the time the permittee or owner becomes aware of the incident. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The five (5) day reports may be provided via the current electronic method approved by the Department.
   b. Incidents Reported via Discharge Monitoring Reports (DMRs). The permittee or owner shall report any event in which wastewater escapes the collection system, which does not enter waters of the state and is not expected to pose an imminent or substantial endangerment to the health or welfare of persons, which occur typically during wet weather events. Relevant information shall be provided with the permittee's or owner's DMRs.

4. **Anticipated Noncompliance**. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

5. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

6. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, 4, and 7 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

7. **Other Information**. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

8. **Discharge Monitoring Reports.**
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. **Definitions.**
   a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility.
   b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Bypass Requirements.**
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
   b. Notice.
      i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
      ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. Prohibition of bypass.
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

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

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.
   c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.
   d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. **Duty to Reapply.**
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. **Proper Operation and Maintenance**. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. **Permit Actions.**
   a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      iv. Any reason set forth in the Law or Regulations.
   b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. **Permit Transfer.**
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
   a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
   d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
   a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
   b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
   a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
   b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
   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.

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

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

1. Definitions

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

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

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

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

2. Identification of Industrial Discharges

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

3. Application Information

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

4. Notice to the Department

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
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 limted 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 polluntant 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.
   a. 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.
   b. Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
   c. 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 factor[1]).

[1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization 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 outstandingstate 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 mthods or technology refletive 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 included the use of methods or technology refletive 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 factor[1]).
        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization 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 ≥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 ≥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

[1] Calculate 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 AN OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

RECEIVED
MAY – 7 2019
Water Protection Program

AP32413

FOR AGENCY USE ONLY	
CHECK NUMBER	162940
DATE RECEIVED	FEE SUBMITTED
5-7-19	$200.00 SB
ET 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- 0028720 Reason: Plant Upgrade & New High Flow Outfall

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

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
O'Fallon Wastewater Treatment Plant		636-379-2212	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
150 Firma Road	O'Fallon	MO	63366

2.1 LEGAL DESCRIPTION (Facility Site): Landgrant 01687, St. Charles County — COUNTY: St. Charles

2.2 UTM Coordinates Easting (X): 703989 Northing (Y): 4307940
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Mississippi River & Peruque Creek

2.4 Number of Outfalls: 2 wastewater outfalls: 2 stormwater outfalls: instream monitoring sites: 2

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	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of O'Fallon	chorvath@ofallon.mo.us	636-379-4225	
ADDRESS	CITY	STATE	ZIP CODE
401 South Cool Springs Road	O'Fallon	MO	63366

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	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of O'Fallon	chorvath@ofallon.mo.us	636-379-4225	
ADDRESS	CITY	STATE	ZIP CODE
401 South Cool Springs Road	O'Fallon	MO	63366

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	TITLE	CERTIFICATE NUMBER (IF APPLICABLE)
Richard Stephan	WWTP Manager	A9700
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
rstephan@ofallon.mo.us	636-379-2212	

6. FACILITY CONTACT

NAME	TITLE		
Richard Stephan	WWTP Manager		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
rstephan@ofallon.mo.us	636-379-2212		
ADDRESS	CITY	STATE	ZIP CODE
150 Firma Road	O'Fallon	MO	63366

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	
O'Fallon Wastewater Treatment Plant	
PERMIT NO.	COUNTY
MO-0028720	St. Charles

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

FACILITY NAME	PERMIT NO.	OUTFALL NO.
O'Fallon Wastewater Treatment Plant	MO- 0028720	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

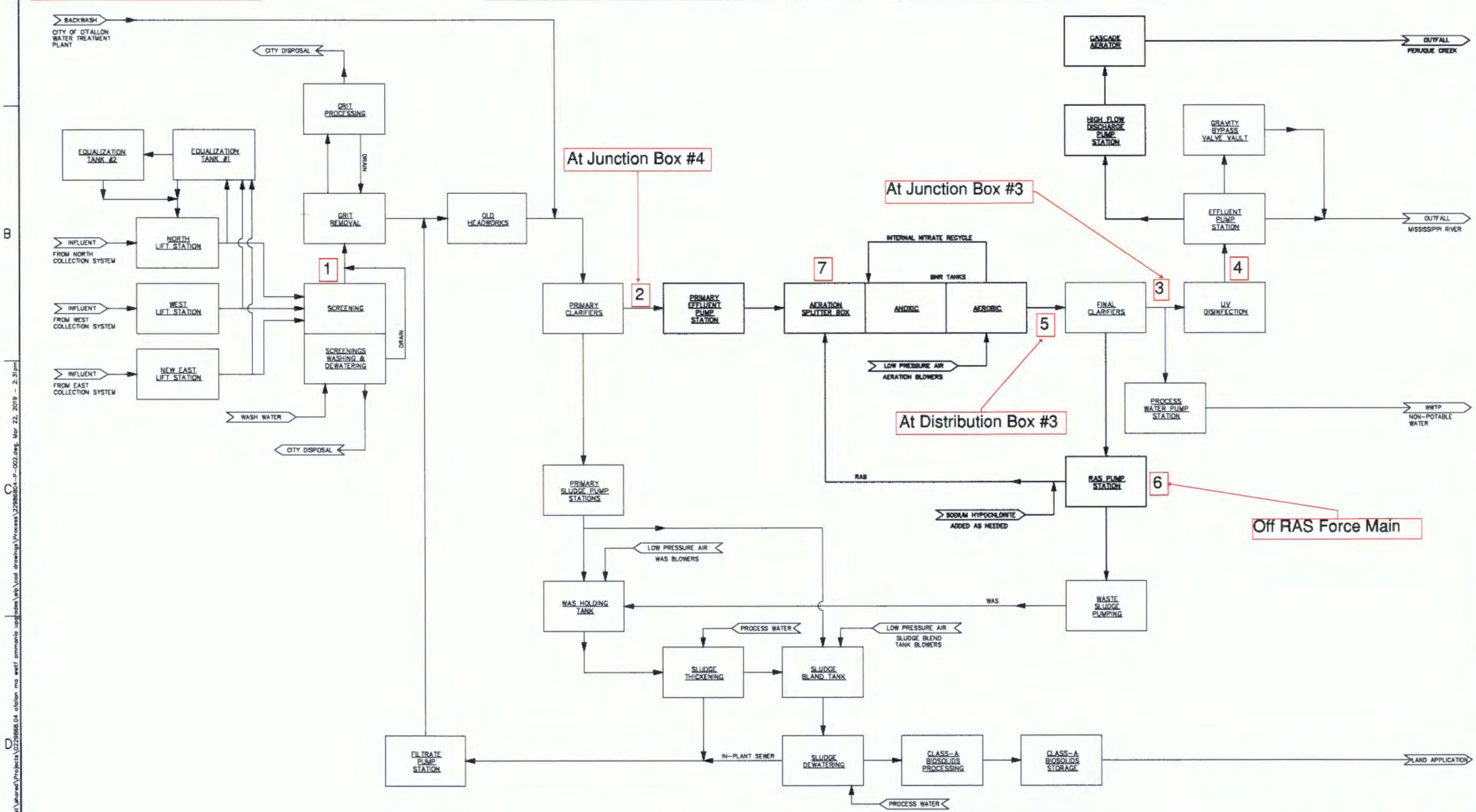
7.1 Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – Chlorination and Dechlorination), influents, and outfalls. Specify where samples are taken. Indicate any treatment process changes in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

See Attached Process Flow Diagram

1. Influent Sampling Point
2. Primary Effluent Sampling
3. Final Sampling Point
4. E. Coli Sampling Point
5. MLSS Sampling
6. RAS Sampling
7. Influent MLSS Sampling

DESIGN FLOWS AND LOADINGS

PARAMETER	FLOW	BOD_5	TSS	TKN	TOTAL P
RAW INFLUENT	AVERAGE DAY: 7.30 MGD PERMITTED ADF: 11.25 MGD MAX MONTH: 12.30 MGD MAX DAY: 16.50 MGD PEAK HOUR: 18.90 MGD	AVERAGE DAY: 15,293 #/DAY MAX MONTH: 17,750 #/DAY MAX DAY: 26,916 #/DAY	AVERAGE DAY: 20,266 #/DAY MAX MONTH: 23,188 #/DAY MAX DAY: 40,293 #/DAY	AVERAGE DAY: 3,750 #/DAY MAX MONTH: 4,100 #/DAY MAX DAY: 2,750 #/DAY	AVERAGE DAY: 656 #/DAY MAX MONTH: 718 #/DAY MAX DAY: 481 #/DAY
SEPTAGE	-------	-------	-------	-------	-------
PRIMARY EFFLUENT	AVERAGE DAY: 8.31 MDG PERMITTED ADF: 12.26 MGD MAX MONTH: 13.31 MGD MAX DAY: 17.51 MGD	AVERAGE DAY: 5,430 #/DAY PERMITTED ADF: 9,729 #/DAY MAX MONTH: 14,022 #/DAY MAX DAY: 26,903 #/DAY	AVERAGE DAY: 4,484 #/DAY PERMITTED ADF: 8,323 #/DAY MAX MONTH: 12,521 #/DAY MAX DAY: 34,334 #/DAY	AVERAGE DAY: 2,255 #/DAY PERMITTED ADF: 3,468 #/DAY MAX MONTH: 4,998 #/DAY MAX DAY: 9,589 #/DAY	AVERAGE DAY: 395 #/DAY PERMITTED ADF: 807 #/DAY MAX MONTH: 875 #/DAY MAX DAY: 1,878 #/DAY



BACKWASH
CITY OF O'FALLON WATER TREATMENT PLANT
CITY DISPOSAL
GRIT PROCESSING
DRAIN
EQUALIZATION TANK #2
EQUALIZATION TANK #1
GRIT REMOVAL
OLD HEADWORKS
At Junction Box #4
INFLUENT
FROM NORTH COLLECTION SYSTEM
NORTH LIFT STATION
1
INFLUENT
FROM WEST COLLECTION SYSTEM
WEST LIFT STATION
SCREENING
INFLUENT
FROM EAST COLLECTION SYSTEM
NEW EAST LIFT STATION
SCREENINGS WASHING & DEWATERING
WASH WATER
CITY DISPOSAL
PRIMARY CLARIFIERS
2
PRIMARY EFFLUENT PUMP STATION
7
AERATION SPLITTER BOX
INTERNAL NITRATE RECYCLE
BNR TANKS
ANOXIC
AEROBIC
5
LOW PRESSURE AIR
AERATION BLOWERS
At Distribution Box #3
At Junction Box #3
FINAL CLARIFIERS
3
UV DISINFECTION
4
EFFLUENT PUMP STATION
GRAVITY BYPASS VALVE VAULT
HIGH FLOW DISCHARGE PUMP STATION
CASCADE AERATOR
OUTFALL
PERUQUE CREEK
OUTFALL
MISSISSIPPI RIVER
PROCESS WATER PUMP STATION
WWTP
NON-POTABLE WATER
RAS
RAS PUMP STATION
6
Off RAS Force Main
SODIUM HYPOCHLORITE
ADDED AS NEEDED
PRIMARY SLUDGE PUMP STATIONS
LOW PRESSURE AIR
WAS BLOWERS
WAS HOLDING TANK
WAS
WASTE SLUDGE PUMPING
PROCESS WATER
LOW PRESSURE AIR
SLUDGE BLEND TANK BLOWERS
SLUDGE THICKENING
SLUDGE BLAND TANK
FILTRATE PUMP STATION
IN-PLANT SEWER
SLUDGE DEWATERING
CLASS-A BIOSOLIDS PROCESSING
CLASS-A BIOSOLIDS STORAGE
LAND APPLICATION
PROCESS WATER

MDNR REVIEW - NOT FOR CONSTRUCTION

WOODARD & CURRAN
1520 S Fifth Street Suite 306
St Charles, Missouri 63303
www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: RTP | CHECKED BY: RTP
DRAWN BY: MNK | 229868.04-P-002.dwg

BLOCK FLOW DIAGRAM

CITY OF O'FALLON
ST. CHARLES COUNTY, MISSOURI

O'FALLON WWTP AMMONIA & HIGH FLOW DISCHARGE UPGRADES

JOB NO.: 229868.04
DATE: MARCH 2019
SCALE: AS NOTED
SHEET: 125 OF 353

P-002

\\woodardcurran.net\shared\Projects\0229868.04 ofallon mo wwtf ammonia upgrades\wip\cad drawings\Process\229868.04-P-002.dwg, Mar 22, 2019 - 2:31pm

FACILITY NAME	PERMIT NO.	OUTFALL NO.
O'Fallon WWTP	MO- 0028720	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

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

a. The area surrounding the treatment plant, including all unit processes.
b. 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.
c. The actual point of discharge.
d. 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.
e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
f. 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.): 95,000 Design P.E. 112,500

7.5 Connections to the facility:

Number of units presently connected: 15,608

Residential: 14,793 Commericial: 810 Industrial 5

7.6 Design Flow 11.25 MGD | Actual Flow 7.3 MGD

7.7 Will discharge be continuous through the year? Yes ☑ No ☐

Discharge will occur during the following months: January - December

How many days of the week will discharge occur? Discharge 7 days a week, 12 months a year

7.8 Is industrial wastewater discharged to the facility? Yes ☑ No ☐

If yes, describe the number and types of industries that discharge to your facility. Attach sheets as necessary

Metal finishing, metal casting, quartz growing and layering

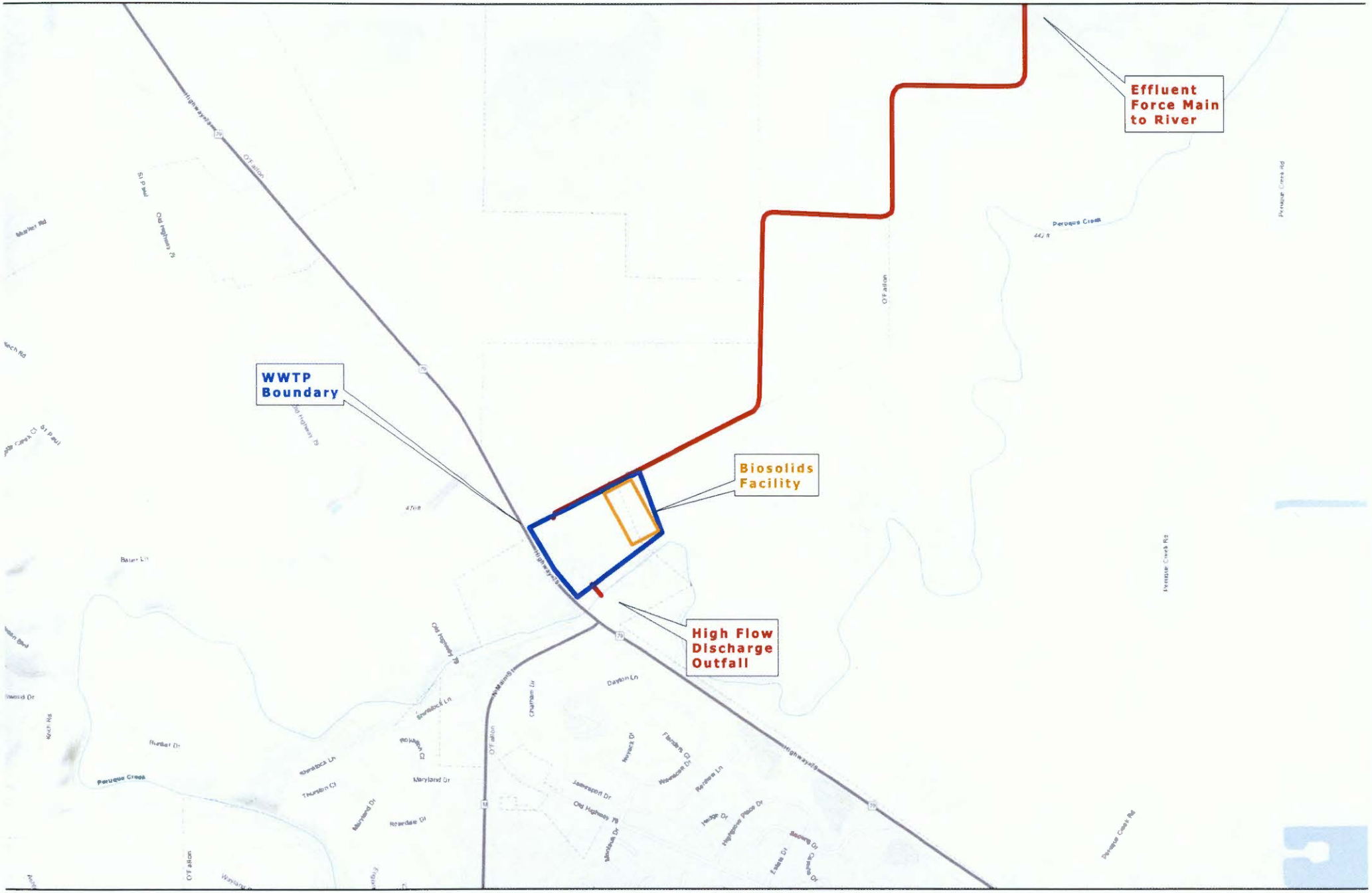
Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.

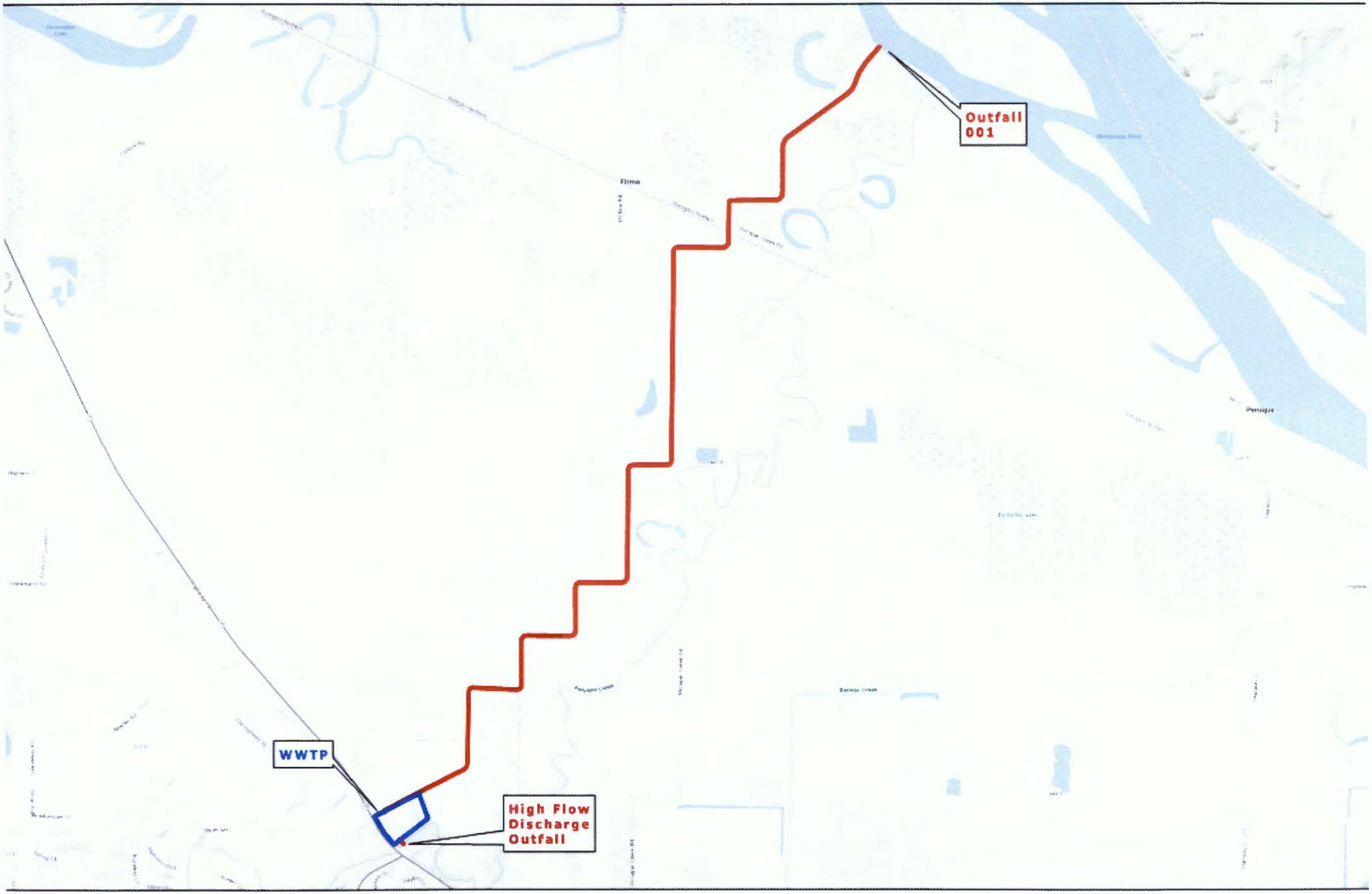
7.9	Does the facility accept or process leachate from landfills?:	Yes ☐	No ☑
7.10	Is wastewater land applied? **If yes**, please attach Form I See: https://dnr.mo.gov/forms/780-1686-f.pdf	Yes ☐	No ☑
7.11	Does the facility discharge to a losing stream or sinkhole?	Yes ☐	No ☑
7.12	Has a wasteload allocation study been completed for this facility?	Yes ☑	No ☐

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant.	Yes ☐	No ☑
Push–button or visual methods for simple test such as pH, settleable solids.	Yes ☑	No ☐
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes ☑	No ☐
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes ☑	No ☐
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes ☐	No ☑


Effluent Force Main to River
WWTP Boundary
Biosolids Facility
High Flow Discharge Outfall
Peruque Creek
Old Highway 79
Dayton Ln
Maryland Dr
Rowedale Dr
Lakeside Dr
Peruque Creek Rd


Outfall
001
WWTP
High Flow
Discharge
Outfall

FACILITY NAME	PERMIT NO.	OUTFALL NO.
O'Fallon WWTP	MO- 0028720	001

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 ☐ No ☑

9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 2,800 Actual Dry Tons/Year 2,500

9.3 Sludge storage provided: 4500 Cubic feet; 60 Days of storage; 33 Average percent solids of sludge;

☐ No sludge storage is provided. ☐ Sludge is stored in lagoon.

9.4 Type of storage:

☐ Holding Tank ☐ Building
☐ Basin ☐ Lagoon
☑ Concrete Pad ☑ Other (Describe) Roof - But Not All Enclosed

9.5 Sludge Treatment:

☐ Anaerobic Digester ☐ Storage Tank ☐ Lime Stabilization ☐ Lagoon
☑ Aerobic Digester ☐ Air or Heat Drying ☐ Composting ☑ Other (Attach Description)

9.6 Sludge use or disposal:

☑ Land Application ☑ Contract Hauler ☐ Hauled to Another Treatment Facility ☐ Solid Waste Landfill
☐ Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) ☐ Incineration
☐ Other (Attach Explanation Sheet) _____

9.7 Person responsible for hauling sludge to disposal facility:
☐ By Applicant ☑ By Others (complete below)

NAME	EMAIL ADDRESS
Oros & Busch Application Technologies	billmjr@orosandbusch.com

ADDRESS	CITY	STATE	ZIP CODE
PO Box 37	Defiance	MO	63341

CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.
Bill Miller	636-359-1575	MO-

9.8 Sludge use or disposal facility:
☐ By Applicant ☑ By Others (Complete below)

NAME	EMAIL ADDRESS
Oros & Busch Application Technologies	billmjr@orosandbusch.com

ADDRESS	CITY	STATE	ZIP CODE
PO Box 37	Defiance	MO	63341

CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.
Bill Miller	636-359-1575	MO-

9.9 Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503?
☑ Yes ☐ No (Explain)

END OF PART A

Sludge Treatment using Lime Pasteurization

The first unit the cake enters into the Lime Pasteurization System is called a Thermo-Feeder. The Thermo-Feeder preheats the sludge cake via internally heated auger shafts and externally heated troughs. The sludge cake is preheated to approximately 110 degrees Fahrenheit and then is discharged from the Thermo-Feeder into a unit called a Thermo-Blender.

The Thermo-Blender continues to heat the sludge cake utilizing internally heated auger shafts and externally heated troughs, while also blending in granular quick lime to raise the pH to 12.00 or greater the chemical reaction also increases the heat.

Next, the sludge is discharged into a Pasteurization Vessel where the sludge temperature of 162 degrees of Fahrenheit or higher is sustained for 20 minutes.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Are there any municipal satellite collection systems connected to this facility? ☑ Yes ☐ 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)
Public Water Supply District #2	636-561-3737 (Dave Jones)	751,573 FEET

10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) 220 miles

10.3 Does significant infiltration occur in the collection system? ☐ Yes ☑ No

If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

While significant infiltration does not occur, infiltration does exist in the system. The City has a proactive program to address infiltration by having an active pipeline CCTV program and manhole inspection program. Manholes are being lined annually to address infiltration and a pipe lining program is beginning in 2018 and continuing each year to address both structural pipeline issues and infiltration issues.

11. BYPASSING

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes ☐ No ☑

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 ☐ No ☑

If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)

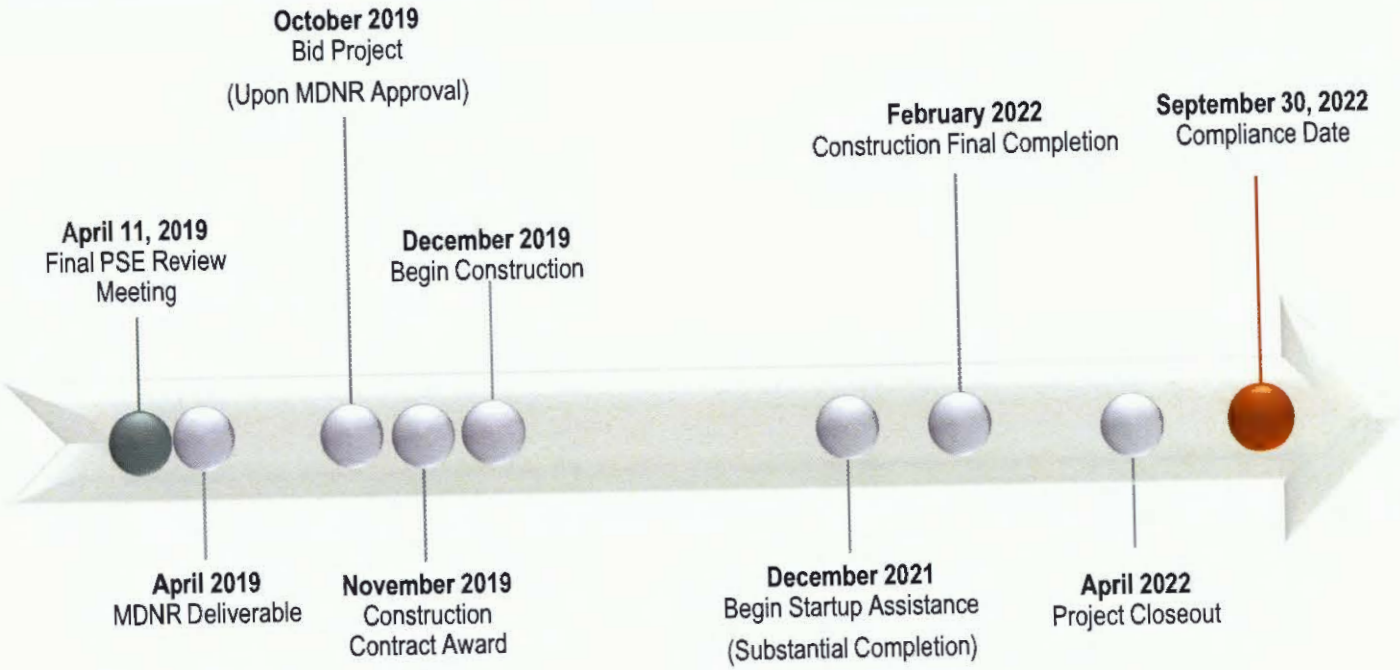
NAME	
MAILING ADDRESS	
TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
RESPONSIBILITIES OF CONTRACTOR	

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.

See attached.

Project Schedule Update



FACILITY NAME	PERMIT NO.	OUTFALL NO.
O'Fallon WWTP	MO- 0028720	001

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=2d29852e2dcdf91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	7.12	S.U.		S.U.	145
pH (Maximum)	7.87	S.U.		S.U.	145
Flow Rate	13.62	MGD	7.69	MGD	365

*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		mg/L		mg/L			
	$CBOD_5$	17.0	mg/L	8.0	mg/L	102	sm20e 5210B	
E. COLI		387	#/100 mL	183	#/100 mL	56	sm20E-9222B	
TOTAL SUSPENDED SOLIDS (TSS)		24.0	mg/L	9.8	mg/L	146	SM20E-2540D	
TOTAL PHOSPHORUS		6.1	mg/L	2.8	mg/L	12	EPA200.7R4.4	
TOTAL KJELDAHL NITROGEN			mg/L		mg/L			
NITRITES + NITRATES		<5.5	mg/L	<2.4	mg/L	12	SM20E4500NO	
AMMONIA AS N		29.0	mg/L	17.4	mg/L	101	SM20E-4500NA	
CHLORINE* (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN		8.00	mg/L	4.77	mg/L	186	SM20E5210B	
OIL and GREASE		<6.2	mg/L	<5.2	mg/L	12	EPA1664A	
OTHER: _____			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
O'Fallon WWTP	MO- 0028720	001

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.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☑ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - 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	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
Chris Horvath	Water & Sewer Senior Project Manager

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
636-379-4225

DATE SIGNED
4/26/19

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 O'Fallon WWTP	PERMIT NO. MO- 0028720	OUTFALL NO. 001

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=2d29852e2dcdf91badc043bd5fc3d4df&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.)

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											
ANTIMONY											
ARSENIC	23.0	ug/L	2.61	lbs	<15.7	ug/L	<1.01	lbs	12	EPA200. 7R4	
BERYLLIUM											
CADMIUM	<2.0	ug/L	<0.13	lbs	<2.0	ug/L	<0.13	lbs	12	EPA200.7R4	
CHROMIUM III											
CHROMIUM VI											
COPPER	11.0	ug/L	0.71	lbs	5.87	ug/L	0.38	lbs	12	EPA200.7R4	
IRON											
LEAD	<10.0	ug/l	<0.64	lbs	<10.0	ug/L	<0.64	lbs	12	EPA200.7R4	
MERCURY	<0.20	ug/L	<0.01	lbs	<0.20	ug/L	<0.01	lbs	12		
NICKEL	10.0	ug/L	0.64	lbs	<2.7	ug/L	<0.17	lbs	12	EPA200.7R4	
SELENIUM											
SILVER	2.6	ug/L	0.17	lbs	<2.1	ug/L	<0.13	lbs	12	EPA2007R4	
THALLIUM											
ZINC	26.0	ug/L	1.67	lbs	19.3	ug/L	1.24	lbs	12	EPA200.7R4	
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (as $CaCO_3$)	280	mg/L	17,958	lbs	239	mg/L	15,328	lbs	12	SM20E2340	
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	<25	ug/L	<2.84	lb	<25	ug/L	<1.60	lb	1	SM18E6202	
ACRYLONITRILE	<25	ug/L	<2.84	lb	<25	ug/L	<1.60	lb	1	SM18E6202	
BENZENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
BROMOFORM	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
CARBON TETRACHLORIDE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	

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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	<5.0	ug/L	<0.57		<5.0	ug/L	<0.32	lb	1	SM18E6202	
CHLORODIBROMO-METHANE											
CHLOROETHANE	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
2-CHLORO-ETHYLVINYL ETHER	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
CHLOROFORM	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
DICHLOROBROMO-METHANE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,1-DICHLORO-ETHANE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,2-DICHLORO-ETHANE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
TRANS-1,2-DICHLOROETHYLENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,1-DICHLORO-ETHYLENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,2-DICHLORO-PROPANE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,3-DICHLORO-PROPYLENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
ETHYLBENZENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
METHYL BROMIDE											
METHYL CHLORIDE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
METHYLENE CHLORIDE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,1,2,2-TETRA-CHLOROETHANE											
TETRACHLORO-ETHANE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
TOLUENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
1,1,1-TRICHLORO-ETHANE											
1,1,2-TRICHLORO-ETHANE	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
TRICHLOROETHYLENE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
VINYL CHLORIDE	<5.0	ug/L	<0.57	lb	<5.0	ug/L	<0.32	lb	1	SM18E6202	
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL											
2-CHLOROPHENOL	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
2,4-DICHLOROPHENOL	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
2,4-DIMETHYLPHENOL	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
2-NITROPHENOL	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	
4-NITROPHENOL	<10.0	ug/L	<1.14	lb	<10.0	ug/L	<0.64	lb	1	SM18E6202	

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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	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6202	
PHENOL	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6202	
2,4,6-TRICHLOROPHENOL	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6202	
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
ACENAPHTHYLENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
ANTHRACENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
BENZIDINE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
BENZO(A)ANTHRACENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
BENZO(A)PYRENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6202	
3,4-BENZO-FLUORANTHENE											
BENZO(GH) PHERYLENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
BENZO(K) FLUORANTHENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
BIS (2-CHLOROTHOXY) METHANE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
BIS (2-CHLOROETHYL) – ETHER											
BIS (2-CHLOROISO-PROPYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
2-CHLORONAPH-THALENE											
4-CHLORPHENYL PHENYL ETHER	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
CHRYSENE	<10	ug/L	<1.14	lbs		ug/L	<0.64	lbs	1	SM18E6410	
DI-N-BUTYL PHTHALATE	<10	ug/L	<1.14	lbs		ug/L	<0.64	lbs	1	SM18E6410	
DI-N-OCTYL PHTHALATE											
DIBENZO (A,H) ANTHRACENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
1,2-DICHLORO-BENZENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
1,3-DICHLORO-BENZENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
1,4-DICHLORO-BENZENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
3,3-DICHLORO-BENZIDINE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
DIETHYL PHTHALATE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
DIMETHYL PHTHALATE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	

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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	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
2,6-DINITRO-TOLUENE	<10	ug/L	<1.14	lbs	<10	ug/L	<0.64	lbs	1	SM18E6410	
1,2-DIPHENYL-HYDRAZINE											
FLUORANTHENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
FLUORENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
HEXACHLOROBENZENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
HEXACHLOROBUTADIENE											
HEXACHLOROCYCLO-PENTADIENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
HEXACHLOROETHANE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
INDENO (1,2,3-CD) PYRENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
ISOPHORONE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
NAPHTHALENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
NITROBENZENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
N-NITROSODI-PROPYLAMINE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
N-NITROSODI-METHYLAMINE											
N-NITROSODI-PHENYLAMINE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
PHENANTHRENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
PYRENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	
1,2,4-TRICHLOROBENZENE	<10.0	ug/L	<1.14	lbs	<10.0	ug/L	<0.64	lbs	1	SM18E6410	

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

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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 1 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	2ND Most Recent	3RD Most Recent
A. Test Information			
Test Method Number	8095282	MO-15049919	MO-1314702
Final Report Number			
Outfall Number	001	001	001
Dates Sample Collected	9/25/18	8/30/16	8/18/15
Date Test Started	9/26/18	8/31/16	8/19/15
Duration	48 hours	48 hours	48 hours
B. Toxicity Test Methods Followed			
Manual Title	EPA 600/4-90/027	EPA 600/4-90/027	EPA 600/4-90/027
Edition Number and Year of Publication	Fifth Edition	Fifth Edition	Fifth Edition
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	1 every 20 minutes	1 every 20 minutes	1 every 20 minutes
Grab	one	one	one
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection	☑	☑	☑
After Disinfection	☐	☐	☐
After Dechlorination	☐	☐	☐
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	After secondary treatment	After secondary treatment	After secondary treatment
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	☐	☐	☐
Acute Toxicity	☑	☑	☑
G. Provide the type of test performed			
Static	☑	☐	☑
Static-renewal	☐	☑	☐
Flow-through	☐	☐	☐
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	☐	☐	☐
Receiving Water	☑	☑	☑

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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	Yes	Yes	Yes
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	50%, 25%, 9%, 4.5%	72%, 36%, 18%, 9%, 4.5%	14%,7%,3.5%,1.75%,0.88%
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	yes	yes	yes
Salinity			
Temperature	yes	yes	yes
Ammonia	yes	yes	yes
Dissolved Oxygen	yes	yes	yes
L. Test Results			
Acute:			
Percent Survival in 100% Effluent		100	100
LC_{50}	0.716 g/l	1.118 g/l	1.076 g/l
95% C.I.		0.983 - 1.274 g/l	0.688 - 1.464 g/l
Control Percent Survival		100	100
Other (Describe)			
Chronic:			
NOEC			
IC_{25}			
Control Percent Survival			
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?	yes	yes	yes
Was reference toxicant test within acceptable bounds?	yes	yes	yes
What date was reference toxicant test run (MM/DD/YYYY)?	9/26/18	8/31/16	8/19/15
Other (Describe)			

Is the treatment works involved in a toxicity reduction evaluation? ☐ Yes ☑ 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

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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 3 ____

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			
AFB International Inc.			
MAILING ADDRESS	CITY	STATE	ZIP CODE
937 Lone Star Drive	O'Fallon	MO	63366

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Processing Chicken Liver

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

Principal Product(s): Pet Food Flavoring

Raw Material(s): Food grade ingredients

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.

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

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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? ☐ Yes ☑ No

22.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ 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?
☐ Yes ☑ 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?
☐ Yes ☐ No

If Yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?
☐ Continuous ☐ 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.

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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 3

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
Clean The Uniform Company

MAILING ADDRESS	CITY	STATE	ZIP CODE
210 South Cool Springs Road	O'Fallon	MO	63366

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Industrial Laundry

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

Principal Product(s): Washing clothes, towels, and rugs

Raw Material(s): Dirty laundry

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.

76,200 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.

1,200 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

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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? ☐ Yes ☑ No

22.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ 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?
☐ Yes ☑ 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?
☐ Yes ☐ No

If Yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?
☐ Continuous ☐ 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.

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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 3 ____

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			
O'Fallon Casting LLC			
MAILING ADDRESS	**CITY**	**STATE**	**ZIP CODE**
600 Cannonball Lane	O'Fallon	MO	63366

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Investment Casting

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

Principal Product(s): Non Ferrous Investment Casting

Raw Material(s): Aluminum, Copper, Sand, and Wax

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.

32,100 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.

5,500 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?

40 CFR 433 & 464

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

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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? ☐ Yes ☑ No

22.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ 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?
☐ Yes ☑ 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?
☐ Yes ☐ No

If Yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?
☐ Continuous ☐ 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.

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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 3 ____

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			
MEMC LLC			
MAILING ADDRESS PO Box 8	CITY St. Peters	STATE MO	ZIP CODE 63376

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

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

Principal Product(s): Manufacture of silicon wafers for semiconductor industry

Raw Material(s):

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.

386,099 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.

89,101 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?

Electrical and Electronic Components; Electronic Crystals

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

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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? ☐ Yes ☑ No

22.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ 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?
☐ Yes ☑ 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?
☐ Yes ☐ No

If Yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?
☐ Continuous ☐ 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

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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 3 ____

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			
True Manufacturing			
MAILING ADDRESS	CITY	STATE	ZIP CODE
301 Cannonball Lane	O'Fallon	MO	63366

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Metal Finishing and Cleaning

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

Principal Product(s): Industrial Refrigeration and equipment

Raw Material(s): Hot rolled steel

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.

33,100 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.

14,000 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?

Metal Finishing point source 433

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

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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? ☐ Yes ☑ No

22.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ 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?
☐ Yes ☑ 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?
☐ Yes ☐ No

If Yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?
☐ Continuous ☐ 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 O'Fallon WWTP	PERMIT NO. MO- 0028720	OUTFALL NO. 001

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?

☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO
☐ CSO Flow Volume ☐ 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 ☐ Actual ☐ Approximate
b. Give the Average Duration Per CSO Event Hours ☐ Actual ☐ Approximate
c. Give the Average Volume Per CSO Event Million Gallons ☐ Actual ☐ 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)

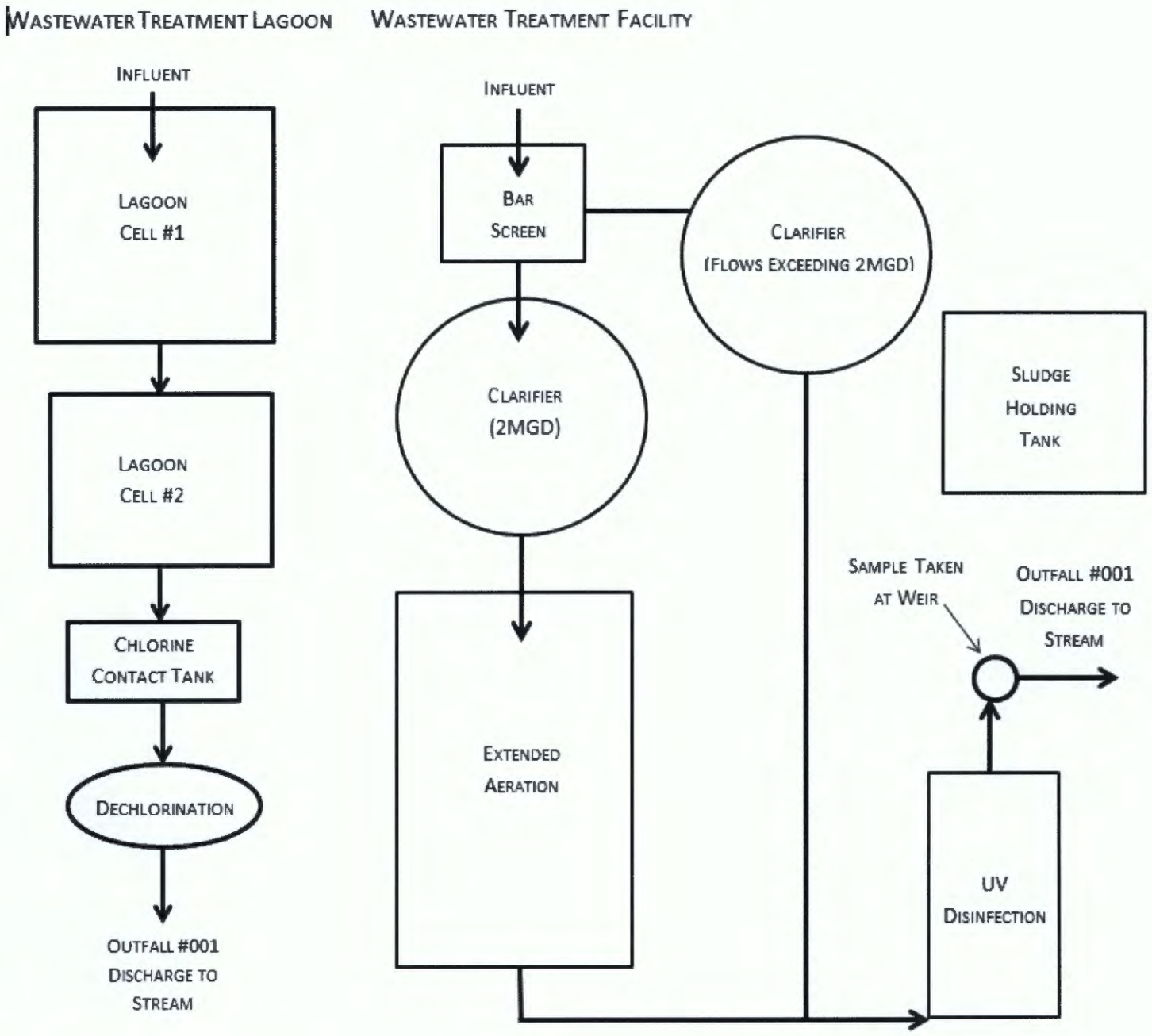
25.4 CSO Operations

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.

7.1 Process Flow Diagram Examples



7.2 A map is available on the web at https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce 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.

PART B – ADDITIONAL APPLICATION INFORMATION

10.-14. Self-explanatory