STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0025151
Owner:	Metropolitan St. Louis Sewer District
Address:	2350 Market Street, St. Louis, MO 63103
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	MSD, Lemay Wastewater Treatment Plant
Facility Address:	201 Hoffmeister Avenue, St. Louis, MO 63125
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. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

January 1, 2018
Effective Date

August 1, 2019
Modification Date

Edward B. Galbraith, Director, Division of Environmental Quality

December 31, 2022
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "A" Operator.
Two (2) coarse mechanical bar screens / four (4) grit tanks / five (5) fine screens / two (2) 2-pass tanks with coarse bubble diffusers / seven (7) primary clarifiers / eight (8) 4-pass aeration tanks / twelve (12) final clarifiers / UV disinfection / six (6) belt filter presses / three (3) multiple-hearth incinerators / three (3) ash slurry ponds / ash is landfilled.

Wet Weather Train – Two (2) grit tanks / three (3) fine screens / four (4) primary clarifiers / chlorination / dechlorination / flow is blended with fully treated effluent prior to discharge.

Design population equivalent is 2,100,000.
Design flow that can be treated through primary treatment is 350 MGD.
Design flow that can be treated through secondary treatment during the non-recreational season is 240 MGD.
Design flow that can be treated through secondary treatment during the recreational season is 210 MGD.
Design flow of the disinfection system is 350 MGD (210 MGD for UV and 140 MGD for wet-weather hypochlorite).
Actual flow is 106 MGD.
Design sludge production is 73,000 dry tons/year.

Legal Description:	Landgrant 904, St. Louis County
UTM Coordinates:	X= 738247, Y= 4267463
Receiving Stream:	Mississippi River (P)
First Classified Stream and ID:	Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.:	(07140101-0507)

Outfall #002 – Discharge from this outfall is no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii).

Outfall #003 – Stormwater

Legal Description:	Landgrant 904, St. Louis County
UTM Coordinates:	X= 738067, Y= 4268550
USGS Basin & Sub-watershed No.:	(07140101-0506)

Outfall #004 – Stormwater

Legal Description:	Landgrant 904, St. Louis County
UTM Coordinates:	X= 738101, Y= 4268449
USGS Basin & Sub-watershed No.:	(07140101-0506)

Outfall #005 – Stormwater

Legal Description:	Landgrant 904, St. Louis County
UTM Coordinates:	X= 738078, Y= 4268408
USGS Basin & Sub-watershed No.:	(07140101-0506)

Outfall #006 – Stormwater

Legal Description:	Landgrant 904, St. Louis County
UTM Coordinates:	X= 737843, Y= 4268086
USGS Basin & Sub-watershed No.:	(07140101-0507)

Combined Sewer Overflow (CSO) Locations #008-#181
See Section D. Combined Sewer System Overflow Locations following the permit for the list of CSO locations, UTM coordinates, legal descriptions, and stream information.

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 shall become effective on **January 1, 2018** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/day	24 hr. total
Carbonaceous Biochemical Oxygen Demand$_5$ (Note 1, Page 4)	mg/L		40	25	once/weekday***	composite**
(Apr 1 – Oct 31) (Nov 1 – Mar 31)	lbs/day			43,896 50,167		
Total Suspended Solids (Note 1, Page 4)	mg/L		45	30	once/weekday***	composite**
(Apr 1 – Oct 31) (Nov 1 – Mar 31)	lbs/day			52,675 60,200		
E. coli (Note 2, Page 4)	#/100mL		5,670	1,134	once/week	grab
Ammonia, Total as N	mg/L	*		*	once/month	composite**
Oil & Grease	mg/L	15		10	once/month	grab
Chlorine, Total Residual (Note 3, Page 4)	µg/L	524		261	once/weekday***	grab
Phosphorus, Total as P	mg/L	*		*	once/month	grab
Nitrogen, Total as N	mg/L	*		*	once/month	grab
Nitrate plus Nitrite, Total as N	mg/L	*		*	once/month	grab
Kjeldahl Nitrogen, Total as N	mg/L	*		*	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ****	SU	6.0		9.0	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2018.

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at regular intervals no more than 30 minutes apart by an automatic sampling device. If there is a failure of the automatic sampling device, then the composite sample may be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of 2 hours between each grab sample, until the automatic sampling device is repaired or replaced. Other alternate compositing approaches will be allowed with department approval.

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

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

OUTFALL #001	**TABLE A-2** **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 shall become effective on **January 1, 2018** 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
Cyanide, Amenable to Chlorination	µg/L	*		*	once/quarter*****	composite**
Cadmium, Total Recoverable	µg/L	*		*	once/quarter*****	composite**
Silver, Total Recoverable	µg/L	*		*	once/quarter*****	composite**

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2018.

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at regular intervals no more than 30 minutes apart by an automatic sampling device. If there is a failure of the automatic sampling device, then the composite sample may be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of 2 hours between each grab sample, until the automatic sampling device is repaired or replaced. Other alternate compositing approaches will be allowed with department approval.

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

Quarterly Minimum Sampling Requirements			
Quarter	**Months**	**Cyanide, Cadmium, and Silver**	**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

Note 1 – Additional effluent sampling from Outfall #001 shall be conducted according to the requirements of Special Condition #2.

Note 2 – 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 3 – This permit contains a Total Residual Chlorine (TRC) limit.

(a) Chlorination during the non-recreational months (November 1 through March 31) is not required. An actual analysis for TRC is not necessary when chlorination is not occurring.

(b) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**

(c) If no chlorine was used in a given sampling period, an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary. Simply report as "0 µg/L" for TRC and "NA" for DO.

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 shall become effective on **January 1, 2018** 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
Acute Whole Effluent Toxicity (Note 4)	TU_a	*			once/year	composite**
MONITORING REPORTS SHALL BE SUBMITTED DURING THE 1ST, 2ND, 3RD, AND 5TH YEARS OF THE PERMIT CYCLE; THE FIRST REPORT IS DUE JUNE 28, 2018.						
Chronic Whole Effluent Toxicity (Note 4)	TU_c	*			once/permit cycle	composite**
MONITORING REPORTS SHALL BE SUBMITTED DURING THE 4TH YEAR OF THE PERMIT CYCLE; THE FIRST REPORT IS DUE JUNE 28, 2021.						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at regular intervals no more than 30 minutes apart by an automatic sampling device. If there is a failure of the automatic sampling device, then the composite sample may be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of 2 hours between each grab sample, until the automatic sampling device is repaired or replaced. Other alternate compositing approaches will be allowed with department approval.

Note 4 – A Whole Effluent Toxicity (WET) test is to be conducted once per year: Acute WET tests are to be completed and submitted in the 1st, 2nd, 3rd, and 5th years of the permit cycle. The Chronic WET test is to be completed and submitted in the 4th year of the permit cycle. See Special Conditions #19 and #20 for additional requirements.

B. 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 March 1, 2015, and hereby incorporated as though fully set forth herein.

C. 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) Municipal Separate Storm Sewer System (MS4) Program Reports;
      (4) Pretreatment Program Reports; and
      (5) 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) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
      (5) Bypass reporting, See Special Condition #12 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 electronically submit compliance monitoring data and reports unless a waiver is granted by the department 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. Blending:
   (a) Sampling for Carbonaceous Biochemical Oxygen Demand$_5$ and Total Suspended Solids of the effluent discharged from Outfall #001 shall occur daily when:
      (1) when diverted flows from the primary clarifiers are combined with fully treated flows, or
      (2) at any time that blending occurs at the facility due to reasons not listed in this condition.

      Sampling methodologies specified in this permit apply while sampling during blending events.
   (b) If blending occurs during the month, the facility shall report to the Department via the Electronic Discharge Monitoring Report (eDMR) Submission System the days when blending occurred.

3. 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 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 Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) To incorporate an approved pretreatment program pursuant to 40 CFR 403.8(a).

4. Treatment facility outfalls must be clearly marked in the field. Stormwater outfalls shall either be marked in the field or clearly marked on a map and maintained with the Stormwater Pollution Prevention Plan.

5. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.

6. Report as no-discharge when a discharge does not occur during the report period.

C. SPECIAL CONDITIONS (continued)

7. Changes in existing pollutants or the addition of new pollutants to the treatment facility
   The permittee must provide adequate notice to the Director of the following:
   (a) 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 those pollutants; and
   (b) Any substantial change in 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.
   (c) For purposes of this paragraph, adequate notice shall include information on;
      (1) the quality and quantity of effluent introduced into the POTW, and
      (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

8. Reporting of Non-Detects:
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
   (c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
   (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
   (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
   (f) When calculating monthly averages, one-half of the method detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the "<MDL" shall be reported as indicated in item (c).

9. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

10. 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. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the Department for review and, if deemed necessary, approval.

11. The permittee has developed and is currently implementing a program for maintenance and repair of the collection system. The permittee's program is consistent with the US EPA's Guide for Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall continue to submit semi-annual and annual reports as required by the federal consent decree entered in the matter of *The United States et al. v. The Metropolitan St. Louis Sewer District, No. 4:07-CV-1120 (E.D. Mo.)* which was entered on April 27, 2012.

12. 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.b. Bypasses are to be reported to the St. Louis Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: http://dnr.mo.gov/modnrcag/ or the Environmental Emergency Response hotline 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.

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

14. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.

15. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.

C. SPECIAL CONDITIONS (continued)

16. 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.

17. An all-weather access road shall be provided to the treatment facility.

18. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

19. 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:
        - The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
        - 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 Allowable Effluent Concentration (AEC) for this facility is 2.6% with the dilution series being: 75%, 15%, 3%, 0.6%, and 0.12%.
    (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (f) 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.

20. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013; Table IA, 40 CFR Part 136).* The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
        - The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
        - The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
    (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 Allowable Effluent Concentration (AEC) for this facility is 1.7%, the dilution series is: 50%, 10%, 2%, 0.4%, and 0.08%.
    (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

C. SPECIAL CONDITIONS (continued)

21. 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 September 30th 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) within 180 days of the effective date of this permit.

22. Sewer Extension Authority Supervised Program:
The Department approved the Sewer Extension Authority Supervised Program for the St. Louis Metropolitan Sewer District (MSD) to regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility on November 15, 2017. MSD shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. This approval may be modified or revoked by the Department if the wastewater collection, transportation, or treatment facilities reach their design capacity, if the treatment facility falls into chronic noncompliance with the permit, or if the permittee fails to follow the terms and conditions of the submitted and approved program.

This permit may be reopened and modified or alternatively revoked and reissued to incorporate new or modified conditions to the Sewer Extension Authority Supervised Program, if information indicates changes are necessary to assure compliance with Missouri's Clean Water Law and associated regulations. When any of the above mentioned conditions occur, the permittee will be notified prior to any modifications of this permit condition.

An annual report on the Sewer Extension Authority Supervised Program must be submitted by January 28 of each year to the Missouri Department of Natural Resources' Water Protection Program's Engineering Section. The electronic submittals may be emailed to DNR.WPPEngineerSection@dnr.mo.gov. Detailed project information on leakage, deflection, and inspection shall be available for review upon request. The report shall contain the following for each sewer extension:
(a) Name of sewer extension;
(b) Length of sewer and force main;
(c) Capacity of each new or upgraded pump station, if applicable;
(d) Date sewer extension permit is issued;
(e) Date sewer extension construction is accepted;
(f) The ultimate receiving wastewater treatment facility; and
(g) The remaining long term average capacity of each wastewater treatment facility.

The Department's Water Protection Program, Engineering Section will reevaluate the MSD's Authority Supervised Program for reauthorization when they file an application for permit renewal to determine if it is current, complete, and meets the requirements of 10 CSR 20-8 Design Guides. Once the Sewer Extension Authority Supervised Program is reauthorized or denied, this condition will be updated accordingly.

23. Expanded Effluent Testing:
Permittee must sample and analyze for the pollutants listed in 40 CFR 122.21 Appendix J, Table 2 in addition to Iron and Aluminum. Pursuant to 40 CFR 122.21(j)(4) the permittee shall provide this data with the permit renewal application from a minimum of three samples taken within four and one-half years prior to the date of the permit application. Samples must be representative of the seasonal variation in the discharge from each POTW outfall.

C. SPECIAL CONDITIONS (continued)

24. Stormwater Pollution Prevention Plan (SWPPP): A SWPPP must be developed and implemented within 180 days of the effective date of this permit. Through implementation of the SWPPP, the permittee shalt 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 February 2009.
    (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.
        (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.

C. SPECIAL CONDITIONS (continued)

25. 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.

26. Nine Minimum Controls.
    The permittee will implement the Nine Minimum Controls as specified by the U.S. EPA Combined Sewer Overflow (CSO) Policy dated April 19, 1994, (59 FR 18688), as described in MSD's CSO Long-Term Control Plan (LTCP) Update Report (approved by the Department June 1, 2011) and subsequent approved modifications to the LTCP. MSD is required by the federal consent decree entered on April 27, 2012 in the matter of *The United States et al. v. The Metropolitan St. Louis Sewer District, No. 4:07-CF-1120 (E.D. Mo.)* to implement the approved, revised LTCP.

    Control 1 – Proper Operation and Maintenance Programs;
    Control 2 – Maximum Use of the Collection System for Storage;
    Control 3 – Review and Modification of Pretreatment Requirements;
    Control 4 – Maximization of Flow to the POTW for Treatment;
    Control 5 – Dry Weather Flows from CSOs are prohibited;
    Control 6 – Control of Solid and Floatable Materials in CSOs;
    Control 7 – Pollution Prevention;
    Control 8 – Public Notification; and
    Control 9 – Monitoring to Effectively Characterize CSO Impacts and the Efficacy of CSO Controls.

    The permittee shall continue to submit the Nine Minimum Controls Annual Report with the Annual Report required by the federal consent decree entered in the matter of *The United States et al. v. The Metropolitan St. Louis Sewer District, No. 4:07-CF-1120 (E.D. Mo.)* which was entered on April 27, 2012.

27. The permittee is authorized to discharge from the Combined Sewer Overflow (CSO) locations identified below in Section D. Combined Sewer System Overflow Locations. New outfalls may be added through a permit modification at the request of the permittee.

D. COMBINED SEWER SYSTEM OVERFLOW LOCATIONS

Outfall #008 (MSD GIS ID # GIS-1042457)
UTM Coordinates (FIPS Zone 2401): X= 885908, Y= 987210
UTM Coordinates (Zone 15): X= 737899, Y= 4269773
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #009 (MSD GIS ID # GIS-1049712)
UTM Coordinates: (FIPS Zone 2401): X= 885483, Y= 98208
UTM Coordinates (Zone 15): X= 737753, Y= 4270378
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #010 (MSD GIS ID # GIS-1049646)
UTM Coordinates: (FIPS Zone 2401): X= 885753, Y= 989716
UTM Coordinates (Zone 15): X= 737831, Y= 4270535
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #011 (MSD GIS ID # GIS-1049283)
UTM Coordinates: (FIPS Zone 2401): X= 884968, Y= 991472
UTM Coordinates (Zone 15): X= 737577, Y= 4271064
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #012 (MSD GIS ID # GIS-1048951)
UTM Coordinates: (FIPS Zone 2401): X= 883282, Y= 991841
UTM Coordinates (Zone 15): X= 737060, Y= 4271162
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #013 (MSD GIS ID # GIS-1049363)
UTM Coordinates: (FIPS Zone 2401): X= 883747, Y= 991385
UTM Coordinates (Zone 15): X= 737206, Y= 4271027
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #014 (MSD GIS ID # GIS-1048432)
UTM Coordinates: (FIPS Zone 2401): X= 882549, Y= 992544
UTM Coordinates (Zone 15): X= 736831, Y= 4271371
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #015 (MSD GIS ID # GIS-2493795)
UTM Coordinates: (FIPS Zone 2401): X= 882859, Y= 995301
UTM Coordinates (Zone 15): X= 736903, Y= 4272214
Receiving Stream: Tributary to River des Peres
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #016 (MSD GIS ID # GIS-4683362)
UTM Coordinates: (FIPS Zone 2401): X= 881873, Y= 994221
UTM Coordinates (Zone 15): X= 736611, Y= 4271876
Receiving Stream: Tributary to River des Peres
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #017 (MSD GIS ID # GIS-1048431)
UTM Coordinates: (FIPS Zone 2401): X= 882037, Y= 992719
UTM Coordinates (Zone 15): X= 736674, Y= 4271420
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #018 (MSD GIS ID # GIS-1048459)
UTM Coordinates: (FIPS Zone 2401): X= 880908, Y= 993294
UTM Coordinates (Zone 15): X= 736325, Y= 4271585
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #019 (MSD GIS ID # GIS-1048961)
UTM Coordinates: (FIPS Zone 2401): X= 879398, Y= 993592
UTM Coordinates (Zone 15): X= 735862, Y= 4271664
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #020 (MSD GIS ID # GIS-1049271)
UTM Coordinates: (FIPS Zone 2401): X= 879416, Y= 993397
UTM Coordinates (Zone 15): X= 735869, Y= 4271605
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #021 (MSD GIS ID # GIS-1048963)
UTM Coordinates: (FIPS Zone 2401): X= 878876, Y= 994084
UTM Coordinates (Zone 15): X= 735699, Y= 4271809
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #022 (MSD GIS ID # GIS-1048962)
UTM Coordinates: (FIPS Zone 2401): X= 878469, Y= 994493
UTM Coordinates (Zone 15): X= 735571, Y= 4271931
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #023 (MSD GIS ID # GIS-1047225)
UTM Coordinates: (FIPS Zone 2401): X= 875967, Y= 997288
UTM Coordinates (Zone 15): X= 734786, Y= 4272762
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #024 (MSD GIS ID # GIS-1047362)
UTM Coordinates: (FIPS Zone 2401): X= 874232, Y= 999717
UTM Coordinates (Zone 15): X= 734237, Y= 4273488
Receiving Stream: Tributary to River des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #025 (MSD GIS ID # GIS-1047224)
UTM Coordinates: (FIPS Zone 2401): X= 874718, Y= 999644
UTM Coordinates (Zone 15): X= 734385, Y= 4273470
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #026 (MSD GIS ID # GIS-1046331)
UTM Coordinates: (FIPS Zone 2401): X= 874042, Y= 1001729
UTM Coordinates (Zone 15): X= 734162, Y= 4274099
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #027 (MSD GIS ID # GIS-1051441)
UTM Coordinates: (FIPS Zone 2401): X= 874279, Y= 1001604
UTM Coordinates (Zone 15): X= 734235, Y= 4274063
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #028 (MSD GIS ID # GIS-1046330)
UTM Coordinates: (FIPS Zone 2401): X= 873415, Y= 1003079
UTM Coordinates (Zone 15): X= 733960, Y= 4274506
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #029 (MSD GIS ID # GIS-1052617)
UTM Coordinates: (FIPS Zone 2401): X= 872502, Y= 1004374
UTM Coordinates (Zone 15): X= 7336771, Y= 4274893
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #030 (MSD GIS ID # GIS-1046555)
UTM Coordinates: (FIPS Zone 2401): X= 872184, Y= 1006402
UTM Coordinates (Zone 15): X= 733557, Y= 4275508
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #031 (MSD GIS ID # GIS-1046545)
UTM Coordinates: (FIPS Zone 2401): X= 872879, Y= 1007091
UTM Coordinates (Zone 15): X= 733763, Y= 4275724
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #032 (MSD GIS ID # GIS-4684569)
UTM Coordinates: (FIPS Zone 2401): X= 871948, Y= 1006350
UTM Coordinates (Zone 15): X= 733485, Y= 4275491
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #036 (MSD GIS ID # GIS-4684520)
UTM Coordinates: (FIPS Zone 2401): X= 873446, Y= 1009456
UTM Coordinates (Zone 15): X= 733916, Y= 4276450
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #037 (MSD GIS ID # GIS-1052069)
UTM Coordinates: (FIPS Zone 2401): X= 874404, Y= 1010052
UTM Coordinates (Zone 15): X= 734203, Y= 4276639
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #039 (MSD GIS ID # GIS-1045228)
UTM Coordinates: (FIPS Zone 2401): X= 874841, Y= 1010633
UTM Coordinates (Zone 15): X= 734332, Y= 4276820
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #041 (MSD GIS ID # GIS-2492574)
UTM Coordinates: (FIPS Zone 2401): X= 874444, Y= 1010191
UTM Coordinates (Zone 15): X= 734214, Y= 4276682
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #042 (MSD GIS ID # GIS-1052105)
UTM Coordinates: (FIPS Zone 2401): X= 875053, Y= 1010923
UTM Coordinates (Zone 15): X= 734394, Y= 4276910
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #043 (MSD GIS ID # GIS-1053052)
UTM Coordinates: (FIPS Zone 2401): X= 875045, Y= 1011030
UTM Coordinates (Zone 15): X= 734391, Y= 4276943
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #044 (MSD GIS ID # GIS-4684570)
UTM Coordinates: (FIPS Zone 2401): X= 876287, Y= 1012222
UTM Coordinates (Zone 15): X= 734759, Y= 4277316
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #048 (MSD GIS ID # GIS-1046403)
UTM Coordinates: (FIPS Zone 2401): X= 877655, Y= 1013494
UTM Coordinates (Zone 15): X= 735166, Y= 4277715
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #050 (MSD GIS ID # GIS-1043600)
UTM Coordinates: (FIPS Zone 2401): X= 878429, Y= 1014428
UTM Coordinates (Zone 15): X= 735394, Y= 4278006
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #052 (MSD GIS ID # GIS-4683976)
UTM Coordinates: (FIPS Zone 2401): X= 879619, Y= 1015196
UTM Coordinates (Zone 15): X= 735750, Y= 4278250
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #053 (MSD GIS ID # GIS-4684480)
UTM Coordinates: (FIPS Zone 2401): X= 880151, Y= 1015230
UTM Coordinates (Zone 15): X= 735912, Y= 4278265
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #054 (MSD GIS ID # GIS-4684002)
UTM Coordinates: (FIPS Zone 2401): X= 880999, Y= 1015076
UTM Coordinates (Zone 15): X= 736172, Y= 4278225
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #057 (MSD GIS ID # GIS-1045464)
UTM Coordinates: (FIPS Zone 2401): X= 882907, Y= 1015421
UTM Coordinates (Zone 15): X= 736750, Y= 4278346
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #058 (MSD GIS ID # GIS-1045465)
UTM Coordinates: (FIPS Zone 2401): X= 882923, Y= 1015357
UTM Coordinates (Zone 15): X= 736756, Y= 4278327
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #061 (MSD GIS ID # GIS-1052846)
UTM Coordinates: (FIPS Zone 2401): X= 884247, Y= 1015416
UTM Coordinates (Zone 15): X= 737159, Y= 4278356
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #063 (MSD GIS ID # GIS-2413967)
UTM Coordinates: (FIPS Zone 2401): X= 885374, Y= 1015517
UTM Coordinates (Zone 15): X= 737502, Y= 4278396
Receiving Stream: River des Peres (P)
First Classified Stream and ID: River des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #064 (MSD GIS ID # GIS-4683557)
UTM Coordinates: (FIPS Zone 2401): X= 875509, Y= 1030454
UTM Coordinates (Zone 15): X= 734371, Y= 4282867
Receiving Stream: Tributary to River des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #066 (MSD GIS ID # GIS-2506382)
UTM Coordinates: (FIPS Zone 2401): X= 875394, Y= 1031572
UTM Coordinates (Zone 15): X= 734326, Y= 4283207
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #067 (MSD GIS ID # GIS-2496192)
UTM Coordinates: (FIPS Zone 2401): X= 875408, Y= 1031780
UTM Coordinates (Zone 15): X= 734329, Y= 4283270
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #068 (MSD GIS ID # GIS-2496485)
UTM Coordinates: (FIPS Zone 2401): X= 875432, Y= 1031806
UTM Coordinates (Zone 15): X= 734336, Y= 4283278
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #069 (MSD GIS ID # GIS-4683755)
UTM Coordinates: (FIPS Zone 2401): X= 875107, Y= 1032311
UTM Coordinates (Zone 15): X= 734232, Y= 4283429
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #070 (MSD GIS ID # GIS-4683754)
UTM Coordinates: (FIPS Zone 2401): X= 875012, Y= 1032488
UTM Coordinates (Zone 15): X= 734202, Y= 4283483
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #071 (MSD GIS ID # GIS-1038736)
UTM Coordinates: (FIPS Zone 2401): X= 874500, Y= 1033163
UTM Coordinates (Zone 15): X= 734040, Y= 4283684
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #072 (MSD GIS ID # GIS-1051342)
UTM Coordinates: (FIPS Zone 2401): X= 874502, Y= 1033183
UTM Coordinates (Zone 15): X= 734041, Y= 4283690
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #073 (MSD GIS ID # GIS-4683394)
UTM Coordinates: (FIPS Zone 2401): X= 873955, Y= 1033278
UTM Coordinates (Zone 15): X= 733873, Y= 4283715
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #074 (MSD GIS ID # GIS-4683816)
UTM Coordinates: (FIPS Zone 2401): X= 874386, Y= 1033193
UTM Coordinates (Zone 15): X= 734005, Y= 4283692
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #075 (MSD GIS ID # GIS-4683529)
UTM Coordinates: (FIPS Zone 2401): X= 873860, Y= 1033565
UTM Coordinates (Zone 15): X= 733842, Y= 4283801
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #076 (MSD GIS ID # GIS-4683657)
UTM Coordinates: (FIPS Zone 2401): X= 876810, Y= 1033816
UTM Coordinates (Zone 15): X= 733825, Y= 4283877
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #077 (MSD GIS ID # GIS-1935078)
UTM Coordinates: (FIPS Zone 2401): X= 873133, Y= 1035124
UTM Coordinates (Zone 15): X= 733608, Y= 4284270
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #078 (MSD GIS ID # GIS-1038740)
UTM Coordinates: (FIPS Zone 2401): X= 874143, Y= 1029929
UTM Coordinates (Zone 15): X= 733959, Y= 4282695
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #079 (MSD GIS ID # GIS-4683540)
UTM Coordinates: (FIPS Zone 2401): X= 872943, Y= 1030095
UTM Coordinates (Zone 15): X= 733591, Y= 4282736
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #080 (MSD GIS ID # GIS-2385112)
UTM Coordinates: (FIPS Zone 2401): X= 873113, Y= 1030049
UTM Coordinates (Zone 15): X= 733644, Y= 4282723
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #081 (MSD GIS ID # GIS-1935157)
UTM Coordinates: (FIPS Zone 2401): X= 872812, Y= 1030075
UTM Coordinates (Zone 15): X= 733552, Y= 4282729
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #082 (MSD GIS ID # GIS-4683543)
UTM Coordinates: (FIPS Zone 2401): X= 872860, Y= 1030112
UTM Coordinates (Zone 15): X= 733566, Y= 4282740
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #083 (MSD GIS ID # GIS-4683528)
UTM Coordinates: (FIPS Zone 2401): X= 870610, Y= 1032125
UTM Coordinates (Zone 15): X= 732863, Y= 4283335
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #084 (MSD GIS ID # GIS-4683656)
UTM Coordinates: (FIPS Zone 2401): X= 871258, Y= 1030522
UTM Coordinates (Zone 15): X= 733074, Y= 4282852
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #085 (MSD GIS ID # GIS-1043761)
UTM Coordinates: (FIPS Zone 2401): X= 870554, Y= 1032196
UTM Coordinates (Zone 15): X= 732846, Y= 4283356
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #086 (MSD GIS ID # GIS-4683508)
UTM Coordinates: (FIPS Zone 2401): X= 870128, Y= 1033171
UTM Coordinates (Zone 15): X= 732708, Y= 4283650
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #087 (MSD GIS ID # GIS-1934743)
UTM Coordinates: (FIPS Zone 2401): X= 870564, Y= 1032144
UTM Coordinates (Zone 15): X= 732849, Y= 4283341
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #088 (MSD GIS ID # GIS-1934744)
UTM Coordinates: (FIPS Zone 2401): X= 868715, Y= 1031501
UTM Coordinates (Zone 15): X= 732291, Y= 4283129
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #089 (MSD GIS ID # GIS-4683553)
UTM Coordinates: (FIPS Zone 2401): X= 867892, Y= 1031560
UTM Coordinates (Zone 15): X= 732040, Y= 4283141
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #090 (MSD GIS ID # GIS-1053870)
UTM Coordinates: (FIPS Zone 2401): X= 866795, Y= 1030253
UTM Coordinates (Zone 15): X= 731716, Y= 4282733
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #091 (MSD GIS ID # GIS-1051371)
UTM Coordinates: (FIPS Zone 2401): X= 866795, Y= 1030260
UTM Coordinates (Zone 15): X= 731716, Y= 4282735
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #092 (MSD GIS ID # GIS-4684188)
UTM Coordinates: (FIPS Zone 2401): X= 866796, Y= 1030273
UTM Coordinates (Zone 15): X= 731716, Y= 4282739
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #093 (MSD GIS ID # GIS-4684484)
UTM Coordinates: (FIPS Zone 2401): X= 867047, Y= 1031690
UTM Coordinates (Zone 15): X= 731781, Y= 4283173
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #094 (MSD GIS ID # GIS-4683550)
UTM Coordinates: (FIPS Zone 2401): X= 866738, Y= 1031729
UTM Coordinates (Zone 15): X= 731687, Y= 4283183
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #095 (MSD GIS ID # GIS-4684485)
UTM Coordinates: (FIPS Zone 2401): X= 866450, Y= 1031894
UTM Coordinates (Zone 15): X= 731598, Y= 4283230
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #096 (MSD GIS ID # GIS-2492694)
UTM Coordinates: (FIPS Zone 2401): X= 866197, Y= 1032367
UTM Coordinates (Zone 15): X= 731516, Y= 4283372
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #099 (MSD GIS ID # GIS-1051372)
UTM Coordinates: (FIPS Zone 2401): X= 865281, Y= 1034043
UTM Coordinates (Zone 15): X= 731223, Y= 4283875
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #101 (MSD GIS ID # GIS-1850951)
UTM Coordinates: (FIPS Zone 2401): X= 865054, Y= 1036833
UTM Coordinates (Zone 15): X= 731131, Y= 4284724
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #102 (MSD GIS ID # GIS-1043378)
UTM Coordinates: (FIPS Zone 2401): X= 860344, Y= 1033878
UTM Coordinates (Zone 15): X= 729720, Y= 4283784
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #103 (MSD GIS ID # GIS-1046544)
UTM Coordinates: (FIPS Zone 2401): X= 872567, Y= 1007696
UTM Coordinates (Zone 15): X= 733663, Y= 4275906
Receiving Stream: Deer Creek (P)
First Classified Stream and ID: Deer Creek (P) (3826)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #104 (MSD GIS ID # GIS-4684352)
UTM Coordinates: (FIPS Zone 2401): X= 870109, Y= 1007633
UTM Coordinates (Zone 15): X= 732914, Y= 4275866
Receiving Stream: Deer Creek (P)
First Classified Stream and ID: Deer Creek (P) (3826)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #105 (MSD GIS ID # GIS-2434611)
UTM Coordinates: (FIPS Zone 2401): X= 868271, Y= 1008587
UTM Coordinates (Zone 15): X= 732346, Y= 4276142
Receiving Stream: Deer Creek (P)
First Classified Stream and ID: Deer Creek (P) (3826)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #106 (MSD GIS ID # GIS-6636481)
UTM Coordinates: (FIPS Zone 2401): X= 864223, Y= 1011443
UTM Coordinates (Zone 15): X= 731089, Y= 4276979
Receiving Stream: Tributary to Deer Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #111 (MSD GIS ID # GIS-6635631)
UTM Coordinates: (FIPS Zone 2401): X= 864254, Y= 1018332
UTM Coordinates (Zone 15): X= 731041, Y= 4279079
Receiving Stream: Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #117 (MSD GIS ID # GIS-4684038)
UTM Coordinates: (FIPS Zone 2401): X= 867710, Y= 1011892
UTM Coordinates (Zone 15): X= 732148, Y= 4277144
Receiving Stream: Black Creek (P)
First Classified Stream and ID: Black Creek (P) (3825)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #118 (MSD GIS ID # GIS-4683974)
UTM Coordinates: (FIPS Zone 2401): X= 868683, Y= 1013423
UTM Coordinates (Zone 15): X= 732432, Y= 4277619
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #119 (MSD GIS ID # GIS-4684398)
UTM Coordinates: (FIPS Zone 2401): X= 868841, Y= 1013664
UTM Coordinates (Zone 15): X= 732478, Y= 4277694
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #120 (MSD GIS ID # GIS-2394376)
UTM Coordinates: (FIPS Zone 2401): X= 869359, Y= 1014787
UTM Coordinates (Zone 15): X= 732626, Y= 4278041
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #121 (MSD GIS ID # GIS-6632930)
UTM Coordinates: (FIPS Zone 2401): X= 869368, Y= 1014740
UTM Coordinates (Zone 15): X= 732629, Y= 4278026
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #122 (MSD GIS ID # GIS-6631352)
UTM Coordinates: (FIPS Zone 2401): X= 869727, Y= 1015647
UTM Coordinates (Zone 15): X= 732731, Y= 4278306
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #123 (MSD GIS ID # GIS-1038733)
UTM Coordinates: (FIPS Zone 2401): X= 869937, Y= 1016001
UTM Coordinates (Zone 15): X= 732792, Y= 4278415
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #124 (MSD GIS ID # GIS-2440606)
UTM Coordinates: (FIPS Zone 2401): X= 870449, Y= 1016485
UTM Coordinates (Zone 15): X= 732944, Y= 4278567
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #125 (MSD GIS ID # GIS-1805242)
UTM Coordinates: (FIPS Zone 2401): X= 870493, Y= 1016805
UTM Coordinates (Zone 15): X= 732955, Y= 4279665
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #126 (MSD GIS ID # GIS-1963520)
UTM Coordinates: (FIPS Zone 2401): X= 870495, Y= 1017452
UTM Coordinates (Zone 15): X= 732950, Y= 4278862
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #127 (MSD GIS ID # GIS-1963519)
UTM Coordinates: (FIPS Zone 2401): X= 870475, Y= 1017453
UTM Coordinates (Zone 15): X= 732944, Y= 4278862
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #128 (MSD GIS ID # GIS-4683957)
UTM Coordinates: (FIPS Zone 2401): X= 871026, Y= 1019499
UTM Coordinates (Zone 15): X= 733095, Y= 4279490
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #130 (MSD GIS ID # GIS-1044173)
UTM Coordinates: (FIPS Zone 2401): X= 871160, Y= 1020068
UTM Coordinates (Zone 15): X= 733131, Y= 4279665
Receiving Stream: Tributary to Black Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #131 (MSD GIS ID # GIS-6826225)
UTM Coordinates: (FIPS Zone 2401): X= 868854, Y= 1016311
UTM Coordinates (Zone 15): X= 732460, Y= 4278501
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #134 (MSD GIS ID # GIS-7153213)
UTM Coordinates: (FIPS Zone 2401): X= 867949, Y= 1018299
UTM Coordinates (Zone 15): X= 732167, Y= 4279099
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #136 (MSD GIS ID # GIS-1044628)
UTM Coordinates: (FIPS Zone 2401): X= 868211, Y= 1020059
UTM Coordinates (Zone 15): X= 732233, Y= 4279638
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #137 (MSD GIS ID # GIS-2416052)
UTM Coordinates: (FIPS Zone 2401): X= 867909, Y= 1018941
UTM Coordinates (Zone 15): X= 732150, Y= 4279295
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #138 (MSD GIS ID # GIS-2505356)
UTM Coordinates: (FIPS Zone 2401): X= 867980, Y= 1019328
UTM Coordinates (Zone 15): X= 732168, Y= 4279413
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #139 (MSD GIS ID # GIS-6628916)
UTM Coordinates: (FIPS Zone 2401): X= 868201, Y= 1020468
UTM Coordinates (Zone 15): X= 732226, Y= 4279762
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #140 (MSD GIS ID # GIS-4683616)
UTM Coordinates: (FIPS Zone 2401): X= 868194, Y= 1020464
UTM Coordinates (Zone 15): X= 732224, Y= 4279761
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #142 (MSD GIS ID # GIS-4684251)
UTM Coordinates: (FIPS Zone 2401): X= 893603, Y= 992109
UTM Coordinates (Zone 15): X= 740204, Y= 4271330
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #143 (MSD GIS ID # GIS-6999759)
UTM Coordinates: (FIPS Zone 2401): X= 891685, Y= 989134
UTM Coordinates (Zone 15): X= 739644, Y= 4270407
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #144 (MSD GIS ID # GIS-1051349)
UTM Coordinates: (FIPS Zone 2401): X= 890978, Y= 987899
UTM Coordinates (Zone 15): X= 739439, Y= 4270025
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #147 (MSD GIS ID # GIS-4684154)
UTM Coordinates: (FIPS Zone 2401): X= 889158, Y= 983795
UTM Coordinates (Zone 15): X= 738918, Y= 4268759
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #149 (MSD GIS ID # GIS-6901000)
UTM Coordinates: (FIPS Zone 2401): X= 885544, Y= 974557
UTM Coordinates (Zone 15): X= 737893, Y= 4265913
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #151 (MSD GIS ID # GIS-1618348)
UTM Coordinates: (FIPS Zone 2401): X= 884627, Y= 972325
UTM Coordinates (Zone 15): X= 737632, Y= 4265225
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #152 (MSD GIS ID # GIS-4684177)
UTM Coordinates: (FIPS Zone 2401): X= 884386, Y= 971295
UTM Coordinates (Zone 15): X= 737567, Y= 4264909
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #153 (MSD GIS ID # GIS-4684607)
UTM Coordinates: (FIPS Zone 2401): X= 884111, Y= 970066
UTM Coordinates (Zone 15): X= 737494, Y= 4264532
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #154 (MSD GIS ID # GIS-1050508)
UTM Coordinates: (FIPS Zone 2401): X= 883704, Y= 968054
UTM Coordinates (Zone 15): X= 737386, Y= 4263916
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #161 (MSD GIS ID # GIS-1963167)
UTM Coordinates: (FIPS Zone 2401): X= 859222, Y= 1012070
UTM Coordinates (Zone 15): X= 729559, Y= 4277128
Receiving Stream: Deer Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #166 (MSD GIS ID # GIS-6942005)
UTM Coordinates: (FIPS Zone 2401): X= 870776, Y= 1007284
UTM Coordinates (Zone 15): X= 733120, Y= 4275766
Receiving Stream: Tributary to Deer Creek
First Classified Stream and ID: Deer Creek (P) (3826)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #167 (MSD GIS ID # GIS-4683551)
UTM Coordinates: (FIPS Zone 2401): X= 878240, Y= 1033664
UTM Coordinates (Zone 15): X= 735176, Y= 4283868
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #170 (MSD GIS ID # GIS-2504886)
UTM Coordinates: (FIPS Zone 2401): X= 886109, Y= 986557
UTM Coordinates (Zone 15): X= 737966, Y= 4269575
Receiving Stream: River Des Peres (P)
First Classified Stream and ID: River Des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #173 (MSD GIS ID # GIS-2504215)
UTM Coordinates: (FIPS Zone 2401): X= 871894, Y= 1005912
UTM Coordinates (Zone 15): X= 733473, Y= 4275357
Receiving Stream: River Des Peres (P)
First Classified Stream and ID: River Des Peres (P) (1710)
USGS Basin & Sub-watershed No.: (07140101-0506)

Outfall #176 (MSD GIS ID # GIS-2425978)
UTM Coordinates: (FIPS Zone 2401): X= 868225, Y= 1012543
UTM Coordinates (Zone 15): X= 732299, Y= 4277347
Receiving Stream: Tributary to Black Creek (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0504)

Outfall #178 (MSD GIS ID # GIS-2507980)
UTM Coordinates: (FIPS Zone 2401): X= 873094, Y= 1035460
UTM Coordinates (Zone 15): X= 733593, Y= 4284373
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #179 (MSD GIS ID # GIS-1053534)
UTM Coordinates: (FIPS Zone 2401): X= 894454, Y= 993242
UTM Coordinates (Zone 15): X= 740454, Y= 4271682
Receiving Stream: Mississippi River (P)
First Classified Stream and ID: Mississippi River (P) (1707.02)
USGS Basin & Sub-watershed No.: (07140101-0507)

Outfall #180 (MSD GIS ID # GIS-4683674)
UTM Coordinates: (FIPS Zone 2401): X= 873674, Y= 1029962
UTM Coordinates (Zone 15): X= 733815, Y= 4282702
Receiving Stream: Tributary to River Des Peres (C)
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07140101-0403)

Outfall #181 (MSD GIS ID # GIS-1901734)
UTM Coordinates: (FIPS Zone 2401): X= 879874, Y= 992472
UTM Coordinates (Zone 15): X= 736016, Y= 4271326
Receiving Stream: Tributary to River Des Peres
First Classified Stream and ID: River Des Peres (P) (3827)
USGS Basin & Sub-watershed No.: (07140101-0506)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
FOR THE PURPOSE OF MODIFICATION
MO-0025151
MSD, LEMAY WASTEWATER TREATMENT PLANT

This Statement of Basis (Statement) gives pertinent information regarding modification(s) to the above listed operating permit. A Statement is not an enforceable part of a Missouri State Operating Permit.

Part I – Facility Information

Facility Type: POTW
Facility SIC Code: 4952

Facility Description:
Two (2) coarse mechanical bar screens / four (4) grit tanks / five (5) fine screens / two (2) 2-pass tanks with coarse bubble diffusers / seven (7) primary clarifiers / eight (8) 4-pass aeration tanks / twelve (12) final clarifiers / UV disinfection / six (6) belt filter presses / three (3) multiple-hearth incinerators / three (3) ash slurry ponds / ash is landfilled.

Wet Weather Train – Two (2) grit tanks / three (3) fine screens / four (4) primary clarifiers / chlorination / dechlorination / flow is blended with fully treated effluent prior to discharge.

The design flow of 210 MGD during the recreational season and 240 MGD during the non-recreational season has been incorporated into this permit as the design flow per the Lemay Wastewater Treatment Plant Stress Test Report which lists this flow as the maximum treatable flow rate for the secondary system followed by UV disinfection. A flow of 210 MGD has been used for water quality based effluent limit calculations.

Part II – Modification Rationale

This operating permit is hereby modified to derive new Weekly Average *E. coli* limits in accordance with the methods outlined in 10 CSR 20-7.015(9)(B)1.E., which became effective on March 1, 2019.

No other changes were made at this time.

Part III – 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.

- ***E. coli***. The previous permit for this facility included *E. coli* effluent limitations that were reflective of secondary contact recreation, 1,134 #/100 mL as a Weekly Geometric Mean and 1,134 #/100 mL as a Monthly Geometric Mean. Per 10 CSR 20-7.015(9)(B)1.E., "short-term [*E. coli*] effluent limitations for discharges…designated for secondary contact recreation shall be derived by multiplying the monthly geometric mean [1,134 #/100 mL]…by a factor of five". As a result, this permit includes the following *E. coli* effluent limitations: 5,670 #/100 mL as a Weekly Geometric Mean and 1,134 #/100 mL as a Monthly Geometric Mean. These effluent limitations are still protective of the instream water quality standard for *E. coli*.

Part IV – 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 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 May 17, 2019 to June 17, 2019. No comments received.

DATE OF FACT SHEET: APRIL 24, 2019

COMPLETED BY:

ASHLEY KEELY, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 751-7326
ASHLEY.KEELY@DNR.MO.GOV

Missouri Department of Natural Resources
Factsheet Addendum
For Pretreatment Program Modification
#MO-0025151
Metropolitan St. Louis Sewer District

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 Metropolitan St. Louis Sewer District (MSD) 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 –Pretreatment Program Modification

The pretreatment program modification:

The MSD's ordinance No. 12559 was revised to implement a recommendation that was made in the May 14, 2018, report of the Department's February 14, 2018, inspection of MSD's pretreatment program. In the inspection report, the Department highly recommended that MSD modify its ordinance to clearly identify the Control Authority's legal authority by November 12, 2018. MSD should consider incorporation of the definition of significant industrial user, as found in 40 CR 403.3(v), into ordinance to clearly identify criteria.

MSD modified its ordinance to add the definition of significant industrial user or SIU and non-significant industrial user or NSCIU and the annual certification statement for the NSCIU.

☒ - The Department is not required public notice this program modification.

This is a non-substantial modification of the district'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 Metropolitan St. Louis Sewer District 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: 09/25/2018

Completed by:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0025151
MSD, LEMAY 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.

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description:
Two (2) coarse mechanical bar screens / four (4) grit tanks / five (5) fine screens / two (2) 2-pass tanks with coarse bubble diffusers / seven (7) primary clarifiers / eight (8) 4-pass aeration tanks / twelve (12) final clarifiers / UV disinfection / six (6) belt filter presses / three (3) multiple-hearth incinerators / three (3) ash slurry ponds / ash is landfilled.

Wet Weather Train – Two (2) grit tanks / three (3) fine screens / four (4) primary clarifiers / chlorination / dechlorination / flow is blended with fully treated effluent prior to discharge.

The design flow of 210 MGD during the recreational season and 240 MGD during the non-recreational season has been incorporated into this permit as the design flow per the Lemay Wastewater Treatment Plant Stress Test Report which lists this flow as the maximum treatable flow rate for the secondary system followed by UV disinfection. A flow of 210 MGD has been used for water quality based effluent limit calculations.

Application Date: 10/03/16
Expiration Date: 03/31/17

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	325.5	Secondary	Domestic
#003-#006	*Stormwater Outfalls*		
#008-#181	*Combined Sewer Overflow Outfalls*		

Facility Performance History:
This facility was last inspected on June 16, 2017. The conditions of the facility at the time of inspection were found to be satisfactory. A review of monitoring reports submitted by the permittee shows the following exceedances: *E. coli* in October 2016; pH in July 2013 and 2016; chlorine in May 2016; and TSS in April 2013.

Comments:
Influent $CBOD_5$ and TSS monitoring will not be required to determine removal efficiency. This facility receives less concentrated wastewater from the sewer system. Because the less concentrated influent is not a result of excessive infiltration, this facility qualifies to have the removal efficiency requirement removed and a mass loading limitations put in place for $CBOD_5$ and TSS per [40 CFR 133.103(e)].

Changes in this permit include the addition of Voluntary Early Nutrient Monitoring Program effluent parameters at the request of the permittee in order to simplify the reporting process. Chronic WET monitoring of the effluent has also been added. Changes in this permit also include the removal of cadmium, silver, and cyanide effluent limits and arsenic, chromium, copper, lead, mercury, nickel, zinc, chemical oxygen demand, temperature, and total toxic organics monitoring. Monitoring and effluent limits have also been removed for stormwater outfalls. Discharges will no longer occur from the ash slurry pond; therefore, sampling requirements have been removed from Outfall #002. See Part VI of the Fact Sheet for further information regarding the addition and removal of effluent parameters.

Special conditions were updated to include the addition of reporting of Non-detects requirements, bypass reporting requirements, chronic WET testing requirements, eDMR reporting requirements, expanded effluent testing requirements, and requirements for the development and implementation of a SWPPP.

Part II – Operator Certification Requirements

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 or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Owned or operated by or for a

- ☐ - Municipalities
- ☐ - Federal agency
- ☐ - County
- ☒ - Public Sewer District
- ☐ - State agency
- ☐ - Private Sewer Company regulated by the Public Service Commission
- ☐ - Public Water Supply Districts

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) or fifty (50) or more service connections.

This facility currently requires an 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: Gregory Amsden
Certification Number: 2438
Certification Level: A

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

Part III– Operational Monitoring

☒ - As per [10 CSR 20-9.010(4))], the facility is required to conduct operational monitoring.

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	1707.02	AQL, SCR, HHP, IRR, LWW, DWS, IND	07140101-0507	Direct Discharge

*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 which may be 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 (C, E, P, P1)	LOW-FLOW VALUES (CFS)*		
	1Q10	7Q10	30Q10
Mississippi	52,900	56,700	63,800

* - Data from the Mixing Zone Analysis conducted by Geosyntec Consultants dated March 1, 2012. See Appendix.

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
13,647	13,823	14,967	8,630	8,674	NA

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

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(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(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.

- **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 buffering capacity of the mixing zone.
- **Cyanide, Cadmium, and Silver**. Effluent limits have been replaced by monitoring requirements as statistical analysis conducted determined there to be no reasonable potential for the discharge to cause or contribute to an instream excursion of water quality standards for these parameters.
- **Total Residual Chlorine**. Effluent limitations were re-calculated for TRC based on updated mixing zone information and on the current Missouri Water Quality Standards for TRC. The newly established limitations are still protective of water quality.
- **Ammonia**. Effluent limitations were re-calculated for Ammonia based on updated mixing zone information, on new information derived from discharge monitoring reports, and on the current Missouri Water Quality Standards for Ammonia. The newly established limitations are still protective of water quality.
- **Whole Effluent Toxicity**. WET testing requirements were changed from pass/fail to monitoring only for toxic units. This change reflects modifications to Missouri's Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requiring the department to establish effluent limitations to control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient numerical data to conduct an analytical reasonable potential analysis. The permit writer has made a reasonable potential determination which concluded the facility does not have reasonable potential at this time but monitoring is required. Implementation of the toxic unit monitoring requirement will allow the department to effect numeric criteria in accordance with water quality standards established under §303 of the CWA.
- **Stormwater Outfalls**. The previous permit established monitoring requirements and/or limits for flow, BOD_5, TSS, pH, Oil & Grease, and Settleable Solids in Outfalls #002, #003, and #004. These parameters have all been removed from the permit and replaced with a requirement to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The requirements of developing and implementing a SWPPP are equally protective of water quality as the previous sampling requirements.

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

BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74, items WQ422 through WQ449.

☒ - Permittee is not authorized to land apply biosolids. Sludge/biosolids are incinerated.

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 permittee/facility is currently under enforcement action due to wet weather issues related to EPA's Combined Sewer Overflows (CSO) Policy and a required approval of a Long-term Control Plan to address CSOs.

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 for optional use and can be 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. A request must be made for each facility. If more than one facility is owned or operated by a single entity, 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.

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. Ammonia and metals effluent limits have all been removed from this permit due to statistical analysis showing there is no reasonable potential for the discharge to cause or contribute to an instream excursion of water quality standards. This can, in part, be contributed to MSD's successful operation of their pretreatment program.

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

In accordance with [40 CFR Part 122.44(d)(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.

☒ - A 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.

☒ - Influent $CBOD_5$ and TSS monitoring is not required to determine removal efficiency. This facility receives less concentrated wastewater from the sewer system and qualifies to have the removal efficiency requirement removed in place of mass loading limitations for $CBOD_5$ and TSS per [40 CFR 133.103(e)].

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(11)] 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.

☒ - The permittee has developed and is currently implementing a program for maintenance and repair of the collection system. The permittee's program is consistent with the US EPA's Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall continue to submit semi-annual and annual reports as required by the federal consent decree entered in the matter of The United States et al. v. The Metropolitan St. Louis Sewer District, No. 4:07-CV-1120 (E.D. Mo.) which was entered on April 27, 2012.

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 includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

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 associated with development of a site specific criterion. 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 a SOC.

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's Sewer Extension Authority Supervised Program has been reauthorized. Please see Special Condition #22 for applicable conditions.

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 February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the 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 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 NPDES Form 3510-11 – No Exposure Certification for Exclusion from NPDES Stormwater Permitting (https://www3.epa.gov/npdes/pubs/msgp2008_appendixk.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. This information will be reevaluated at the time of renewal.

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(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

☒ - 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.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(4)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

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

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

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

- ☒ 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.

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 303(d) listed stream.

Part VI – Effluent Limits Determination

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

- ☒ Missouri or Mississippi River [10 CSR 20-7.015(2)]
- ☐ Lake or Reservoir [10 CSR 20-7.015(3)]
- ☐ Losing [10 CSR 20-7.015(4)]
- ☐ Metropolitan No-Discharge [10 CSR 20-7.015(5)]
- ☐ Subsurface Water [10 CSR 20-7.015(7)]
- ☐ All Other Waters [10 CSR 20-7.015(8)]

OUTFALL #001 – MAIN FACILITY OUTFALL
EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	Daily	Monthly	T
$CBOD_5$	mg/L	1		40	25	40/25	Weekdays	Monthly	C
$CBOD_5$ (Apr 1 – Oct 31)	lbs/day	1			43,896	***	Weekdays	Monthly	C
$CBOD_5$ (Nov 1 – Mar 31)	lbs/day	1			50,167	***	Weekdays	Monthly	C
TSS	mg/L	1		45	30	45/30	Weekdays	Monthly	C
TSS (Apr 1 – Oct 31)	lbs/day	1			52,675	***	Weekdays	Monthly	C
TSS (Nov 1 – Mar 31)	lbs/day	1			60,200	***	Weekdays	Monthly	C
Escherichia coli **	#/100mL	1, 3		1,134	1,134	*/1,134	Weekly	Monthly	G
Ammonia as N	mg/L	2, 3	*		*	38.8/23.3 77.9/46.6	Monthly	Monthly	C
Oil & Grease	mg/L	1, 3	15		10	15/10	Monthly	Monthly	G
Chlorine, Total Residual	µg/L	1, 3	524		261	< 130	Weekdays	Monthly	G
Phosphorus, Total as P	mg/L	1, 11	*		*	***	Monthly	Monthly	G
Nitrogen, Total as N	mg/L	1, 11	*		*	***	Monthly	Monthly	G
Nitrate plus Nitrite, Total as N	mg/L	11	*		*	***	Monthly	Monthly	G
Kjeldahl Nitrogen, Total as N	mg/L	11	*		*	***	Monthly	Monthly	G
Cyanide, Amenable to Chlorination	µg/L	2, 3	*		*	39.1/12.6	Quarterly	Quarterly	C
Cadmium, Total Recoverable	µg/L	2, 3	*		*	7.8/2.7	Quarterly	Quarterly	C
Silver, Total Recoverable	µg/L	2, 3	*		*	21.5/7.4	Quarterly	Quarterly	C
Acute Whole Effluent Toxicity	TUa	1, 9	*			Pass/Fail	Annually	Annually	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***	Once/permit cycle	Once/permit cycle	C

PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.0		9.0	6.5-9.0	Monthly	Monthly	G

* - Monitoring requirement only.
** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
*** - Parameter was 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. Voluntary Early Nutrient Monitoring Program

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 ($CBOD_5$).** Concentration-based Effluent limitations have been established per 10 CSR 20-7.015(2), please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.** Effluent limits are also expressed in lbs/day. This facility receives less concentrated wastewater from the sewer system and qualifies to have the removal efficiency requirement removed in place of mass loading limitations for $CBOD_5$ per [40 CFR 133.103(e)].

  Concentration (mg/L) * Flow that can be treated through secondary treatment (cfs) * Conversion Factor = Mass (lbs/day)

  Monthly Average (Recreational Season April 1 – October 31)
  25 mg/L * 325.5 cfs * 5.39 = **43,896 lbs/day**

  Monthly Average (Non-Recreational Season November 1 – March 31)
  25 mg/L * 372 cfs * 5.39 = **50,167 lbs/day**

- **Total Suspended Solids (TSS).** Concentration-based Effluent limitations have been established per 10 CSR 20-7.015(2), please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.** Effluent limits are also expressed in lbs/day. This facility receives less concentrated wastewater from the sewer system and qualifies to have the removal efficiency requirement removed in place of mass loading limitations for TSS per [40 CFR 133.103(e)].

  Concentration (mg/L) * Flow that can be treated through secondary treatment (cfs) * Conversion Factor = Mass (lbs/day)

  Monthly Average (Recreational Season April 1 – October 31)
  30 mg/L * 325.5 cfs * 5.39 = **52,675 lbs/day**

  Monthly Average (Non-Recreational Season November 1 – March 31)
  30 mg/L * 372 cfs * 5.39 = **60,200 lbs/day**

- ***Escherichia coli (E. coli)***. Discharges to waters designated for secondary contact recreation shall be limited to 1,134 per 100 mL expressed as a weekly geometric mean during the recreational season (April 1 – October 31) per 10 CSR 20-7.015(9)(B)1.E. and 1,134 per 100mL as a monthly geometric mean per 10 CSR 20-7.031(5)(C).

- **Total Ammonia Nitrogen**. Monitoring only; statistical analysis conducted using the past five years of effluent data provided by the permittee indicates there is no reasonable potential for ammonia to cause or contribute to an instream excursion of water quality standards. Monitoring data will be used during the next renewal period to determine reasonable potential. This determination has been made based on MSD's maintenance of consistent effluent quality over the past five years. If ammonia loading were to increase, MSD is required to notify the department per Special Condition #7. This could cause the permit to be modified to once again include ammonia effluent limits.

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

- **Total Residual Chlorine (TRC)**. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

  Chronic WLA: $C_e = ((325.5 + 13{,}823)10 – (13{,}823 * 0.0))/325.5$
  $C_e = 434.7$ µg/L
  Acute WLA: $C_e = ((325.5 + 8{,}674)19 – (8{,}674 * 0.0))/325.5$
  $C_e = 525.3$ µg/L

  $LTA_c = 434.7\ (0.527) = 229.1$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 525.3\ (0.321) = 168.6$ µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 168.6 (3.11) = **524 µg/L** [CV = 0.6, 99th Percentile]
  AML = 168.6 (1.55) = **261 µg/L** [CV = 0.6, 95th Percentile, n = 4]

- **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. Total Nitrogen shall be determined by testing for Total Kjeldahl Nitrogen (TKN) and Nitrate + Nitrite and reporting the sum of the results (reported as N). Nitrate + Nitrite can be analyzed together or separately.

- **Nitrate plus Nitrite as Nitrogen, and Total Kjeldahl Nitrogen**. This facility participates in the Voluntary Early Nutrient Monitoring Program and requested that these parameters be included as a requirement of their permit to simplify the reporting process.

- **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 buffering capacity of the mixing zone.

- **Cyanide, Amenable to Chlorination**. Monitoring only; statistical analysis conducted using the past five years of effluent data provided by the permittee indicates there is no reasonable potential for this parameter to cause or contribute to an instream excursion of water quality standards. Quarterly monitoring data will be used during the next renewal period to determine reasonable potential.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support Document for Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 162 mg/L is used in the conversion below.

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

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Cadmium	0.924	0.889
Silver	0.850	NA

- **Cadmium and Silver, Total Recoverable**. Monitoring only; statistical analysis conducted using the past five years of effluent data provided by the permittee indicates there is no reasonable potential for this parameter to cause or contribute to an instream excursion of water quality standards. Quarterly monitoring data will be used during the next renewal period to determine reasonable potential.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity**. Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

  The acute Allowable Effluent Concentration (AEC) is determined as follows:
  Acute AEC% = $(((232.5 + 8{,}674) / 232.5)^{-1})100 = 2.6\%$

  The resulting dilution series is: 75%, 15%, 3%, 0.6%, and 0.12%.

- **Chronic Whole Effluent Toxicity**. Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

  The chronic Allowable Effluent Concentration (AEC) is determined as follows:
  Chronic AEC% = $(((232.5 + 13{,}823) / 232.5)^{-1})100 = 1.7\%$

  The resulting dilution series is: 50%, 10%, 2%, 0.4%, and 0.08%.

Parameters Removed

- **Arsenic, Chromium III, Chromium VI, Copper, Lead, Mercury, Nickel, and Zinc**. Statistical analysis conducted showed no reasonable potential for a water quality standard excursion for these parameters. As these parameters had a monitoring only requirement in the previous permit and not effluent limitations, a determination has been made to remove the monitoring requirement. These parameters will still be tested as a part of the expanded effluent testing requirement upon the next permit renewal.

- **Chemical Oxygen Demand (COD)**. COD monitoring has been removed as it has been determined that there is no reasonable potential for an instream excursion of the water quality standard.

- **Temperature**. Temperature monitoring has been removed as it has been determined that there is no reasonable potential for an instream excursion of the water quality standard.

- **Total Toxic Organics**. The annual monitoring requirement for total toxic organics has been removed as it has been determined that there is no reasonable potential for an excursion of the water quality standard. The expanded effluent testing requirement submitted with permit renewal will be used in the future to determine sampling requirements for toxics not previously established in the permit.

Sampling Frequency Justification:
The sampling and reporting frequency for all parameters has been reassessed from the previous permit. The frequencies for pH, ammonia, and Oil & Grease have been adjusted to monthly due to consistent effluent and satisfactory facility performance. For all other parameters, the frequencies have been found to be appropriate; therefore, the frequencies have been retained from the previous permit. Monitoring for nutrient parameters has been set at monthly frequencies to coincide with the Program for Voluntary Early Nutrient Monitoring as requested by the permittee. Chronic WET testing shall be conducted no less than once per permit cycle for those facilities designated as majors.

Sampling Type Justification:
As per 10 CSR 20-7.015, $CBOD_5$, TSS, and WET test samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, *E. coli*, TRC, Oil & Grease, and nutrient parameters. This is due to the holding time restriction for *E. coli*, the volatility TRC, and the fact that pH cannot be preserved and must be sampled in the field. As Oil & Grease and nutrient samples must be immediately preserved, these samples are to be collected as a grab. Ammonia, cyanide, cadmium, and silver must also be immediately preserved but may be collected as composite as the permittee has an equipment setup to handle composite collections with immediate preservation.

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.

(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 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 the equivalent to secondary treatment technology based effluent limits established in this permit and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.

(E) 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 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 permittee has waived the Cost Analysis for Compliance.

Part VIII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. The permits issued to the Metropolitan St. Louis Sewer District (MSD) will all be issued for a period of five years which does not follow this synchronization policy. The approach to synchronize MSD's permits together instead of by watershed is appropriate as it will allow for MSD to assess permit requirements more effectively.

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 November 3, 2017 – December 4, 2017. Responses to the Public Notice of this operating permit did not warrant the modification of effluent limits and/or the terms and conditions of this permit.

DATE OF FACT SHEET: AUGUST 4, 2017

COMPLETED BY:

ANGELA FALLS, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 751-1419
angela.falls@dnr.mo.gov

Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	10
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	10
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	0
All other stream discharges except to losing streams and stream reaches supporting whole body contact	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	-
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	-
Chemical addition (except chlorine, enzymes)	4	-
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
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	-
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	10
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	-
Land Disposal – low rate	3	-
High rate	5	-
Overland flow	4	-
Total from page **ONE (1)**	----	44

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	-
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	2
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	-
Raw wastes subject to toxic waste discharge	6	-
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	-
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	-
Aerated lagoon	8	-
Advanced Waste Treatment Polishing Pond	2	-
Chemical/physical – without secondary	15	-
Chemical/physical – following secondary	10	-
Biological or chemical/biological	12	-
Carbon regeneration	4	-
DISINFECTION		
Chlorination or comparable	5	5
Dechlorination	2	2
On-site generation of disinfectant (except UV light)	5	-
UV light	4	4
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	5
Anaerobic digestion	10	-
Aerobic digestion	6	-
Evaporative sludge drying	2	-
Mechanical dewatering	8	8
Solids reduction (incineration, wet oxidation)	12	12
Land application	6	-
Total from page **TWO (2)**	----	53
Total from page **ONE (1)**	---	44
Grand Total	---	97

☒ - 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 N (Summer)	12.1	5.53	1.5	0.57	29.00	15.1/2.2	0.51	1.85	NO
Total Ammonia as N (Winter)	12.1	8.75	3.1	0.89	30.00	26.3/5	0.43	1.68	NO
Arsenic, Total Recoverable	NA	NA	20.0	1.81	20.00	31/1.6	0.7	2.60	NO
Cadmium, Total Recoverable	8.2	1.78	0.4	0.21	20.00	2.5/0.1	1.1	3.81	NO
Chromium III, Total Recoverable	2676.9	4.74	128.0	0.57	20.00	13/0.4	0.5	1.95	NO
Chromium VI, Total Dissolved	15.0	6.42	10.0	0.77	20.00	22/10	0.3	1.56	NO
Copper, Total Recoverable	22.0	3.00	14.1	0.36	20.00	12/3.5	0.2	1.34	NO
Lead, Total Recoverable	150.8	9.44	5.9	1.14	20.00	20/0.5	0.7	2.53	NO
Mercury, Total Recoverable	2.8	1.62	0.5	0.19	20.00	3/0.005	1.3	2.89	NO
Nickel, Total Recoverable	706.1	13.78	78.5	1.66	20.00	40/4	0.4	1.85	NO
Silver, Total Recoverable	8.7	2.36	NA	NA	20.00	6/0.03	0.5	2.11	NO
Zinc, Total Recoverable	180.7	122.92	179.2	14.78	20.00	202/20	0.9	3.26	NO
Cyanide, Amenable to Chlorination	22.0	7.82	5.0	0.94	20.00	25/4	0.4	1.68	NO

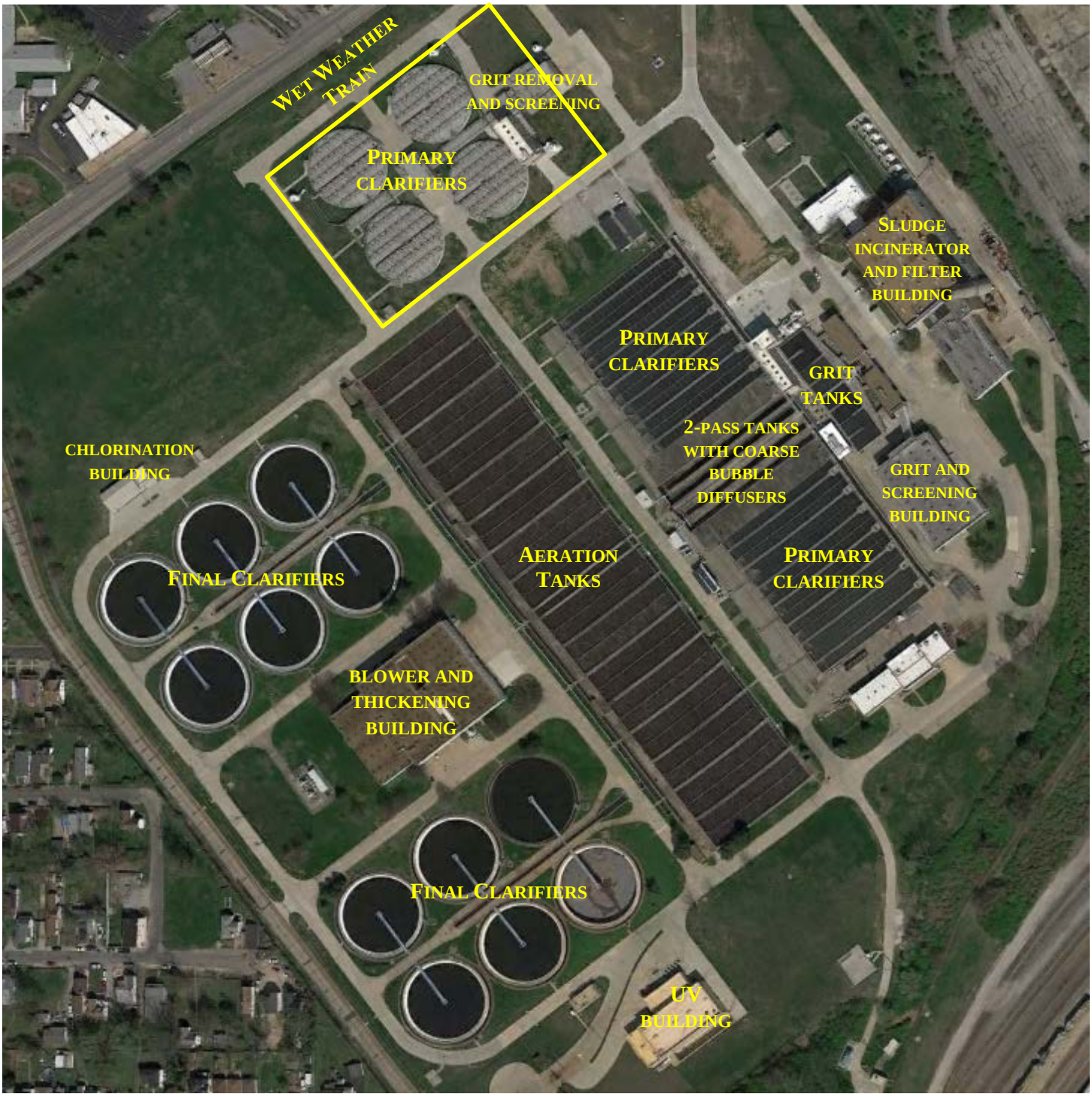
N/A – Not Applicable
* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.
*** - 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 – OUTFALL LOCATION:

APPENDIX – FACILITY LAYOUT:
Two (2) coarse mechanical bar screens / four (4) grit tanks / five (5) fine screens / two (2) 2-pass tanks with coarse bubble diffusers / seven (7) primary clarifiers / eight (8) 4-pass aeration tanks / twelve (12) final clarifiers / UV disinfection / six (6) belt filter presses / three (3) multiple-hearth incinerators / three (3) ash slurry ponds / ash is landfilled.

Wet Weather Train – Two (2) grit tanks / three (3) fine screens / four (4) primary clarifiers / chlorination / dechlorination / flow is blended with fully treated effluent prior to discharge.



APPENDIX – LEMAY WWTP MIXING ZONE ANALYSIS MEMO:

3.D.1

Geosyntec consultants

1123 Wilkes Blvd., Ste. 400
Columbia, Missouri 65201
PH 573.443.4100
FAX 573.443.4140
www.geosyntec.com

Memorandum

Date:	March 1, 2012
To:	John Lodderhose, P.E., St. Louis MSD
From:	Trent Stober, P.E., Geosyntec
Subject:	Mixing Zone Analysis of the Lemay Wastewater Treatment Plant Outfall to the Mississippi River

1. Introduction

The Metropolitan St. Louis Sewer District (MSD) is interested in receiving water mixing conditions for the Lemay Wastewater Treatment Plant (WWTP) outfall for purposes of meeting regulatory requirements and guiding planning activities. On behalf of MSD, Geosyntec Consultants (Geosyntec) prepared an uncalibrated CORMIX mixing zone model for these facilities based on readily available information and data. The purpose of this memorandum is to summarize the CORMIX modeling effort and results for this facility.

2. Approach

This modeling analysis focused on predicting effluent dilution at regulatory compliance boundaries for acute and chronic water quality criteria during critical low-flow conditions. The boundary beyond which acute and chronic criteria may not be exceeded is referred to as the zone of initial dilution (ZID) and mixing zone, respectively.

For streams with a 7Q10 low flow condition greater than 20 cubic feet per second (cfs), Missouri's effluent regulations define the MZ and ZID as follows:

- "Mixing zone – one-quarter (1/4) of stream width, cross-sectional area, or volume of flow; length of one-quarter (1/4) mile;" and
- "Zone of initial dilution – one-tenth (0.1) of the mixing volume width, cross-sectional area, or volume of flow and no more than ten (10) times the effluent design flow volume unless the use of diffusers or specific mixing zone studies can justify more dilution."

Missouri's effluent regulations also state that "[m]ixing zone and zone of initial dilution size limits will normally be based on streams at the 7Q10 low flow." An exception is provided for total ammonia nitrogen criteria.

- "The one (1)-day Q_{10} low flow condition will be used in determining acute total ammonia nitrogen criteria."
- "..., the thirty (30)-day Q_{10} low flow condition of the receiving water body will be used in determining chronic total ammonia nitrogen criteria."

Missouri's effluent regulations do not specify how the ZID should be sized if a specific mixing zone study justifies more dilution. However, guidance on sizing ZIDs is provided for in the U.S. Environmental Protection Agency's (EPA) 1991 "Technical Support Document for Water Quality-based Toxics Control" (TSD). EPA's TSD specify the following criteria for high velocity discharges (i.e., greater than 3 meters per second).

> "..., hydraulic investigations and calculations indicate that the use of a high-velocity discharge with an initial velocity of 3 meters per second, or more, together with a mixing zone spatial limitation of 50 times the discharge length scale in any direction, should ensure that the CMC is met within a few minutes under practically all conditions. The discharge length scale is defined as the square root of the cross-sectional area of any discharge pipe."

3. Outfall Configuration

Outfall configuration for the Lemay WWTP outfall.

Parameter	Value
Pipe diameter (in.)	132
Invert elevation (ft.)	386.7
Slope (rise/run)	0.0035

4. Critical Low-Flows

Using EPA's software program DFLOW 3.1, the 1Q10, 7Q10, and 30Q10 low flow values were calculated based on U.S. Geological (USGS) data from the Mississippi River at St. Louis gage station (1965-2011). Critical low-flow values are as follows:

- 1Q10 = 52,900 cfs
- 7Q10 = 56,700 cfs
- 30Q10 = 63,800 cfs

5. Model Inputs

CORMIX model inputs are categorized as discharge (i.e., outfall configuration), effluent, and ambient (i.e., receiving water). These values are described in the following sections for both the Lemay WWTP.

5.1. Description of Discharge

Discharge geometry model inputs for the Lemay WWTP outfall.

Parameter	Value
Model	CORMIX3 - Surface
Bank	Right
Discharge configuration	Flush
Horizontal angle (degrees)	90
Bottom slope (degrees)	30
Discharge outlet*	Pipe
Diameter (ft)	3.1
Bottom Invert Depth (ft)	3.1
Local depth at discharge outlet (ft)	3.1

* Consistent with EPA's prior CORMIX modeling effort for the Lemay WWTP, the outlet diameter was calculated such that area of the "pipe" results in the appropriate velocity (i.e., modeled pipe area does not equal actual pipe area which does not flow full). The calculated velocity is based on Manning's pipe flow formula and takes into account free fall.

5.2. Effluent Characteristics

Effluent characterization for the Lemay WWTP outfall.

Parameter	Value
Flow Rate (MGD)	132*
Temperature (°C)	26

*132 MGD reflects the actual flow at the Lemay WWTP and was assumed by EPA for the previous CORMIX mixing study.

5.3. Receiving Water Characteristics

Ambient receiving water model inputs for the Lemay WWTP outfall.

Parameter	1Q10	7Q10	30Q10
Average Depth (ft)[1]	21.6	22.0	22.8
Depth at Discharge (ft)[2]	21.6	22.0	22.8
Wind Speed (fps)	0	0	0
Width (ft)	unbounded		
Velocity (fps)[3]	1.7	1.7	1.9
Manning's n	0.02	0.02	0.02
Temperature (°C)	26	26	26

[1]Average depth at Lemay WWTP based on EPA calculations from a prior CORMIX modeling study.
[2]Depth at discharge does not describe the conditions immediately in front of the shoreline discharge channel. The CORMIX manual suggests setting this value equal to the average depth.
[3]Velocity based on EPA calculations from a prior CORMIX modeling study.

6. Modeling Results

Modeled dilutions for the Lemay WWTP outfall.

	1Q10	7Q10	30Q10
Bulk Zone of Initial (ZID) Dilution	34.3	34.5	36.0
Bulk Mixing Zone (MZ) Dilution	53.7	54.4	58.8

Notes: Bulk[1] MZ dilutions equals 1.7 times the centerline dilution as measured 0.25 miles downstream from the outfall. Lemay is a high-velocity discharge (i.e., >3m/s); therefore, bulk ZID dilutions are based on dilutions modeled at a horizontal downstream distance of 50 times the square root of the discharge pipe area.

Mixing zone flows and percentages for the Lemay WWTP outfall based on bulk dilutions.

	Flow (cfs)	Mixing Zone		Zone of Initial Dilution	
		cfs	%	cfs	%
1Q10	52,900	13,647	26	8,630	16
7Q10	56.700	13,823	24	8,674	15
30Q10	63,800	14,967	23	9,070	14

Notes: MZ flow = (S•Qe)-Qe where Qe = 258.85 cfs and S = bulk MZ dilution. ZID flow = (S•Qe)-Qe where Qe = 258.85 cfs and S = bulk ZID dilution.

[1] Bulk dilutions are equivalent to flux-averaged dilutions. The factor 1.7 converts the centerline dilution to a bulk dilution for three-dimensional jets (Jones, G.R. and G.H. Jirka, "CORMIX3: An Expert System for the Analysis and Prediction of Buoyant Surface Discharges", Tech. Rep., DeFrees Hydraulics Laboratory, Cornell University, August 1996, (Cooperative Agreement No. CR 818527, U.S. Environmental Protection Agency))

Allowable Effluent Concentration (AEC)

AEC = Qe/(Qs+Qe), where Qe = 258.58 cfs and Qs = 7Q10 ZID= 8,674 cfs
= 258.58/(8,674+258.58)
= 2.9%

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

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

Part I – General Conditions
Section A – Sampling, Monitoring, and Recording

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section 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
March 1, 2015

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

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
    a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Actor under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.
   Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:
    a. A site specific permit must be obtained for each operating location, including application sites.
    b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

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

    Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.
    a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
    b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:

    Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri
    a. Haulers that land apply septage must obtain a state permit
    b. Do not apply more than 30,000 gallons of septage per acre per year.
    c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
    d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
    e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

TABLE 4 - Guidelines for land application of other trace substances [1]

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

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

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

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

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

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

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal 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.
    i. PAN can be determined as follows and is in accordance with WQ426
    (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
    [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
g. Buffer zones are as follows:
    i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
    ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
    iii. 150 feet if dwellings;
    iv. 100 feet of wetlands or permanent flowing streams;
    v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
h. Slope limitation for application sites are as follows;
    i. A slope 0 to 6 percent has no rate limitation
    ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
    iii. Slopes > 12 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.
i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
        i. PAN can be determined as follows:

        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).

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

SECTION I – MONITORING FREQUENCY

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

TABLE 5

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

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

[2] Calculate plant available nitrogen (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.

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

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

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.
Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.
Note 3: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

5. Annual report contents. The annual report shall include the following:
    a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
    b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. 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, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

32212

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	
MSD - Lemay Wastewater Treatment Plant	
PERMIT NO.	COUNTY
MO-0025151	St. Louis

APPLICATION OVERVIEW

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

BASIC APPLICATION INFORMATION

A. Basic application information for all applicants. All applicants must complete Part A.

B. Additional application information for all applicants. All applicants must complete Part B.

C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:

1. Has a design flow rate greater than or equal to 1 million gallons per day.
2. Is required to have or currently has a pretreatment program.
3. Is otherwise required by the permitting authority to provide the information.

E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:

1. Has a design flow rate greater than or equal to 1 million gallons per day.
2. Is required to have or currently has a pretreatment program.
3. Is otherwise required by the permitting authority to provide the information.

F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.

SIUs are defined as:

1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
2. Any other industrial user that meets one or more of the following:
    i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
    ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
    iii. Is designated as an SIU by the control authority.
    iv. Is otherwise required by the permitting authority to provide the information.

G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems.*

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FORM B2 – APPLICATION FOR AN OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
JET PAY OONFIRMATION NUMBER	20008667

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- 0025151 Reason: New effluent E. Coli limits *Attachments 1a - 1c

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

2. FACILITY *See Attachments 2.4a & 2.4b for SW outfall map and descriptions.

NAME		TELEPHONE NUMBER WITH AREA CODE	
MSD - Lemay WWTP		(314) 638-5196	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
201 Hoffmeister Avenue	St. Louis	MO	63125

2.1 LEGAL DESCRIPTION (Facility Site): Sec. 19 , T 44N , R 7E COUNTY: St. Louis

2.2 UTM Coordinates Easting (X): 738.1 Northing (Y): 4268.4
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Mississippi River (P) - Outfall #001 & #006, Unnamed Tributary to River des Peres - Outfalls #003 - #005

2.4 Number of Outfalls: 5 wastewater outfalls: 1 stormwater outfalls: 4 instream monitoring sites:

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

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
Metropolitan St. Louis Sewer District	blhoel@stlmsd.com	(314) 768-6200	
ADDRESS	CITY	STATE	ZIP CODE
2350 Market Street	St. Louis	MO	63103

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 *Attachment 3.2
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	
Metropolitan St. Louis Sewer District	blhoel@stlmsd.com	(314) 768-6200	
ADDRESS	CITY	STATE	ZIP CODE
2350 Market Street	St. Louis	MO	63103

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)
*See Attachment 5		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	

6. FACILITY CONTACT

NAME	TITLE		
Karl Nowak	Treatment Plant Manager		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
knowak@stlmsd.com	(314) 638-5196		
ADDRESS	CITY	STATE	ZIP CODE
201 Hoffmeister Avenue	St. Louis	MO	63125

FACILITY NAME	PERMIT NO.	OUTFALL NO.
MSD - Lemay WWTP	MO- 0025151	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.

Attachments 7.1a and 7.1b.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
MSD - Lemay WWTP	MO- 0025151	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued) *See Attachment 7.2a and 7.2b

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.): 1,126,833 Design P.E. 2,100,000

7.5 Connections to the facility:

Number of units presently connected: Approximately 160,857 total connections

Residential: 140,601 Commericial: 20,256* Industrial _____ *Includes industrial + commercial connections

7.6 Design Flow 350 MGD | Actual Flow 111.6 MGD (Average Flow 1/1/18 - 12/31/18)

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? 7

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

*See Attachment 7.8

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 ☑

FACILITY NAME	PERMIT NO.	OUTFALL NO.
MSD - Lemay WWTP	MO- 0025151	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 59,831 Actual Dry Tons/Year 18,490.14 (2018)

9.3 Sludge storage provided: _____ Cubic feet; _____ Days of storage; _____ 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) N/A _____

9.5 Sludge Treatment:

*Belt Press Dewatering

☐ 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		
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	

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

NAME	EMAIL ADDRESS		
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
		MO-	

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

END OF PART A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
MSD - Lemay WWTP	MO- 0025151	001

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)

10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) 2,164.8 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:

MSD is addressing inflow and infiltration through its Consent Decree (United States of America and the State of Missouri, and Missouri Coalition for the Environment Foundation v. Metropolitan St. Louis Sewer District, No. 4:07-CV-1120-CEJ, taken on behalf of the U.S. Environmental Protection Agency, State, and the Coalition under the Clean Water Act).

11. BYPASSING

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

If yes, explain:

There are periodic sewer overflows in the collection system and influent flows greater than the facility's secondary treatment capacity are diverted from secondary treatment..

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.

2016 - The Consent Decree Stress Test will determine design capacity. Attachment previously submitted.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
MSD - Lemay WWTP	MO- 0025151	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 #001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.4	S.U.	7.04	S.U.	13
pH (Maximum)	7.5	S.U.	7.04	S.U.	13
Flow Rate	286.7	MGD	111.6	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			
	$CBOD_5$	16	mg/L	5.82	mg/L	277	Std. Methods 5210B	2 mg/L
E. COLI		>24,196	#/100 mL	136.29	#/100 mL	43	Std. Methods 9223B	<10
TOTAL SUSPENDED SOLIDS (TSS)		33	mg/L	7.43	mg/L	365	Std. Methods 2540D	2 mg/L
TOTAL PHOSPHORUS		5.15	mg/L	3.21	mg/L	12	Std. Methods 4500-P	0.079 mg/L
TOTAL KJELDAHL NITROGEN		12	mg/L	3.74	mg/L	13	Std. Methods 4500-N	0.6 mg/L
NITRITES + NITRATES		8.9	mg/L	5.96	mg/L	12	Std. Methods 4500-NO2	0.002 mg/L
AMMONIA AS N		10.6	mg/L	3.37	mg/L	13	Std. Methods 4500C	2 mg/L
CHLORINE* (TOTAL RESIDUAL, TRC)		0.07	mg/L	0.04	mg/L	26	Std. Methods 4500- H+B	0.13 mg/L
DISSOLVED OXYGEN			mg/L		mg/L			
OIL and GREASE		<4	mg/L	<4	mg/L	13	EPA 1664A	4 mg/L
OTHER: _____			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
MSD - Lemay WWTP	MO- 0025151	001, 003, 004, 005, 006

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)
Karl Nowak	Treatment Plant Manager

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
(314) 638-5196

DATE SIGNED
12 Apr 2019

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.

(5)(C) of 10 CSR 20-7.031;

B. Discharges to lakes designated as whole body contact recreational or secondary contact recreational in Table G of 10 CSR 20-7.031 shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031;

C. Discharges located within two (2) miles upstream of stream segments or lakes designated for whole body contact recreational or secondary contact recreational in Tables H and G of 10 CSR 20-7.031 shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031 for the receiving stream segment or lake designated for those uses;

D. *E. coli* limits. During the recreation season, discharges to waters designated for whole body contact "A" as defined in part (1)(C)2.A.(I) of 10 CSR 20-7.031 shall be limited to one hundred twenty-six (126) colony forming units per one hundred (100) milliliters (ml) expressed as a monthly geometric mean for POTWs and non-POTWs. During the recreation season, discharges to waters designated for whole body contact "B" as defined in part (1)(C)2.A.(II) of 10 CSR 20-7.031 shall be limited to two hundred six (206) colony forming units per one hundred (100) ml expressed as a monthly geometric mean for POTWs and non-POTWs. During the recreation season, discharges to waters designated for secondary contact recreational as defined in subparagraph (1)(C)2.B. of 10 CSR 20-7.031 shall be limited to one thousand one hundred thirty-four (1,134) colony forming units per one hundred (100) ml expressed as a monthly geometric mean for POTWs and non-POTWs. For the entire calendar year, discharges to waters that are defined by paragraph (1)(B)3. of this rule as losing streams shall be limited to one hundred twenty-six (126) colony forming units per one hundred (100) ml expressed as a daily maximum;

E. Short-term *E. coli* limits. Short-term effluent limitations shall be expressed as a daily maximum for non-POTWs and as a weekly geometric mean for POTWs. Short-term effluent limitations for discharges to waters designated for whole body contact "A" and "B" as well as those designated for secondary contact recreation shall be derived by multiplying the monthly geometric mean effluent limitations identified in (9)(B)D. of this rule by a factor of five (5), except that alternative multipliers may be utilized to calculate short-term *E. coli* limitations when proposed and incorporated into permits. At no time shall using alternative multipliers in short-term effluent limitations cause or contribute to an excursion of the in-stream water quality criteria.

F. As an alternative to the limits prescribed in subparagraphs (9)(B)1.A. through E. of this rule, the department may allow permit applicants to conduct a study to develop *E. coli* limits that reflect pathogen decay. Prior to conducting this study applicants shall submit a quality assurance project plan for approval prior to the study, and submit all findings as part of their permit application; and

G. Notwithstanding the bacteria limits prescribed in paragraphs (9)(1)A. through F. of this rule, discharges to losing streams shall be considered in compliance so long as no more than ten (10) percent of samples exceed one hundred twenty-six (126) colony forming units per one hundred (100) ml daily maximum;

2. Nutrients. Reserved for Statewide Nutrient Effluent Limits.

(C) Schedules of Compliance.

1. Compliance with new or revised National Pollutant Discharge Elimination System (NPDES) or Missouri operating permit limitations shall be achieved and in accordance with the federal regulation 40 CFR Part 122.47, "Schedules of Compliance," May 15, 2000, as published by the Office of the Federal Register, National Archives and Records Administration, Superintendent of Documents, Pittsburgh, PA 15250-7954, which is hereby incorporated by reference and does not include later amendments or additions.

2. A compliance schedule may be modified in accordance with the federal regulation 40 CFR 122.62 "Modification or revocation and reissuance of permits," November 20, 2008, as published by the Office of the Federal Resister, National Archives and Records Administration, 700 Pennsylvania Avenue, Washington, DC 20408 which is hereby incorporated by reference and does not include later amendments or additions.

(D) Monitoring, Analysis, and Reporting.

1. All construction and operating permit holders shall submit reports at intervals established by the permit or at any other reasonable intervals required by the department. The monitoring and analytical schedule shall be as established by the department in the operating permit.

2. The analytical and sampling methods used must conform to federal regulation 40 CFR Part 136.3 "Identification of test procedures," August 28, 2017, as published by the Office of the Federal Register, National Archives and Records Administration, 700 Pennsylvania Avenue, Washington, DC 20408 which is hereby incorporated by reference and does not include later amendments or additions.

3. Approval of alternative test procedures shall follow the criteria set forth in federal regulation 40 CFR 136.4 "Application for and approval of alternate test procedures for nationwide use," August 28, 2017, as published by the Office of the Federal Register, National Archives and Records Administration, Washington, DC 20408 or federal regulation 40 CFR 136.5 "Approval of alternate test procedures for limited use," August 28, 2017, as published by the Office of the Federal Register, National Archives and Records Administration, 700 Pennsylvania Avenue, Washington, DC 20408, which are incorporated by reference and do not include later amendments or additions.

4. Sampling and analysis by the department to determine violations of this regulation will be conducted in accordance with the methods listed in paragraph (9)(D)2. of this rule or any other approved by the department. Violations may be also determined by review of the permittee's self-monitoring reports.

5. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in the permit, the permittee shall provide the department with the following information, with the next discharge monitoring report as required under subsection (9)(D) of this rule:

A. A description of the discharge and cause of noncompliance;

B. The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

C. The steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

6. In the case of any discharge subject to any applicable toxic pollutant effluent standard under Section 307(a) of the federal Clean Water Act, the information required by paragraph (9)(D)5. of this rule regarding a violation of this standard shall be provided within twenty-four (24) hours from the time the owner or operator of the water contaminant source, point source, or wastewater treatment facility becomes aware of the violation or potential violation. This information may be provided via an electronic web-based system developed by the department, provided it is available. If this information is provided orally, a written submission covering these points shall be provided within five (5) working days of the time the owner or operator of the water contaminant source, point source, or wastewater treatment facility becomes aware of the violation.

7. Bacteria Monitoring for Disinfection.

Attachment 1b
Current Effluent Limitations

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 shall become effective on **January 1, 2018** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/day	24 hr. total
Carbonaceous Biochemical Oxygen Demand$_5$ (Note 1, Page 4)	mg/l lbs/day		60	40 83,611	once/weekday***	composite**
Total Suspended Solids (Note 1, Page 4)	mg/l lbs/day		65	45 94,063	once/weekday***	composite**
E. coli (Note 2, Page 4)	#/100ml		1,134	1,134	once/week	grab
Ammonia, Total as N	mg/l	*		*	once/month	composite**
Oil & Grease	mg/l	15		10	once/month	grab
Chlorine, Total Residual (Note 3, Page 4)	µg/l	140		< 130	once/weekday***	grab
Phosphorus, Total as P	mg/l	*		*	once/month	grab
Nitrogen, Total as N	mg/l	*		*	once/month	grab
Nitrate plus Nitrite, Total as N	mg/l	*		*	once/month	grab
Kjeldahl Nitrogen, Total as N	mg/l	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2018 THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Silver, Total Recoverable	µg/l	*		*	quarterly*****	composite**
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2018.						
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH Units ****	SU	6.0		9.0	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2018.						

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at regular intervals no more than 30 minutes apart by an automatic sampling device. If there is a failure of the automatic sampling device, then the composite sample may be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of 2 hours between each grab sample, until the automatic sampling device is repaired or replaced. Other alternate compositing approaches will be allowed with department approval.

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

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

***** See table on Page 4 for quarterly sampling requirements.

Attachment 1c
Proposed Effluent Limitations

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 shall become effective on **January 1, 2018** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/day	24 hr. total
Carbonaceous Biochemical Oxygen Demand$_5$ (Note 1, Page 4)	mg/L lbs/day		60	40 83,611	once/weekday***	composite**
Total Suspended Solids (Note 1, Page 4)	mg/L lbs/day		65	45 94,063	once/weekday***	composite**
E. coli (Note 2, Page 4)	#/100mL		5,670	1,134	once/week	grab
Ammonia, Total as N	mg/L	*		*	once/month	composite**
Oil & Grease	mg/L	15		10	once/month	grab
Chlorine, Total Residual (Note 3, Page 4)	µg/L	140		≤ 130	once/weekday***	grab
Phosphorus, Total as P	mg/L	*		*	once/month	grab
Nitrogen, Total as N	mg/L	*		*	once/month	grab
Nitrate plus Nitrite, Total as N	mg/L	*		*	once/month	grab
Kjeldahl Nitrogen, Total as N	mg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Silver, Total Recoverable	µg/L	*		*	quarterly*****	composite**
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2018.						
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH Units ****	SU	6.0		9.0	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2018.						

* Monitoring requirement only.

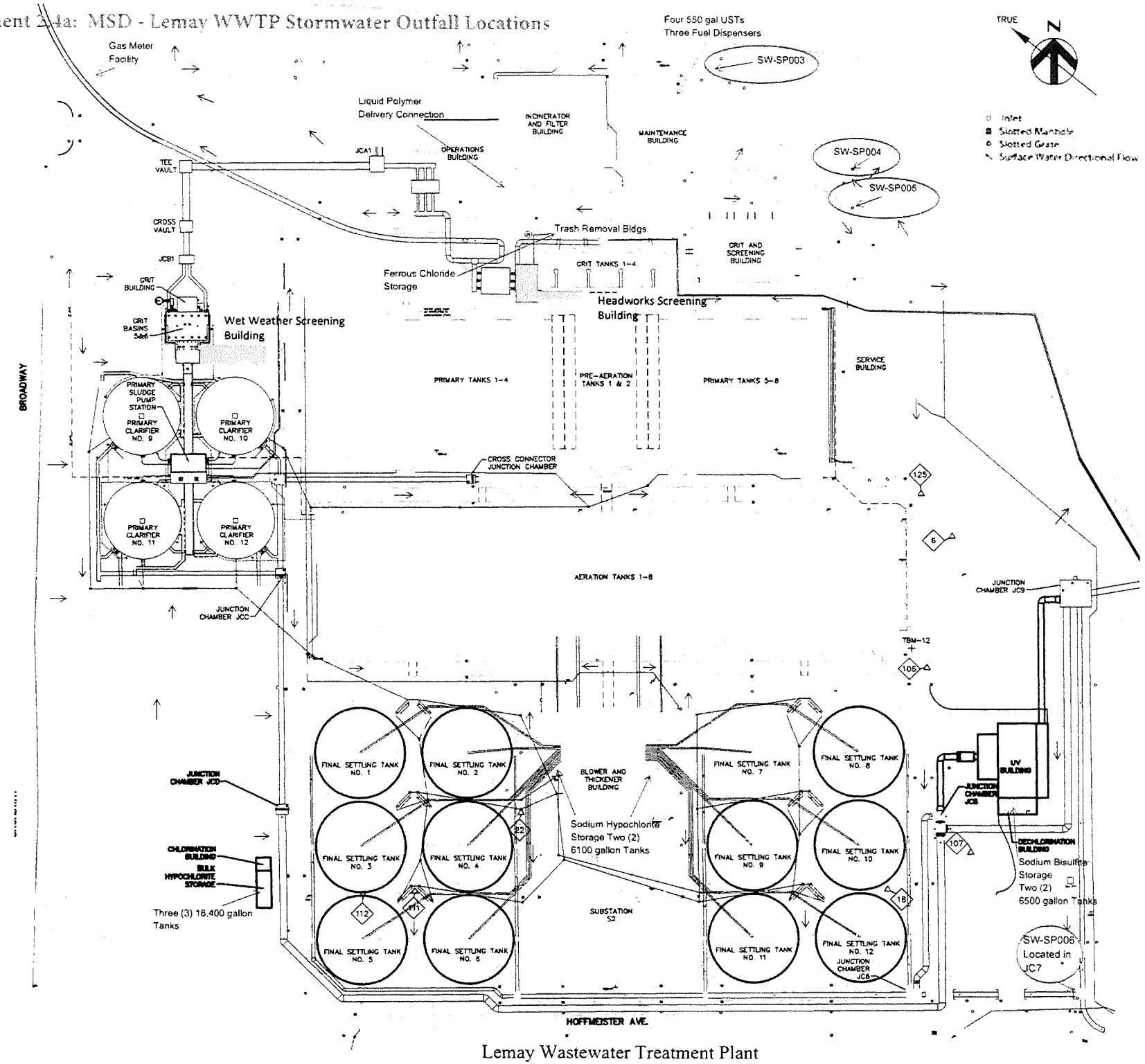
** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at regular intervals no more than 30 minutes apart by an automatic sampling device. If there is a failure of the automatic sampling device, then the composite sample may be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of 2 hours between each grab sample, until the automatic sampling device is repaired or replaced. Other alternate compositing approaches will be allowed with department approval.

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

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

***** See table on Page 4 for quarterly sampling requirements.

Attachment 3.4a: MSD - Lemay WWTP Stormwater Outfall Locations



Lemay Wastewater Treatment Plant

SITE ORIENTATION PLAN

Attachment 2.4b: Stormwater Outfall Descriptions

Outfall	Description
#003	Receives stormwater runoff from fuel dispenser area, maintenance building, sludge incinerator, and filter press area.
#004	Receives stormwater runoff mainly from roads that lead to the maintenance building, sludge incinerator, and filter press area.
#005	Receives stormwater runoff from the trash removal and grit/screening buildings.
#006	Receives stormwater runoff from the blower/thickening building and final clarifiers.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FINANCIAL QUESTIONNAIRE

NOTE ► **FINANCIAL INFORMATION THAT IS NOT PROVIDED THROUGH THIS FORM WILL BE OBTAINED BY THE DEPARTMENT FROM READILY AVAILABLE SOURCES.**

1. GENERAL INFORMATION

FACILITY NAME	PERMIT NUMBER
MSD - Lemay Wastewater Treatment Plant	#MO- 0025151
CITY	**COUNTY**
St. Louis	St. Louis

2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES)

See Attachment 3.2 Section 2.1

2.1 Number of connections to the facility: Residential 140,601 Commercial 20,256* Industrial _____ *Includes industrial + commercial users

2.2	Current sewer user rate (Based on a 5,000 gallon per month usage):	$49.31 (FY 2018)
2.3	Current annual operating costs for the facility (excludes depreciation):	$11,217,008 (FY 2018)
2.4	Bond rating (if applicable):	Moody Aa1, Standard & Poor AAA, Fitch AA+
2.5	Bonding capacity:	N/A; citizens must approve bond issues
2.6	Current outstanding debt relating to wastewater collection and treatment:	$1,693,175,732 (FY 2018)
2.7	Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure:	$14.24 of res. rate for 5,000 gallons

2.8 Attach any relevant financial statements.

3. FINANCIAL INFORMATION REQUIRED FROM MUNICIPALITIES

3.1	Municipality's Full Market Property Value:	$28,615,635,935 City, County, Dist. Ext.
3.2	Municipality's Overall Net Debt:	$1,693,175,732 (FY 2018)
3.3	Municipality's Property Tax Revenues (levied) [A]:	$32,332,177
3.4	Municipality's Property Tax Revenues (collected) [B]:	$33,180,969 (includes prior period adj.)
3.5	Municipality's Property Tax Collection Rate ([B]/[A]):	103% (includes prior period collections)

4. FINANCIAL INFORMATION REQUIRED FROM SEWER DISTRICTS

See Attachment 3.2 Section 4.1

4.1 Total connections to the sewer district: Residential 402,312 Commercial 24,296* Industrial _____ *Includes industrial + commercial users

4.2 When facilities require upgrades, how are the costs divided? Will the homes connected to the upgraded facility bear the costs? Will the costs be divided across the sewer district?

Costs net of connections fees are divided district wide and implemented with rate commission proposals.

5. ADDITIONAL CONSIDERATIONS (ALL FACILITIES)

5.1 Provide a list of major infrastructure or other investments in environmental projects. Include project timing and costs and indicate any possible overlap or complications (attach sheets as necessary):

MSD is executing a 23 year Consent Decree agreement with the EPA. A list of major infrastructure projects can be found in MSD's Sanitary Sewer Overflow Control Master Plan Final Revision Dated 8/29/2014.

5.2 Provide a list of any other relevant local community economic conditions that may impact the ability to afford new permit requirements (attach sheets as necessary):

6. CERTIFICATION

FINANCIAL CONTACT	OFFICIAL TITLE
Marion Gee	Director of Finance
EMAIL ADDRESS	**TELEPHONE NUMBER WITH AREA CODE**
mgee@stlmsd.com	(314) 768-6299

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.

OWNER OR AUTHORIZED REPRESENTATIVE	OFFICIAL TITLE
Marion Gee	Director of Finance
SIGNATURE	**DATE SIGNED**
Marion M. Gee	3-15-19

INSTRUCTIONS FOR COMPLETING THE FINANCIAL QUESTIONNAIRE

The Financial Questionnaire it to be completed by municipalities, sewer districts, and water supply districts when filing for renewal of their Missouri State Operating Permit. The Financial Questionnaire is to be submitted as an attachment to *FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY* and *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.*

1. GENERAL INFORMATION – Provide the name by which the facility is locally known, the Missouri State Operating Permit number, and the city and county where the facility is located.
2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES) – Municipalities, sewer districts, and water supply districts are to complete.

2.1 Self-explanatory.
2.2 Provide the rate that a household would be charged for sewer service if they use 5,000 gallons per month.
2.3 Provide the cost to operate and maintain the wastewater facility annually.
2.4 Bond ratings can be found here: https://emma.msrb.org/IssuerHomePage/HomepagesForC6?cusip6=795169
2.5 General obligation bond capacity allowed by constitution: Cities = up to 20% of taxable tangible property; Sewer districts = up to 5% of taxable tangible property.
2.6 Provide the amount of debt owed on wastewater collection and treatment. Debt information is typically available from your community's annual financial statements
2.7 Provide the amount of a user's monthly sewer bill that is used toward debt owed on wastewater collection and treatment. This may be a percentage or dollar amount.
2.8 Self-explanatory.

3. FINANCIAL INFORMATION REQUIRED FROM MUNICIPALITIES – Municipalities are to complete.

3.1 Full Market Property Value is typically available through your community or state assessor's office.
3.2 Debt information is typically available from your community's annual financial statements.
3.3 Property tax revenues are typically available from your community's annual financial statements. Property tax rates for Missouri communities can be found in the annual auditor's report: https://app.auditor.mo.gov/AuditReports/AudRpt2.aspx?id=31
3.4 Property Taxes Levied = (Real Property Assessed Value) * (Property Tax Rate). This information is typically available through your community or state assessor's office and your community's annual financial statements. Property tax rates for Missouri communities can be found in the annual auditor's report: https://app.auditor.mo.gov/AuditReports/AudRpt2.aspx?id=31.
3.5 Property tax collection rate = (Property Tax Revenues) ÷ (Property Taxes Levied).

4. FINANCIAL INFORMATION REQUIRED FROM SEWER DISTRICTS – Sewer Districts and Water Supply Districts are to complete.

4.1-4.2 Self-explanatory.

5. ADDITIONAL CONSIDERATIONS (ALL FACILITIES) – Municipalities, sewer districts, and water supply districts are to complete.

5.1-5.2 Self-explanatory.

6. CERTIFICATION – Provide the name and contact information for the individual who can respond to financial information requests for your community. This form must be signed by your community's "owner" or "authorized representative". The owner for a municipality is either the principal executive officer or ranking elected official.

If there are any questions concerning this form or your Missouri State Operating Permit, contact the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-751-6825.

Attachment 3.2 Section 2.1: Financial Questionnaire Attachment

The numbers of connections to the facility are approximations.

Commercial connections figure includes the combined amount of connections for industrial and commercial users.

Approximate Total Connections to Facility: 160,857

Attachment 3.2 Section 4.1: Financial Questionnaire Attachment

The numbers of connections to the sewer district are approximations.

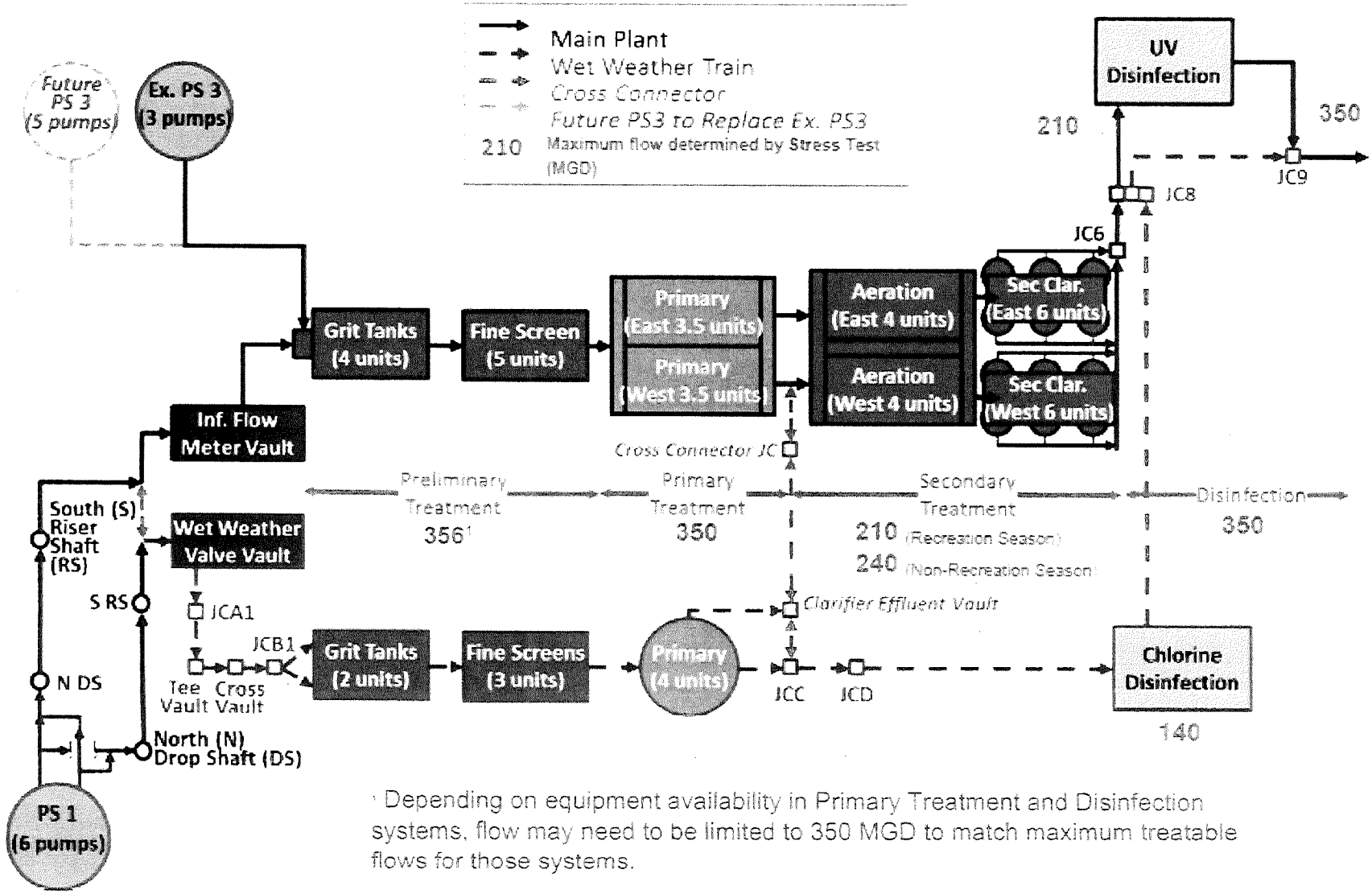
Commercial connections figure includes the combined amount of connections for industrial and commercial users.

Approximate Total Connections to the Sewer District: 426,608

Attachment 5: Lemay WWTP Operator's Licenses

NAME	Plant	Certificate Level	Certificate Number	Expiration Date
Andrew Kuhn	LT	D	13337	4/30/2019
Austin Sibole	LT	D	13938	4/30/2021
Chelsea Richardson	LT	D	14177	10/31/2021
Chris Hoffman	LT	D	14628	11/30/2019
Courtney Glassmeyer	LT	D	11815	9/30/2021
David Alderman	LT	A	12420	4/30/2019
Deann Hanna	LT	A	9755	5/31/2019
Eugene Brackman	LT	D	14893	8/31/2020
Frank Schafer	LT	A	8143	2/28/2022
Jeff Hindelang	LT	D	14507	8/31/2019
Kent Highsmith	LT	A	13141	4/30/2021
Lloyd Odell	LT	A	9740	6/30/2019
Mark Smith	LT	A	3360	3/31/2020
Mike Timreck	LT	A	14418	9/30/2021
Patty Wallace	LT	D	14912	8/31/2020
Robert Essen	LT	D	15371	8/31/2021
Ryan Davis	LT	D	12716	4/30/2021
Shane Long	LT	D	15380	8/31/2021
Steven Kane	LT	D	14964	9/30/2020
Tim Phillips	LT	B	13909	4/30/2021
Zackary Williams	LT	D	15098	1/31/2021

Attachment 7.1a: Lemay WWTP Schematic Diagram



[1] Depending on equipment availability in Primary Treatment and Disinfection systems, flow may need to be limited to 350 MGD to match maximum treatable flows for those systems.

Attachment 7.1b: Lemay WWTP Unit Process Descriptions and Capacities

Unit Process	Description	Status	Design Basis	Design Capacity
No. 1 Pump Station				
Screens	Two mechanically-cleaned bar screens with 2½-inch clear bar spacing	Active		
Pumps	Six 40,000 gpm pumps	Active	40,000 gpm at 100 ft head, single pump	335 MGD with six pumps
No. 3 Pump Station				
Pumps	Two 8,500 gpm pumps	Active	8,500 gpm, single pump	Minimum 15 MGD with two pumps
Grit Removal				
Original train	Four 55-ft square tanks	Active	0.5 ft/sec velocity	356 MGD
Wet weather expansion	Two 35-ft square tanks	Active	0.5 ft/sec velocity	
Fine Screens				
Original train	Four fine screens	Active	64 MGD each	256 MGD with four fine screens
Wet weather expansion	Two fine screens	Active	50 MGD each	100 MGD
Preaeration	Two 2-pass tanks with coarse bubble diffusers. Each pass is 23 ft x 268 ft x 13 ft deep.	Not used	20 minutes detention at 167 MGD design average flow	233 MGD peak design flow
Primary Settling				
Original train	Seven 80 ft x 268 ft clarifiers, 10 ft deep	Active	1,500 gpd/sf peak	250 MGD with six clarifiers, one offline.
Wet weather expansion	Four 133 ft diameter clarifiers, 12.25 ft SWD	Active	1,500 gpd/sf peak	100 MGD. (Rated for 84 MGD).

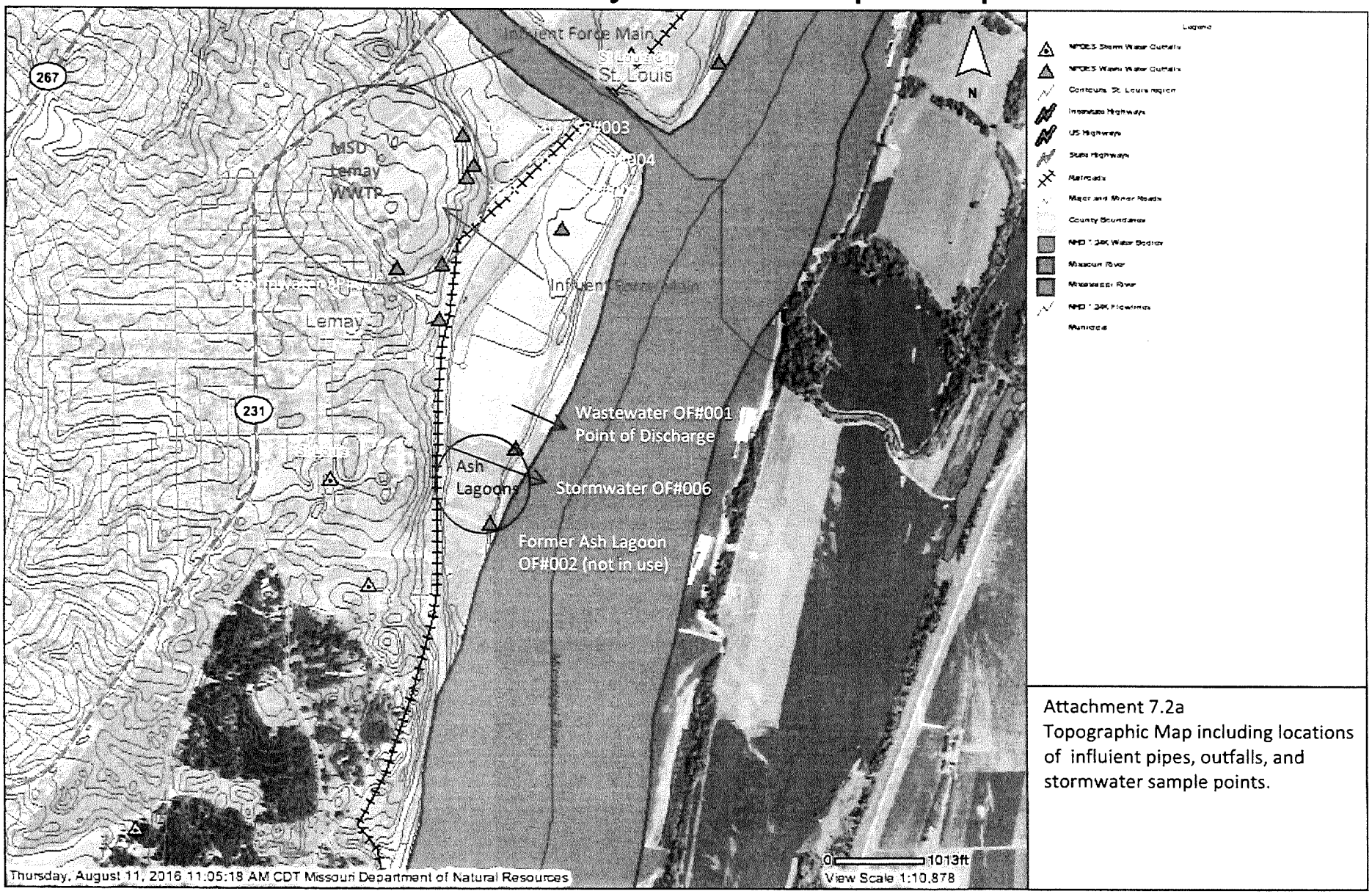
Attachment 7.1b: Lemay WWTP Unit Process Descriptions and Capacities

Unit Process	Description	Status	Design Basis	Design Capacity
Aeration	Eight 4-pass aeration tanks operated in sludge reaeration / step feed mode. Each pass is 30 ft x 204 ft x 15 ft deep. Settled wastewater is introduced at the head of passes 2, 3, and 4. The first pass receives return sludge. Six of the eight tanks have fine-bubble ceramic disc diffusers; the other two have fine-bubble membrane diffusers.	Active	240 MGD	240 MGD with seven tanks, one offline
Final Settling	Twelve 150 ft diameter peripheral feed Tow-Bro clarifiers, 12 ft SWD	Active	1,100 gpd/sf	240 MGD with eleven clarifiers, one offline.
Disinfection				
Primary- treated effluent	Chlorination (sodium hypochlorite) and dechlorination (sodium bisulfite). Only operational during blending (wet weather).	Active	4 to 10 mg/l chlorine dose CT = 30 mg-min/l	140 MGD
Secondary effluent	Low pressure lamp ultraviolet disinfection	Active	40 mW-s/cm2	Maximum design capacity 240 MGD. Due to flow constraints, flow must be limited to a set point of 210 MGD through secondary treatment during disinfection season to avoid flooding UV channels that would result in damage to UV equipment.
Outfall	132 inch diameter gravity outfall to Mississippi River	Active	800 MGD	800 MGD
Solids Handling				
Thickening	Co-thickening of primary and secondary sludges in primary settling tanks			
Dewatering	Six 2-meter belt filter presses	Active	3,000 lb/hr dry solids each	
Incineration	Three multiple-hearth incinerators	Active	2.21 - 2.32 tons/hr dry solids each	

Attachment 7.1b: Lemay WWTP Unit Process Descriptions and Capacities

Unit Process	Description	Status	Design Basis	Design Capacity
Ash dewatering	Three ash slurry ponds	Two Active, One Inactive		
Ash disposal	Landfilling at Prospect Hill facility	Active	Total volume of approx. 2,000,000 CY ash	Landfill has sufficient capacity to receive ash beyond the next 5-year permit cycle

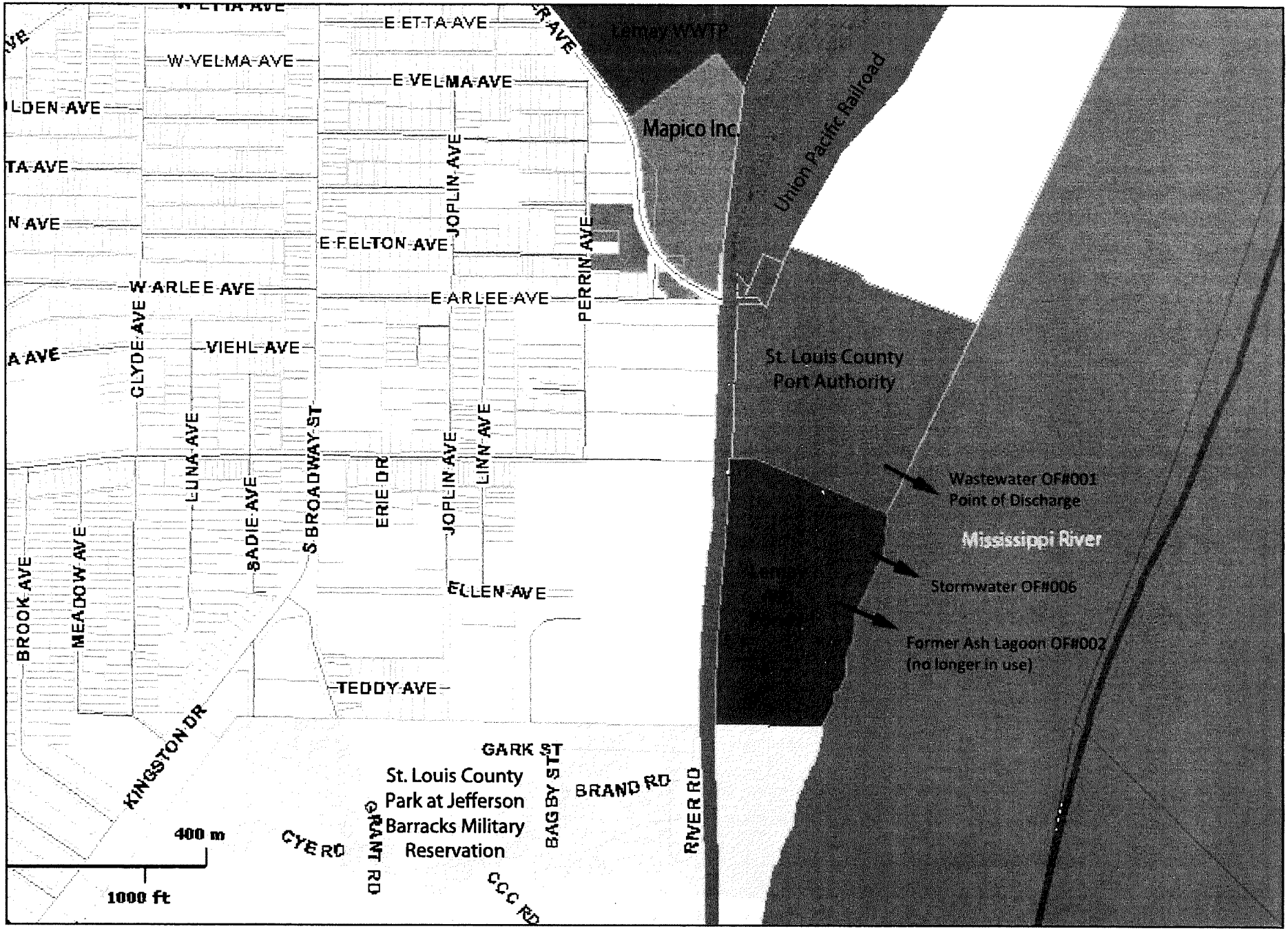
Attachment 7.2a: MSD - Lemay WWTP Topo Map



Attachment 7.2a
Topographic Map including locations of influent pipes, outfalls, and stormwater sample points.

Missouri Department of Natural Resources

This timestamp indicates the date and time the map was generated. Data layers in the map are updated at a variety of intervals and may not reflect current conditions. Disclaimer: Although this map has been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.



Attachment 7.2b Downstream Property Owners

Attachment 7.8 Lemay WWTP Significant Industrial User's (SIUs) – 2018

MSD Facility Identifier	Facility Name	Physical Location	Treatment Area
1016336500	ARAMARK UNIFORM SERVICES	10822 Midwest Industrial Boulevard,Saint Louis,MO,63132,USA	Lemay
1042923000	ARCHITECTURAL METALS INC	6315 Maple Avenue,Saint Louis,MO,63130,USA	Lemay
1024354100	BARNES-JEWISH HOSPITAL-NORTH CAMPUS	216 S Kingshighway Boulevard,Saint Louis,MO,63110,USA	Lemay
1024353400	BARNES-JEWISH HOSPITAL-SOUTH CAMPUS	1 Barnes Hospital Plaza,Saint Louis,MO,63110,USA	Lemay
1047349901	BECTON DICKINSON	5 Sunnen Drive,Saint Louis,MO,63143,USA	Lemay
1053946900	BITRODE CORPORATION	9787 Green Park Industrial Drive,Saint Louis,MO,63123,USA	Lemay
1020792600	BODINE ALUMINUM INC	2100 Walton Road,Saint Louis,MO,63114,USA	Lemay
1016064600	CARE-TECH LABORATORIES INC	3224 S Kingshighway Boulevard,Saint Louis,MO,63139,USA	Lemay
1030868200	CARR LANE MANUFACTURING CO	4200 Carr Lane Court,Saint Louis,MO,63119,USA	Lemay
1015988300	CENTRAZ INDUSTRIES INC	4051 Bingham Avenue,Saint Louis,MO,63116,USA	Lemay
1020584100	CHEMISPHERE CORPORATION	2101 Clifton,Saint Louis,MO,63139,USA	Lemay
1030860400	CR METAL PRODUCTS INC	10655 Gateway Boulevard,Saint Louis,MO,63132,USA	Lemay
1016343900	DR PEPPER / SEVEN UP MANUFACTURING CO	8900 Page Avenue,Saint Louis,MO,63114,USA	Lemay
1016147800	DYNACRAFT INC	5000 Connecticut,Saint Louis,MO,63139,USA	Lemay
1020585200	ELEMENTIS SPECIALTIES INC	5548 Manchester Avenue,Saint Louis,MO,63110,USA	Lemay
1024458900	ESSEX INDUSTRIES	8007 Chivvis Drive,Saint Louis,MO,63123,USA	Lemay
1008724100	ESSEX MANUFACTURING DIVISION	6 Sunnen Drive,Saint Louis,MO,63143,USA	Lemay
1015973500	GMP METAL PRODUCTS	3850/3883 Delor Street,Saint Louis,MO,63116,USA	Lemay
1038062000	ICE CREAM SPECIALTIES INC	8419 Hanley Industrial Drive,Saint Louis,MO,63144,USA	Lemay
1015950000	ICL SPECIALTY PRODUCTS INC	8201 Idaho Avenue,Saint Louis,MO,63111,USA	Lemay
1024531800	INTELLIGRATED SYSTEMS	9301 Olive Boulevard,Saint Louis,MO,63132,USA	Lemay
7777704801	JEFFERSON BARRACKS MARINE SERVICE	700 E Davis Street,Saint Louis,MO,63111,USA	Lemay
1046164300	KERRY AMERICAS INC	8021-8155 New Hampshire,Saint Louis,MO,63123,USA	Lemay
1016262000	MERCY HOSPITAL ST LOUIS	615 S New Ballas Road,Saint Louis,MO,63141,USA	Lemay
1008643100	MERIDIAN MEDICAL TECHNOLOGIES	8030 Litzsinger Road,Saint Louis,MO,63144,USA	Lemay
1016264300	MISSOURI BAPTIST MEDICAL CENTER	3015 N Ballas Road,Saint Louis,MO,63131,USA	Lemay
1020766100	MISSOURI METALS LLC	9970 Page Avenue,Saint Louis,MO,63132,USA	Lemay
1016341900	MONSANTO COMPANY	800 N Lindbergh Boulevard,Saint Louis,MO,63141,USA	Lemay
1046096500	OBCORP LLC	1900-1910 Crossroads Industrial Court,Saint Louis,MO,63114,USA	Lemay
1020588900	PAULO PRODUCTS COMPANY	5711 W Park Avenue,Saint Louis,MO,63110,USA	Lemay
1008642401	PD INTERNATIONAL LLC	2629-35 S Hanley Road,Saint Louis,MO,63144,USA	Lemay
1016201600	PRECOAT METALS	4301 S Spring Avenue,Saint Louis,MO,63116,USA	Lemay
1020801700	RELIABLE BIOPHARMACEUTICAL CORP	1945 Walton Road,Saint Louis,MO,63114,USA	Lemay
1016347400	ROCK HILL QUARRIES COMPANY	1233 N Rock Hill Road,Saint Louis,MO,63124,USA	Lemay
1020764300	SCHNUCKS BAKERY	8590 Page Avenue,Saint Louis,MO,63114,USA	Lemay

MSD Facility Identifier	Facility Name	Physical Location	Treatment Area
1048568800	SPECGX LLC	385 Marshall Avenue,Webster Groves,MO,63119,USA	Lemay
1008598600	SSM HEALTH ST MARY'S HOSPITAL-ST LOUIS	6420 Clayton Road,Richmond Heights,MO,63117,USA	Lemay
1037380700	ST LOUIS CHILDREN'S HOSPITAL	1 Children's Place,Saint Louis,MO,63110,USA	Lemay
1024440800	STANDARD MACHINE & MFG CO	10014 Big Bend Boulevard,Saint Louis,MO,63122,USA	Lemay
1012048000	STERIS CORP ST LOUIS OPERATIONS	7373-7525 Page Avenue,Saint Louis,MO,63133,USA	Lemay
1008654100	SUNNEN PRODUCTS COMPANY	7910 Manchester Road,Saint Louis,MO,63143,USA	Lemay
1030906400	THEISS PLATING CORP	9314 Manchester Road,Saint Louis,MO,63119,USA	Lemay
1015960101	TRUCK TRANSPORT INC	119 E Loughborough Avenue,Saint Louis,MO,63111,USA	Lemay
1008544300	VA MEDICAL CENTER	5000 Koch Road,Saint Louis,MO,63125,USA	Lemay
1041067800	VI-JON LABORATORIES INC	8515 Page Avenue,Saint Louis,MO,63114,USA	Lemay
1024353000	WASHINGTON UNIVERSITY MEDICAL SCHOOL	660 S Euclid Avenue,Saint Louis,MO,63110,USA	Lemay