

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, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0101362

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 Grand Glaize Wastewater Treatment Plant  
Facility Address: 1000 Grand Glaize Parkway, Valley Park, MO 63088

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.

July 1, 2013  
Effective Date

May 1, 2015  
Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

December 31, 2017  
Expiration Date

John Madras, 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.

Three-cell flow equalization basin / two coarse bar screens / influent lift station / three mechanically cleaned fine bar screens / four grit basins / four primary clarifiers / five fine bubble aeration basins / six final clarifiers / disinfection by four chlorine contact tanks / dechlorination / cascade re-aeration / two sludge gravity thickeners / two sludge belt filter presses / sludge dewatering using chemicals for odor control / sludge disposal –contract or facility hauled to another treatment facility, landfilled, incinerated, reclaimed or composted

Design population equivalent is 210,000.  
Design flow is 21 million gallons per day.  
Actual flow is 17.8 million gallons per day.  
Design sludge production is 5,840 dry tons/year.

Legal Description: SW ¼, NW ¼, SW ¼, Sec. 16, T44N, R5E, St. Louis County  
UTM Coordinates: X=720377, Y=4269785

Receiving Stream: Meramec River (P)  
First Classified Stream and ID: Meramec River (P) (2183) 303(d) List  
USGS Basin & Sub-watershed No.: (07140102-1002)

Outfall #002 – Discharges 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 outfall

Legal Description: SE ¼, SE ¼, SE ¼, Sec. 8, T44N, R5E, St. Louis County  
UTM Coordinates: X= 720076, Y= 4271139  
Receiving Stream: Tributary to Grand Glaize Creek  
First Classified Stream and ID: Grand Glaize Creek (C) (2184) 303(d) List  
USGS Basin & Sub-watershed No.: (07140102-1002)

Outfall #004 – Stormwater outfall

Legal Description: SE ¼, SE ¼, SE ¼, Sec. 8, T44N, R5E, St. Louis County  
UTM Coordinates: X= 720136, Y= 4271163  
Receiving Stream: Tributary to Grand Glaize Creek  
First Classified Stream and ID: Grand Glaize Creek (C) (2184) 303(d) List  
USGS Basin & Sub-watershed No.: (07140102-1002)

Outfall #005 – Stormwater outfall

Legal Description: SE ¼, SE ¼, SE ¼, Sec. 8, T44N, R5E, St. Louis County  
UTM Coordinates: X= 720133, Y= 4271178  
Receiving Stream: Tributary to Grand Glaize Creek  
First Classified Stream and ID: Grand Glaize Creek (C) (2184) 303(d) List  
USGS Basin & Sub-watershed No.: (07140102-1002)

Outfall #006 – Stormwater outfall

Legal Description: NW ¼, SW ¼, SW ¼, Sec. 9, T44N, R5E, St. Louis County  
UTM Coordinates: X= 720344, Y= 4271273  
Receiving Stream: Tributary to Grand Glaize Creek  
First Classified Stream and ID: Grand Glaize Creek (C) (2184) 303(d) List  
USGS Basin & Sub-watershed No.: (07140102-1002)

<b>OUTFALL #001</b>	<b>TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>	PAGE NUMBER 3 of 9
		PERMIT NUMBER MO-0101362

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 **May 1, 2015**, 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 <sub>5</sub>	mg/L		40	25	once/weekday**	composite***
Total Suspended Solids	mg/L		45	30	once/weekday**	composite***
<i>E. coli</i> (Note 1, Page 5)	#/100mL		630	126	once/week	grab
pH – Units	SU	****		****	once/weekday**	grab
Ammonia as N (April 1 – Sept 30)	mg/L	15.8		3.3	twice/week	grab
(Oct 1 – March 31)		*		*		
Oil & Grease	mg/L	15		10	once/month	grab
Total Residual Chlorine (Note 2, Page 5)	µg/L	25.1 (130ML)		15.2 (130ML)	twice/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JUNE 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Lead, Total Recoverable	µg/L	*		*	once/quarter *****	grab
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MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2015.

- \* Monitoring requirement only.
- \*\* Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
- \*\*\* A 24-hour composite sample is composed of at least 48 aliquots (subsamples) collected at 30 minute or less intervals by an automatic sampling device.
- \*\*\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
- \*\*\*\*\* See table below for quarterly sampling.

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

OUTFALL #001	TABLE A-2. WHOLE EFFLUENT TOXICITY FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS		PAGE NUMBER 4 of 9	
			PERMIT NUMBER MO-0101362	
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 <u>May 1, 2015</u> , and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS	MONITORING REQUIREMENTS	
			MEASUREMENT FREQUENCY	SAMPLE TYPE
Acute Whole Effluent Toxicity	% Survival	See Special Condition #22	once/year	composite***
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2015</u> .				

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

Note 1 - Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

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

- (a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Disinfection is required during the recreational season from April 1 through October 31. Do not chlorinate during the non-recreational months.
- (c) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**
- (d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 µg/L” TRC.

**TABLE B.  
INFLUENT MONITORING REQUIREMENTS**

The facility is required to meet a removal efficiency of 85% or more as a monthly average. The monitoring requirements shall become effective on May 1, 2015, and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Carbonaceous Biochemical Oxygen Demand <sub>5</sub>	mg/L	once/month	composite***
Total Suspended Solids	mg/L	once/month	composite***
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JUNE 28, 2015</u> .			

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

### C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and March 1, 2015, and hereby incorporated as though fully set forth herein.

### D. SPECIAL CONDITIONS

1. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources has initiated stakeholder discussions on how to best incorporate these new criteria into the State's rules. A date for when this rule change will occur has not been determined. Also, refer to Section VI of this permit's factsheet for further information including estimated future effluent limits for this facility. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at <http://dnr.mo.gov/pubs/pub2481.htm>.
2. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
  - (d) Incorporate the requirement to develop a pretreatment program pursuant to 40 CFR 403.8(a) when the Director of the Water Protection Program determines that a pretreatment program is necessary due to any new introduction of pollutants into the Publicly Owned Treatment Works or any substantial change in the volume or character of pollutants being introduced.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
3. All outfalls must be clearly marked in the field.
4. The permittee has been designated a Level I Continuing Authority and shall comply with 10 CSR 20-6.010(3)(B) as an area-wide management authority.
5. Water Quality Standards
  - (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
  - (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
    - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
    - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
    - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
    - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
    - (5) There shall be no significant human health hazard from incidental contact with the water;
    - (6) There shall be no acute toxicity to livestock or wildlife watering;
    - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
    - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

D. SPECIAL CONDITIONS (continued)

6. 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.

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

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) The permittee shall use one-half of the detection limit for the non-detect result when calculating monthly averages.
- (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.

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)(i), 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 the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.

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.

D. SPECIAL CONDITIONS (continued)

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.
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. The berms of the flow equalization basin shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.
20. The facility shall ensure that adequate provisions are provided to minimize stormwater intrusion into the flow equalization basin from areas outside the berms. Stormwater from the adjacent Valley Park Levee is allowed to flow into the basin, along with any Meramec River floodwaters that overtop the flow equalization basin berms. The facility shall ensure that embankments are protected from erosion.
21. The permittee shall continue to implement the Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document: Storm Water Management For Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices, (Document number EPA 832-R-92-006) published by the United States Environmental Protection Agency (USEPA) in September 1992.

The SWPPP shall require the facility to continue the following requirements:

- (a) Assess all stormwater discharges associated with the facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
- (b) Listing of all specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter stormwater.
- (c) Have an individual to be responsible for environmental matters.
- (d) Provide training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.
- (e) Provide spill cleanup in the event that any stored pollutants are released in to the environment.
- (f) Avoid track-out from any building where materials are contained.
- (g) Maintain vegetation on all unpaved area to prevent erosion.

22. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	76%	once/year	24 hr. composite***	September

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

D. SPECIAL CONDITIONS (continued)

Dilution Series							
AEC%= 76%	100% Effluent	50% Effluent	25% Effluent	12.5% Effluent	6.25% Effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
  - (i) Chemical and physical analysis of the upstream control 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.
  - (ii) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.
  - (iii) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
- (2) The WET test will be considered a failure if mortality observed in effluent concentrations equal to or less than the AEC is significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available, synthetic laboratory control water may be used.
- (3) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (4) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (4) If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:  
 Note: Written request regarding single species multiple dilution accelerated testing will be address by the WATER PROTECTION PROGRAM on a case by case basis.
  - (i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
  - (ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (5) Follow-up tests do not negate an initial failed test.
- (6) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of availability of the third failed test.
- (7) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test: The permittee should contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact the WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of the automatic trigger or DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (8) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (9) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (10) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.

D. SPECIAL CONDITIONS (continued)

(b) Test Conditions

- (1) Test Type: Acute Static non-renewal
- (2) All tests, including repeat tests for previous failures, shall include both test species listed below unless approved by the department on a case by case basis.
- (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
- (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
- (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (6) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.
- (9) Whole-effluent-toxicity test shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms

23. 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. The permittee shall submit to the Department on or before **September 30<sup>th</sup> of each year** a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
- (a) 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;
  - (b) A summary of the status of Industrial User compliance over the reporting period;
  - (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
  - (d) Any other relevant information requested by the Department.

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) along with the application for renewal of this permit.

24. Sewer Extension

The Department has approved the construction permit program to regulate and approve construction of sanitary sewers, which are tributary to this wastewater treatment plant. This approval may be modified or revoked by the Department if the sewage collection, transportation, or treatment facilities reach their design limitations, if the 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 construction permit authority, 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. Plans and specifications for all projects which include a proposed by-pass must be submitted to the Department to provide record information for location and size of the by-pass.

An annual report on the sewer extension program must be submitted by January 28 of each year to the Missouri Department of Natural Resources' regional office. The report must list the name of the projects approved and the length of sewers and force mains constructed under the sewer extension program. Detailed project information and data including design flows and inspection records shall be available for review upon request. A summary of total flow at the treatment facility shall be included.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES  
FACT SHEET  
FOR THE PURPOSE OF MODIFICATION  
OF  
MO-0101362  
MSD GRAND GLAIZE WWTP**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution 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)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:**

Three-cell flow equalization basin / two coarse bar screens / influent lift station / three mechanically cleaned fine bar screens / four grit basins / four primary clarifiers / five fine bubble aeration basins / six final clarifiers / disinfection by four chlorine contact tanks / dechlorination / cascade re-aeration / two sludge gravity thickeners / two sludge belt filter presses / sludge dewatering using chemicals for odor control / sludge disposal –contract or facility hauled to another treatment facility, landfilled, incinerated, reclaimed or composted

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

- Yes.

- No.

Expiration Date: 06/30/2018

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	32.55	Secondary	Domestic
#003	Varies	BMPs	Stormwater
#004	Varies	BMPs	Stormwater
#005	Varies	BMPs	Stormwater
#006	Varies	BMPs	Stormwater

Modification Comments:

1. The permittee requested that the influent monitoring sampling and reporting frequency be reduced. The influent monitoring sampling and reporting frequency has been revised from once per week to once per month. This adjusted frequency will still allow sufficient data to determine removal efficiency of the facility.
2. The permittee requested revision of Special Condition #11 to address the existing annual reporting date required in the permittee's 2012 Federal Consent Decree. The Department has revised the condition to reflect the correct date. This condition does not require an additional report, but rather a summary within the annual report on the permittee's district-wide efforts to reduce Inflow and Infiltration (I&I) in the permittee's collection system.
3. The permittee requested that Special Condition #17(a)(6) be revised to state that the permittee must submit failed WET test results within 14 calendar days of the availability of test results. The Department has revised this language accordingly, now included in Special Condition #24(a)(6). This new language takes into account mailing time from the lab to the permittee.
4. The permittee requested that the definition of a bypass be revised to reflect the court ruling of Iowa League of Cities v. Environmental Protection Agency, 711 F.3d 844 (8<sup>th</sup> Cir. 2013), which concluded that blending is lawful under the Clean Water Act (CWA). The language in Special Condition #12 has been updated.
5. The permittee has requested that Special Condition #17(a)(11) be removed from the permit. The Department understands the permittee's stance that this condition may be redundant with consideration of the annual WET test reporting requirement in Tables A and B and Special Condition #17(a)(6). Therefore, the Department has removed portion from Special Condition #22, which is also consistent with other MSD permits. However, the permittee is still required to comply with the previously stated conditions and must submit all WET test results, including all failed and passed tests. The removal of this condition does not exempt the permittee from submitting these results.
6. The permit writer added Special Condition #23. This condition is the Pretreatment condition that the facility is required to have in the permit.
7. The permit writer added Special Condition #24. This condition is the construction permit program condition that the facility is required to have in the permit.
8. Effluent limits for Ammonia were revised based on current effluent data as the previous permit limits were incorrectly calculated as non-detects were not properly accounted for.
9. Effluent limits for Total Residual Chlorine were revised based on current effluent data as the previous permit limits were incorrectly calculated as the permit writer allowed for a background concentration of 0.01 µg/L. In addition, the permittee requested that the Department calculate limits based on an n=8, to represent the number of samples taken per month.
10. Monitoring requirements for Total Recoverable Lead were added based on current effluent data as the previous permit writer failed to convert the units from mg/L to µg/L in the Reasonable Potential Analysis. The facility also provided updated effluent testing data with revised detection limits for the sample results. The facility does not show a reasonable potential, however monitoring only requirements were added. This data will be reviewed at the next permit renewal.
11. Total Recoverable Cadmium and Dissolved Chromium VI were removed from the permit as the discovery of new data and the review of DMRs submitted by the facility showed that no reasonable potential to violate Water Quality Standards.
12. The AEC% for the Acute WET test was revised as the previous permit writer used an incorrect value for the design flow in cfs for the facility.
13. Special Condition #4 (previously Special Condition #3) has been revised to more clearly reflect the requirements of the Continuing Authority required by Department regulations.
14. Standard Conditions Part I & III were updated.
15. Special Condition #6 was updated to the appropriate language.
16. Special Condition #20 was added to the permit.
17. Changed the expiration date of the permit to December 31, 2017.
18. pH was changed to 6.0 to 9.0 SU.

The following items were addressed in the appeal and petition document but could not be revised in the permit for the reasons addressed below:

1. The permittee requested a revised Affordability Analysis be conducted, stating that the Department failed to comply with the affordability statute. The permittee did not mention which parameters in the permit they are considering new or expanded. The Department has considered all the parameters in Table A of the permit and has concluded that based on the Discharge Monitoring Report (DMR) data from the past five years, the facility has been consistently complying with all concentrations listed in that table. Based on a Reasonable Potential Analysis (RPA), the TRC limits were calculated to a less stringent concentration than the previous permit. Therefore, the Department cannot consider this a new or expanded requirement that would cause financial burden to the community and cannot consider previous permit violations in the finding.
2. Additionally, the Department can conclude based on the performance history demonstration in the DMRs that the facility is capable of meeting all effluent limitations listed in Table A. Therefore, the Department finds that no additional installation of treatment technology is required to comply with the final effluent limitations and no additional or more meticulous operations and maintenance of the facility is required to comply with the final effluent limitations. No additional financial burden has been placed on the permittee or the community. The Department has concluded that there is nothing new to afford. The DMR data can be viewed upon request.

**Part II – Operator Certification Requirements**

- This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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
- Public Sewer District
- County
- Public Water Supply Districts
- Private Sewer Company regulated by the Public Service Commission
- State agency
- Federal agency

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: Todd V. Heller  
 Certification Number: 3882  
 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.

- This facility is not required to have a certified operator.

**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**

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(4)].

**RECEIVING STREAM(S) TABLE: OUTFALL #001**

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Meramec River	P	2183	IRR, LWV, AQL, HHP, WBC-A, SCR, DWS, IND,	07140102-1002	0

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

**RECEIVING STREAM(S) LOW-FLOW VALUES:**

RECEIVING STREAM (C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Meramec River (P)	403	421	483

**MIXING CONSIDERATIONS**

**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
100.75	105.25	120.75	10.075	10.525	12.075

**RECEIVING STREAM(S) TABLE: OUTFALLS #003, #004, #005, & #006**

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Grand Glaize Creek	--	--	General Criteria	07140102-1002	#003 – ~0.2 #004 – ~0.2 #005 – ~0.2 #006 – ~0.4

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

**RECEIVING STREAM(S) LOW-FLOW VALUES:**

RECEIVING STREAM (C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Grand Glaize Creek	-	-	-

**MIXING CONSIDERATIONS**

**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
100.75	105.25	120.75	10.075	10.525	12.075

**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 discharges 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, and has submitted an alternative evaluation.

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

**ANTI-BACKSLIDING:**

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

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

- 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 was revised to 6.0 – 9.0 as that range is considered protective of the water quality standard due to the buffering capacity of the mixing zone, Ammonia limits were recalculated, and Temperature, Total Recoverable Cadmium, and Dissolved Chromium VI was removed as the parameters did not show a reasonable potential to violate Water Quality Standards.

- The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b). The AEC% for the Acute WET test was incorrectly calculated in the previous permit.

**ANTIDegradation:**

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- 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.

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

**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 land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan.

- Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc.

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

**COMPLIANCE AND ENFORCEMENT:**

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

- The facility is currently under enforcement action.

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

**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.

- The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved 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)(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**.

- A RPA was not conducted for this facility.

**REMOVAL EFFICIENCY:**

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

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

- Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

- Influent monitoring is not being required to determine percent removal.

**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.

- In accordance with Missouri RSMo §644.026.1.(15) and 40 CFR Part 122.41(e), the permittee is required to develop and/or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance. In addition, the Department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002). The CMOM identifies some of the criteria used by the EPA to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

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

**SCHEDULE OF COMPLIANCE (SOC):**

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 October 25, 2012 the Department issued a 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 an affordability analysis.

- The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)].

- This permit does not contain a SOC.

**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.

- A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate BMPs specific to materials located on site and exposed to stormwater and the physical conditions of the site, and provide for maintenance and adherence to the plan.

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

**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 drafted under premises of a petition for variance.

- 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:

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

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

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

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

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

- Wasteload allocations were not calculated.

**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 including model was submitted to the Department.

- 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.

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<sub>5</sub> 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<sub>3</sub>)
- Facility is a municipality with a Design Flow  $\geq$  22,500 gpd.
- Other – please justify.

**40 CFR 122.41(M) - BYPASSES:**

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(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.

- Bypasses occur or have occurred at this facility.
  - The permittee has meet the criteria as established in 40 CFR 122.41(m)(4)(i)(A), (B), and (C).
  - Outfall #002 is no longer authorized to discharge as it is a Bypass.

**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

- Meramec River is listed on the 2012 Missouri 303(d) List for E. coli and Lead.
  - This facility is not considered to be a source of Lead or considered to contribute to the impairment of the Meramec River regarding Lead.
  - It is unknown at this time if the facility is a source of the above listed pollutant(s) or considered to contribute to the impairment of Meramec River. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.
  - This facility is considered to be a source of or has the potential to contribute to the E. coli. Once a TMDL is developed, the permit will be modified to include WLAs from the TMDL.
- This facility does not discharge to a 303(d) listed stream.

## **Part VI –2013 Water Quality Criteria for Ammonia**

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Current effluent limitations in this permit are:

Summer – 15.8 mg/L daily maximum, 3.3 mg/L monthly average.

Winter – Monitoring Only

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this that discharges to a receiving stream with the mixing consideration listed in Part IV of the Fact Sheet will be:

Summer – 4.4 mg/L daily maximum, 1.7 mg/L monthly average.

Winter – 10.6 mg/L daily maximum, 4.1 mg/L monthly average.

Actual effluent limits will depend in part on the actual performance of the facility.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

## Part VII – 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)]
- Special Stream [10 CSR 20-7.015(6)]
- Subsurface Water [10 CSR 20-7.015(7)]
- All Other Waters [10 CSR 20-7.015(8)]

### OUTFALL #001 – MAIN FACILITY OUTFALL

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

### EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	MGD	1	*		*	No	*/*
CBOD <sub>5</sub>	mg/L	1		40	25	No	40/25
TSS	mg/L	1		45	30	No	45/30
pH	SU	1	6.0 – 9.0				6.5 – 9.0
Ammonia as N (April 1 – Sept 30)	mg/L	2, 3, 5	15.8		3.3	Yes	15.9/3.9
Ammonia as N (Oct 1 – March 31)	mg/L	2, 3, 5	*		*	Yes	16.0/3.1
Escherichia coli	**	1, 3		630	126	No	630/126
Chlorine, Total Residual	µg/L	1, 3	25.1		15.2	Yes	38/21
Oil & Grease (mg/L)	mg/L	1, 3	15		10	No	15/10
Lead, Total Recoverable	µg/L	2, 3	*		*	Yes	***
Acute Whole Effluent Toxicity Test	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				

\* - Monitoring requirement only.

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

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

#### **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

### 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 (BOD<sub>5</sub>).**

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

- **Total Suspended Solids (TSS).**

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

- **pH.** -6.0-9.0 SU. Technology based limits [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.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3] default pH 7.8 SU. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA:  $C_e = ((32.55 + 120.75)1.5 - (120.75 * 0.01))/32.55$   
 $C_e = 7.03 \text{ mg/L}$

Acute WLA:  $C_e = ((32.55 + 10.075)12.1 - (10.075 * 0.01))/32.55$   
 $C_e = 15.84 \text{ mg/L}$

$LTA_c = 7.03 \text{ mg/L} (0.528) = 3.71 \text{ mg/L}$

[CV = 1.64, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 15.84 \text{ mg/L} (0.1348) = 2.135 \text{ mg/L}$

[CV = 1.64, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL =  $2.135 \text{ mg/L} (7.42) = 15.8 \text{ mg/L}$

[CV = 1.64, 99<sup>th</sup> Percentile]

AML =  $2.135 \text{ mg/L} (1.55) = 3.3 \text{ mg/L}$

[CV = 1.64, 95<sup>th</sup> Percentile, n = 30]

Winter: October 1 – March 31 – Monitoring requirement only. The facility did not have a reasonable potential to violate Water Quality Standards for Ammonia during the winter season. This data will be reviewed at the next permit cycle to determine if the facility has a potential to violate Water Quality Standards.

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 mL as a geometric mean and Weekly Average of 630 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).

- **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:  $C_e = ((32.55 + 105.25)10 - (105.25 * 0.0))/32.55$   
 $C_e = 42.33 \text{ µg/L}$

Acute WLA:  $C_e = ((32.55 + 10.525)19 - (10.525 * 0.0))/32.55$   
 $C_e = 25.14 \text{ µg/L}$

$LTA_c = 42.33 (0.771) = 32.64 \text{ µg/L}$

[CV = 0.33, 99<sup>th</sup> Percentile]

$LTA_a = 25.14 (0.5028) = 12.64 \text{ µg/L}$

[CV = 0.33, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL =  $12.64 (1.989) = 25.1 \text{ µg/L}$

[CV = 0.33, 99<sup>th</sup> Percentile]

AML =  $12.64 (1.20) = 15.2 \text{ µg/L}$

[CV = 0.33, 95<sup>th</sup> Percentile, n = 8]

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

- **Parameters Removed.** Temperature, Total Recoverable Cadmium, and Dissolved Chromium VI was removed as the facility did not show a reasonable potential to violate Water Quality Standards for these parameters.

**Metals**

- **Lead, Total Recoverable.** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility’s discharge to exceed water quality standards for Lead (Total Recoverable). The background concentration for average total recoverable Lead in the receiving stream between 2000 and 2012 calculated from USGS data is 14.04 µg/L.

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

Acute

**No less than ONCE/YEAR:**

- Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
- Facility continuously or routinely exceeds their design flow.
- Facility exceeds its design population equivalent (PE) for BOD<sub>5</sub> whether or not its design flow is being exceeded.
- Facility has Water Quality-based effluent limitations for toxic substances (other than NH<sub>3</sub>).

Acute AEC% =  $\left( \frac{\text{design flow}_{cfs} + \text{ZID}_{7Q10}}{\text{design flow}_{cfs}} \right)^{-1} \times 100 = \#\%$

Meramec River (P): Acute AEC% =  $\left( \frac{32.55 + 10.525}{32.55} \right)^{-1} \times 100 = 76\%$

**Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow	once/day	once/month
CBOD <sub>5</sub>	once/weekday	once/month
TSS	once/weekday	once/month
pH	once/weekday	once/month
Ammonia as N	twice/week	once/month
<i>E. coli</i>	once/week	once/month
Total Residual Chlorine	twice/week	once/month
Oil & Grease	once/month	once/month
Lead, TR	once/quarter	once/quarter
Acute Whole Effluent Toxicity	once/year	once/year

**Sampling Frequency Justification:**

Sampling and Reporting Frequency was retained from previous permit.

**Sampling Type Justification**

As per 10 CSR 20-7.015, BOD<sub>5</sub>, TSS, and WET test samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, Ammonia as N, *E. coli*, TRC, and Oil & Grease. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia and TRC, and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia and Oil & Grease must be immediately preserved with acid, these samples are to be collected as a grab.

## **Part VIII – Cost Analysis for Compliance**

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

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

**Cost Analysis for Compliance** – MSD waived the requirement for an affordability finding.

## **Part IX – 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. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

### **PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The Public Notice period for this operating permit was from March 27, 2015 to April 27, 2015. MSD submitted a comment regarding their waiver of the requirement for an affordability finding.

**DATE OF FACT SHEET:** MARCH 11, 2015

**COMPLETED BY:**

**BRANT FARRIS, ENVIRONMENTAL SPECIALIST III**  
**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
**WATER PROTECTION PROGRAM**  
**OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT**  
**(660) 385-8061**  
**brant.farris@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
<b>EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:</b>		
Missouri or Mississippi River	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	3
<b>PRELIMINARY TREATMENT - Headworks</b>		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
<b>PRIMARY TREATMENT</b>		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	
Chemical addition (except chlorine, enzymes)	4	
<b>REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)</b>		
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
<b>ALTERNATIVE FATE OF EFFLUENT</b>		
Direct reuse or recycle of effluent	6	
Land Disposal – low rate	3	
High rate	5	
Overland flow	4	
<b>Total from page ONE (1)</b>	----	47

**APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):**

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
<b>VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)</b>		
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	
<b>SECONDARY TREATMENT</b>		
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	5
Aerated lagoon	8	
Advanced Waste Treatment Polishing Pond	2	
Chemical/physical – without secondary	15	
Chemical/physical – following secondary	10	10
Biological or chemical/biological	12	
Carbon regeneration	4	
<b>DISINFECTION</b>		
Chlorination or comparable	5	5
Dechlorination	2	2
On-site generation of disinfectant (except UV light)	5	
UV light	4	
<b>SOLIDS HANDLING - SLUDGE</b>		
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	
Land application	6	6
Total from page <b>TWO (2)</b>	----	58
Total from page <b>ONE (1)</b>	---	47
Grand Total	---	105

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

**APPENDIX – RPA RESULTS:**

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	31.48	1.5	8.76	29.00	9.6/0.078	1.64	4.29	YES
Total Ammonia as Nitrogen (Winter) mg/L	12.1	4.65	3.1	1.30	30.00	1.76/0.01	1.29	3.46	NO
Cadmium, Total Recoverable	8.2	0.14	0.4	0.09	16.00	<0.3/<0.2	0.18	1.06	NO
Copper, Total Recoverable	22.0	21.13	14.1	6.61	12.00	18/<9	0.69	1.55	NO
Lead, Total Recoverable	150.8	1.82	5.9	0.57	21.00	<5/<0.9	0.92	0.96	NO
Chromium VI, Dissolved	15.0	4.06	10.0	1.27	15.00	<10/<3	0.18	1.08	NO
Mercury, Total Recoverable	2.0	0.42	0.5	0.13	12.00	0.36/<0.15	0.41	1.54	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.



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(a)(1);
    - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
    - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
  - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
    - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
    - ii. Any upset which exceeds any effluent limitation in the permit.
    - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
  - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
  4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
  5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
  6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
  7. **Discharge Monitoring Reports.**
    - a. Monitoring results shall be reported at the intervals specified in the permit.
    - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
    - c. Monitoring results shall be reported to the Department no later than the 28<sup>th</sup> day of the month following the end of the reporting period.
- b. Notice.
    - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
    - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
  - c. Prohibition of bypass.
    - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
      1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      3. The permittee submitted notices as required under paragraph 2. b. of this section.
    - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
    - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
    - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      - ii. The permitted facility was at the time being properly operated; and
      - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
    - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

## Section C – Bypass/Upset Requirements

1. **Definitions.**
  - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
  - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
  - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
  - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

## Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
  - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
  - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittee with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
  - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
  - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
  - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
  - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
  - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
  - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.



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

**1. Definitions**

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

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

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

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

**2. Identification of Industrial Discharges**

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

**3. Application Information**

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

**4. Notice to the Department**

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

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

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

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

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**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 Act 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 <sup>1</sup>	
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

<sup>1</sup> 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 <sup>1</sup>	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

<sup>1</sup> 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 <sup>1</sup>	Annual	Total <sup>1</sup>	Annual	Total <sup>1</sup>
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

<sup>1</sup> 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 <sup>1</sup>

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

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

<sup>2</sup> 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.

<sup>3</sup> Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

<sup>4</sup> Case by case review. Concentrations in sludge should not exceed the 95<sup>th</sup> 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<sup>1</sup>).  
<sup>1</sup>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:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$

<sup>1</sup> 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  $\geq 70\%$  vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
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  $\geq 70\%$  vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
  - b. 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

- 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 <sup>1</sup>	Nitrogen PAN <sup>2</sup>	Priority Pollutants and TCLP <sup>3</sup>
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	-- <sup>4</sup>
10,001 +	1 per week	1 per week	1 per day	-- <sup>4</sup>

<sup>1</sup> Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

- 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.
- 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.
- 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

- 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.
- Reporting period
  - By January 28<sup>th</sup> 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.
  - 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.
- Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
- Reports shall be submitted as follows:

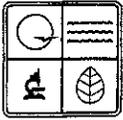
Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

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

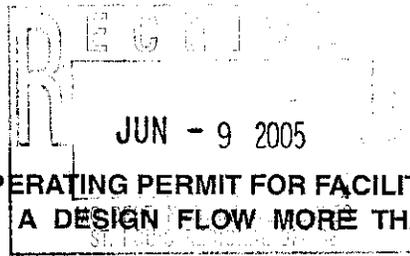
EPA Region VII  
Water Compliance Branch (WACM)  
Sludge Coordinator  
11201 Renner Blvd.  
Lenexa, KS 66219

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.



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
 WATER PROTECTION AND SOIL CONSERVATION DIVISION  
 WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH  
 P.O. BOX 176, JEFFERSON CITY, MO 65102



**FORM B2 - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY**

FACILITY NAME <i>MSD- Grand Glaize Wastewater Treatment Facility</i>	PERMIT NO. <i>MO- 0101362</i>
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**APPLICATION OVERVIEW**

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

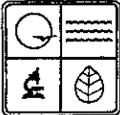
**BASIC APPLICATION INFORMATION**

- 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 (Certification).

**SUPPLEMENTAL APPLICATION INFORMATION**

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the US 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 1.0 mgd.
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 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 1.0 mgd.
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and RCRA/CERCLA Wastes. A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives a RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:
  - 1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter 1, Subchapter N (see instructions); and
  - 2. Any other industrial user that:
    - a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
    - b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
    - c. Is designated as an SIU by the control authority.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

**ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)**



**REISSUE**

**FORM B2 - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH 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

**PART A - BASIC APPLICATION INFORMATION**

1.00 THIS APPLICATION IS FOR

a construction permit     Federal/State Funded Project     an operating permit renewal: permit no. MO-0101362    Expiration date: 1-11-06

an operating permit for a new or unpermitted facility     an operating permit modification    CATS

(See instructions for appropriate fee to be submitted with application)    Reason: \_\_\_\_\_

1.10 IS THIS A NEW FACILITY CONSTRUCTED UNDER A MISSOURI CONSTRUCTION PERMIT?    IF YES, PLEASE PROVIDE MISSOURI CONSTRUCTION PERMIT NUMBER

YES     NO

2.00 FACILITY

NAME <u>MSD-Grand GLAIZE WASTEWATER TREATMENT</u> <sup>Facility</sup>	TELEPHONE NUMBER <u>636-861-6700</u>
ADDRESS (PHYSICAL) <u>1000 GRAND GLAIZE PKWY VALLEY PARK</u>	CITY <u>VALLEY PARK</u>
STATE <u>MO</u>	ZIP CODE <u>63088</u>

2.10 LEGAL DESCRIPTION (PLANT SITE)

1/4 NW 1/4 SW 1/4 SW SEC. 16 T 44N R 5E COUNTY St. Louis

3.00 OWNER

NAME <u>METRO. St. Louis SEWER Dist.</u>	EMAIL ADDRESS <u>theller@stlmsd-com</u>	TELEPHONE NUMBER <u>636-861-6700</u>
ADDRESS <u>1000 Grand GLAIZE PKWY</u>	CITY <u>VALLEY PARK</u>	STATE <u>MO</u>
		ZIP CODE <u>63088</u>

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

NAME <u>SAME As Owner</u>	TELEPHONE NUMBER
ADDRESS	CITY
	STATE
	ZIP CODE

5.00 OPERATOR

NAME <u>STEPHEN HARRISON</u>	CERTIFICATE NUMBER (IF APPLICABLE) <u>A-4125</u>	TELEPHONE NUMBER <u>636-861-6704</u>
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6.00 FACILITY CONTACT

NAME <u>TODD V. HELLER</u>	TITLE <u>OPERATIONS Division Manager</u>	TELEPHONE NUMBER <u>636-861-6701</u>
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7.00 ADDITIONAL FACILITY INFORMATION

7.10 BRIEF DESCRIPTION OF FACILITIES

SEE ATTACHMENT - 7.10

**SEE ATTACHMENTS 7.15-A + 7.15-B**

7.15 TOPOGRAPHIC MAP. ATTACH TO THIS APPLICATION A 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. (YOU MAY SUBMIT MORE THAN ONE MAP IF ONE MAP DOES NOT SHOW THE ENTIRE AREA.)

- The area surrounding the treatment plant, including all unit processes.
- The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- The actual point of discharge.
- Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

7.20 PROCESS FLOW DIAGRAM OR SCHEMATIC. PROVIDE A DIAGRAM SHOWING THE PROCESSES OF THE TREATMENT PLANT. ALSO, PROVIDE A WATER BALANCE SHOWING ALL TREATMENT UNITS, INCLUDING DISINFECTION (E.G. CHLORINATION AND DECHLORINATION). THE WATER BALANCE MUST SHOW DAILY AVERAGE FLOW RATES AT INFLUENT AND DISCHARGE POINTS AND APPROXIMATE DAILY FLOW RATES BETWEEN TREATMENT UNITS. INCLUDE A BRIEF NARRATIVE DESCRIPTION OF THE DIAGRAM.

**SEE ATTACHMENTS 7.2 SHEET-1 + SHEET-2**

7.25 FACILITY SIC CODE    DISCHARGE SIC CODE

4952    4952

7.30 NUMBER OF SEPARATE DISCHARGE POINTS

6 - 001-Plant effluent ; 002-Stormwater lagoon ; 003,004,005,006 outfalls <sup>stormwater</sup>

## 7.10 Brief Description of Facilities

### Outfall #001-POTW

Oxidation ditch, secondary clarifiers, chlorination, dechlorination, sludge thickening, sludge dewatering, sludge disposal: incineration at MSD-Bissell or Lemay Plant; or contract haul and disposal at landfill, compost facility, or land application. Polymer used for sludge dewatering, Ferrous chloride used for odor control.

Design Population – 160,000

Design Flow – 16 MGD; Actual flow – 16.8 MGD

Design Sludge Production is 3,360 dry tons/year

### Outfall 002-POTW

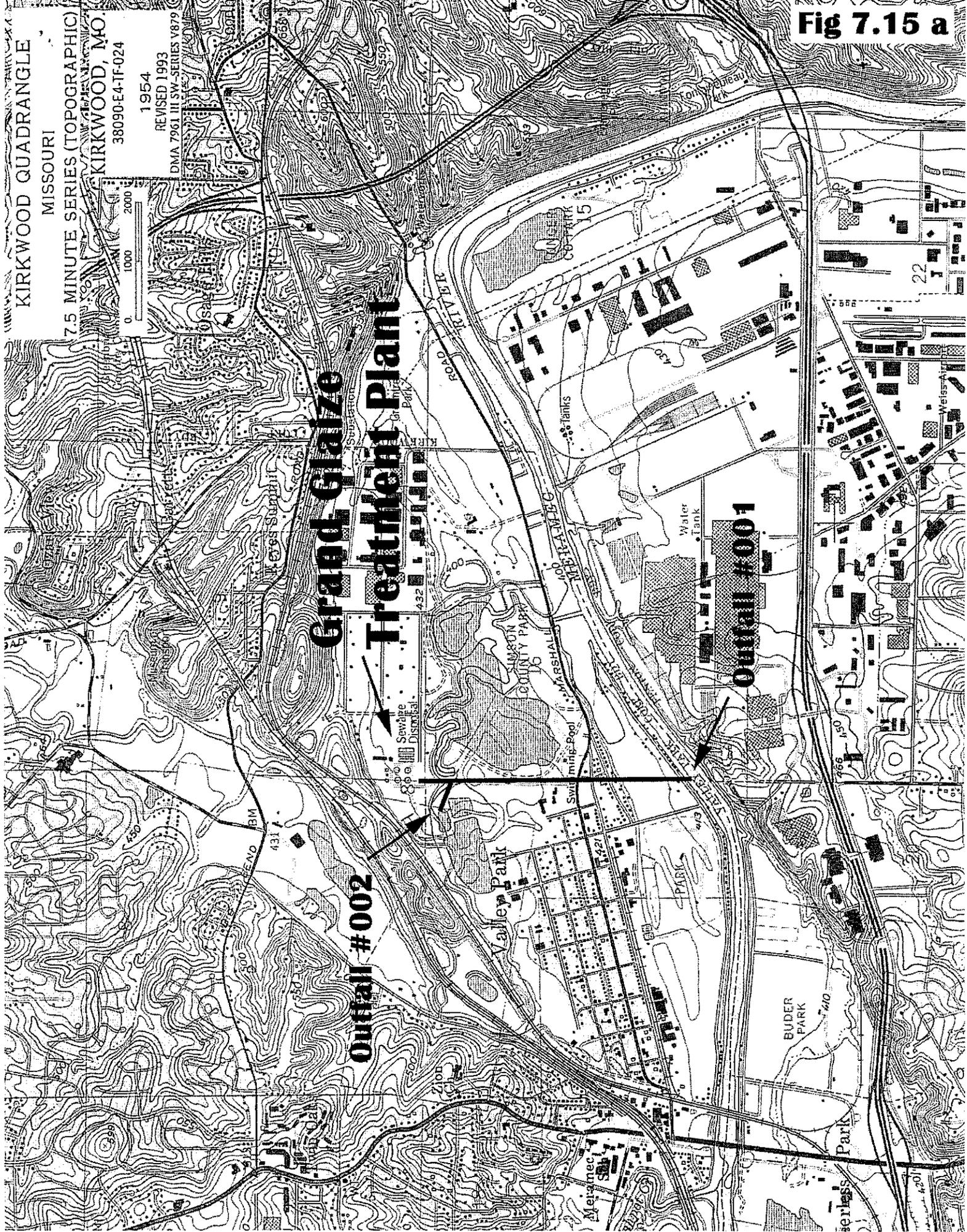
Three cell lagoon/stormwater retention/sludge retained in lagoon

Stormwater bled back to the treatment plant after influent flow recedes.

Actual flow - .002 MGD

Outfalls - #003, #004, #005, #006  
Stormwater Runoff/no treatment

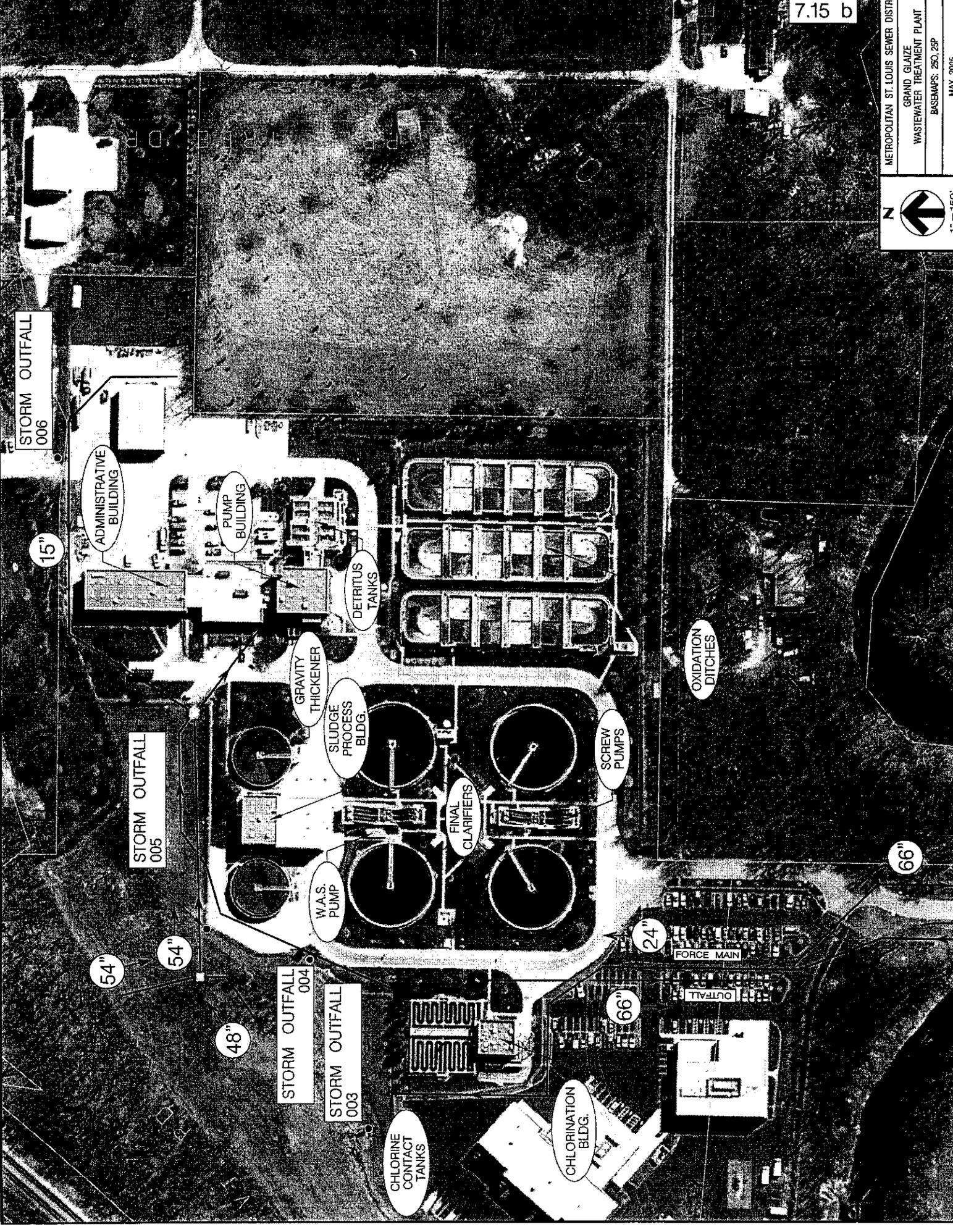
Fig 7.15 a



7.15 b

METROPOLITAN ST. LOUIS SEWER DISTRICT  
 GRAND GRAZE  
 WASTEWATER TREATMENT PLANT  
 BASEMAPS: 250, 25P  
 MAY, 2005

1" = 150'



STORM OUTFALL 006

15"

ADMINISTRATIVE BUILDING

PUMP BUILDING

DETRITUS TANKS

GRAVITY THICKENER

SLUDGE PROCESS BLDG.

W.S. PUMP

FINAL CLARIFIERS

SCREW PUMPS

STORM OUTFALL 005

54"

54"

48"

STORM OUTFALL 004

STORM OUTFALL 003

CHLORINE CONTACT TANKS

CHLORINATION BLDG.

66"

24"

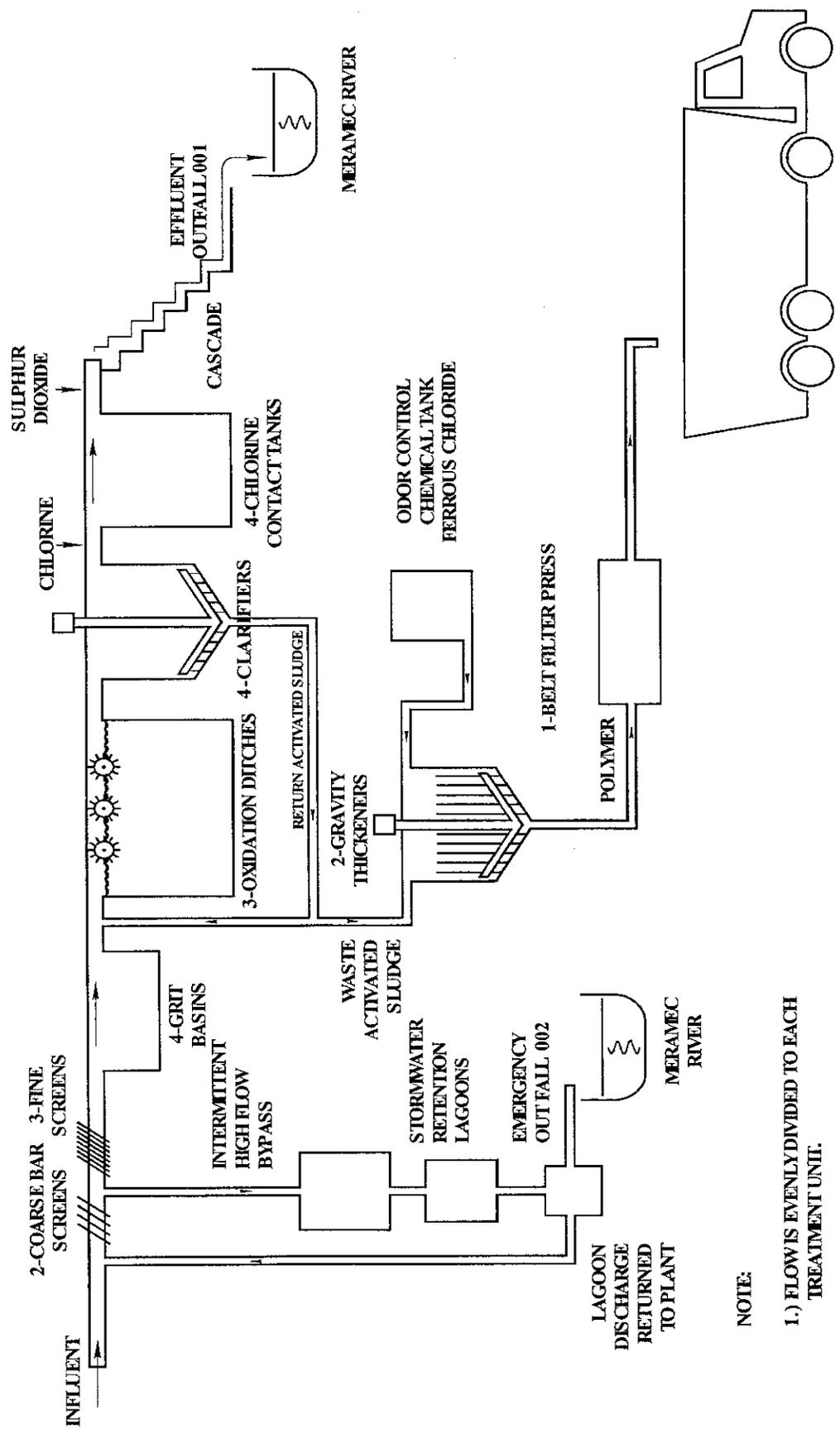
FORCE MAIN

OUTFALL

66"

OXIDATION DITCHES

# PROCESS FLOW DIAGRAM GRAND GLAIZE PLANT



- NOTE:**
- 1.) FLOW IS EVENLY DIVIDED TO EACH TREATMENT UNIT.
  - 2.) CURRENTLY, ONLY ONE GRAVITY THICKENER IS USED

## METROPOLITAN ST. LOUIS SEWER DISTRICT

## GRAND GLAIZE SEWAGE TREATMENT PLANT

The Metropolitan St. Louis Sewer District's Grand Glaize Sewage Treatment Plant was constructed in 1986 as a 16 MGD secondary facility. The unit processes used in the wastewater flow stream include: coarse and fine screening, detritus tanks, oxidation ditches, secondary clarification, chlorination and dechlorination. The sludge treatment unit processes consist of a 2 meter belt filter press.

The raw sewage flow passes through 2-coarse bar screens, with 2" clear openings. The raw sewage flow is lifted into the treatment plant by six pumps each with a capacity of 13.2 MGD. The six variable speed pumps are re controlled by the level in the raw sewage wet well. The pumped flow passes through three mechanically cleaned bar screens with 3/4" clear openings. Grit is removed from the raw sewage flow by four detritus tanks each 20 ft. by 20 ft.; three oxidation ditches, are operated in parallel mode. The ditches are each equipped with ten 50 HP brush aerators. Flow from the oxidation ditches is split into four 100 ft. diameter secondary clarifiers. Return activated sludge is pumped by four screw lift pumps each with a capacity of 10 MGD. Waste activated sludge is pumped with five, 550 gpm submersible pumps. Chlorine is used to disinfect the final effluent in four chlorine contact tanks. Sulphur dioxide is used to dechlorinate the final effluent prior to discharge into the Meramec River. Two gravity thickeners are used for thickening sludge. Thickened sludge is fed to a 2-meter belt filter press. Dewatered sludge is either landfilled, incinerated or composted. Ferrous chloride is mixed with waste activated sludge in the gravity thickeners to control odors released by the dewatering process.

7.00 ADDITIONAL FACILITY INFORMATION (CONTINUED)

7.35 NUMBER OF PERSONS PRESENTLY CONNECTED OR POPULATION EQUIVALENT <b>168,000</b>		DESIGN PE <b>160,000</b>	
NUMBER OF UNITS PRESENTLY CONNECTED			
HOMES	APARTMENTS	TRAILERS	OTHER
TOTAL DESIGN FLOW (ALL OUTFALLS) <b>16 MGD</b>		ACTUAL FLOW <b>16.8 MGD</b>	
7.40 DOES ANY BYPASSING OCCUR ANYWHERE IN THE COLLECTION SYSTEM OR AT THE TREATMENT FACILITY? (IF YES, ATTACH EXPLANATION) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <b>Any time the capacity of the system is exceeded due to factors beyond</b>			
7.50 IS INDUSTRIAL WASTE DISCHARGED TO THE FACILITY IDENTIFIED IN ITEM 2? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <b>OUR CONTROL.</b>			
7.60 WILL THE DISCHARGE BE CONTINUOUS THROUGH THE YEAR? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
A. DISCHARGE WILL OCCUR DURING THE FOLLOWING MONTHS		B. HOW MANY DAYS OF THE WEEK WILL THE DISCHARGE OCCUR?	
7.70 IS WASTEWATER LAND APPLIED? (IF YES, ATTACH FORM I) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		7.80 DOES THIS FACILITY DISCHARGE TO A LOSING STREAM OR SINKHOLE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
7.90 HAS A WASTE LOAD ALLOCATION STUDY BEEN COMPLETED FOR THIS FACILITY? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
7.95 LIST ALL PERMIT VIOLATIONS, INCLUDING EFFLUENT LIMIT EXCEEDANCES IN THE LAST 5 YEARS. ATTACH A SEPARATE SHEET IF NECESSARY. IF NONE, WRITE NONE. <b>SEE ATTACHMENT 7.95</b>			
<b>8.00 SLUDGE HANDLING, USE AND DISPOSAL</b>			
8.10 IS THE SLUDGE A HAZARDOUS WASTE AS DEFINED BY 10 CSR 25? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
8.20 SLUDGE PRODUCTION, INCLUDING SLUDGE RECEIVED FROM OTHERS		DESIGN DRY TONS/YEAR <b>3,360</b>	
		ACTUAL DRY TONS/YEAR <b>3,647</b>	
8.30 CAPACITY OF SLUDGE HOLDING STRUCTURES			
8.31 SLUDGE STORAGE PROVIDED _____ CUBIC FEET _____ DAYS OF STORAGE _____ AVERAGE PERCENT SOLIDS OF SLUDGE. <input checked="" type="checkbox"/> NO SLUDGE STORAGE IS PROVIDED.			
8.32 TYPE OF STORAGE <input type="checkbox"/> HOLDING TANK <input type="checkbox"/> BASIN <input type="checkbox"/> BUILDING <input type="checkbox"/> CONCRETE PAD <input type="checkbox"/> OTHER (DESCRIBE) _____			
8.40 SLUDGE TREATMENT <b>DeWatered with belt filter Press</b> <input type="checkbox"/> ANAEROBIC DIGESTER <input type="checkbox"/> STORAGE TANK <input type="checkbox"/> LIME STABILIZATION <input type="checkbox"/> LAGOON <input type="checkbox"/> AEROBIC DIGESTER <input type="checkbox"/> AIR OR HEAT DRYING <input checked="" type="checkbox"/> COMPOSTING <input type="checkbox"/> OTHER (ATTACH DESCRIPTION)			
8.50 SLUDGE USE OR DISPOSAL <input type="checkbox"/> LAND APPLICATION <input checked="" type="checkbox"/> CONTRACT HAULER <input checked="" type="checkbox"/> HAULED TO ANOTHER TREATMENT FACILITY <input checked="" type="checkbox"/> SOLID WASTE LANDFILL <input type="checkbox"/> SURFACE DISPOSAL (SLUDGE DISPOSAL LAGOON, SLUDGE HELD FOR MORE THAN 2 YEARS) <input type="checkbox"/> INCINERATION <input checked="" type="checkbox"/> OTHER (ATTACH EXPLANATION SHEET) <b>SEE ATTACHMENT - 8.50</b>			
8.60 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY			
NAME <b>See ATTACHMENT - 8.60 + 8.70</b>			
ADDRESS		CITY	STATE
			ZIP CODE
CONTACT PERSON		TELEPHONE NUMBER	PERMIT NO. MO-
8.70 SLUDGE USE OR DISPOSAL FACILITY			
<input type="checkbox"/> BY APPLICANT <input type="checkbox"/> BY OTHERS (COMPLETE BELOW)			
NAME <b>See ATTACHMENT - 8.60 + 8.70</b>			
ADDRESS		CITY	STATE
			ZIP CODE
CONTACT PERSON		TELEPHONE NUMBER	PERMIT NO. MO-
8.80 DOES THE SLUDGE OR BIOSOLIDS DISPOSAL COMPLY WITH FEDERAL SLUDGE REGULATIONS UNDER 40 CFR 503? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (ATTACH EXPLANATION)			
<b>9.00 DOWNSTREAM LANDOWNER(S) (ATTACH ADDITIONAL SHEETS AS NECESSARY.)</b>			
NAME <b>SEE ATTACHMENT - 9.0</b>			
ADDRESS		CITY	STATE
			ZIP CODE

**MSD- GRAND GLAIZE WASTEWATER TREATMENT FACILITY  
MO-0101362**

	<u>DATE</u>	<u>PARAMETER</u>	<u>LIMIT</u>	<u>VALUE</u>
<b>Grand Glaize</b>	3/5--9/2001	TSS	45	60
	3/12--16/2001	TSS	45	88
	March, 2001	TSS	30	48
	4/11/2001	CBOD		Lab failure
	7/11/2001	Fecal	1,000	92,500
	July, 2001	Fecal	400	8,424
<b>Grand Glaize</b>	2/19/2002	Oil & Grease (005)	15	29
	5/6/2002	SS(004)	1.5	1.7
	5/6/2002	SS (006)	1.5	2
	10/22/2002	Chlorine Res.	0.04	0.087
<b>Grand Glaize</b>	4/3/2003	Chlorine Res.	0.04	0.060
<b>Grand Glaize</b>	Jan., 2005	TSS (lagoon)	45	216

**NOTE:**

There were no violations in the years 2000 and 2004.

## 8.5 Sludge use or disposal

The district maintains as many options as possible for sludge hauling. District equipment and personnel may be used to haul the sludge to a disposal site or it may be contracted out. The method used for hauling depends on costs and the availability of District personnel and vehicles. Currently sludge is being hauled for disposal by a contract hauler. Upon expiration of the current hauling contract costs will be examined to determine if contract hauling will continue.

The District maintains as many options as possible for sludge disposal. Incineration at the MSD-Lemay or Bissell Point Plants, landfilling at a solid waste landfill, composting at a regulated compost site, or land application are all methods considered for use by the District. The method chosen depends on costs at the time the decision is made. Currently the District is using a contract hauler to dispose of sludge at the Continental Cement Company in Hannibal, MO. The sludge is combined with other materials to create an artificial soil which is being used to reclaim an old limestone quarry. The artificial soil program is closely monitored by MDNR and has received favorable comments. Sludge has also been hauled to nearby sanitary landfills by both the District and the Contract hauler.

8.60 Person responsible for hauling sludge to disposal facility

Envirovac Waste Transport Systems  
Brian Dyche  
526 West Reid  
Jacksonville, IL. 62650

8.70 Sludge use or disposal facility (Facilities used by Envirovac)  
By Others

Continental Cement Company  
Doug Sisco  
10107 Highway 79  
Hannibal, MO. 63401  
(866) 927-8322  
MO- 0111686

Onyx Oak Ridge Landfill  
Ron Gabbard  
P.O. Box 428  
Valley Park, MO. 63088  
(636) 225-7220  
MO- 0113000

8.60 Person responsible for hauling sludge to disposal facility

Metropolitan St. Louis Sewer District (MSD)  
Todd V. Heller  
Grand Glaize Treatment Plant  
1000 Grand Glaize Parkway  
Valley Park, MO. 63088  
(636) 861-6700

8.70 Sludge use or disposal facility (Facilities used by MSD)  
By Applicant

Metropolitan St. Louis Sewer District (MSD)  
Neil Frankenburg  
Lemay Treatment Plant  
201 Hoffmeister  
St. Louis, MO. 63125  
(314) 638-5190  
MO- 0025151

Metropolitan St. Louis Sewer District (MSD)  
Ed Cope  
Bissell Point Treatment Plant  
10 East Grand Ave.  
St. Louis, MO. 63147  
(314) 436-8749  
MO- 0025178

Onyx Oak Ridge Landfill  
Ron Gabbard  
P.O. Box 428  
Valley Park, MO. 63088  
(636) 225-7220  
MO- 0113000

9.0 Downstream Landowners:

St. Louis County Parks Department  
41 South Central  
Clayton, MO 63105

City of Valley Park  
320 Benton St.  
Valley Park, MO 63088

10.00 DRINKING WATER SUPPLY INFORMATION

10.10 SOURCE OF YOUR DRINKING WATER SUPPLY

A. PUBLIC SUPPLY (MUNICIPAL OR WATER DISTRICT WATER) (IF PUBLIC, PLEASE GIVE NAME OF PUBLIC SUPPLY)

Missouri American Water

B. PRIVATE WELL

C. SURFACE WATER (LAKE, POND, OR STREAM)

10.20 DOES YOUR DRINKING WATER SOURCE SERVE AT LEAST 25 PEOPLE AT LEAST 60 DAYS PER YEAR (NOT NECESSARILY CONSECUTIVE DAYS)?

YES  NO

10.30 DOES YOUR SUPPLY SERVE HOUSING WHICH IS OCCUPIED YEAR ROUND BY THE SAME PEOPLE? THIS DOES NOT INCLUDE HOUSING WHICH IS OCCUPIED SEASONALLY.

YES  NO

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME <b>MSD-Grand GLAIZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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PART B - ADDITIONAL APPLICATION INFORMATION

11.00 INFLOW AND INFILTRATION

ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND/OR INFILTRATION.  
**3.04 MGD**

BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION.  
**SEWER REPAIR/Replacement to remove I/I and eliminate SSO's. Consultants hired to locate I/I and recommend cost effective solutions for I/I removal**

11.10 OPERATION/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 A 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

RESPONSIBILITIES OF CONTRACTOR

11.20 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ON 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 TO QUESTION B-11.30 FOR EACH. (IF NONE, GO TO QUESTION B-11.40)

A. LIST THE OUTFALL NUMBER THAT IS COVERED BY THIS IMPLEMENTATION SCHEDULE OUTFALL NO. <b>001</b>	B. INDICATE WHETHER THE PLANNED IMPROVEMENTS OR IMPLEMENTATION SCHEDULE ARE REQUIRED BY LOCAL, STATE, OR FEDERAL AGENCIES. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <b>See Attachment 11.20</b>
--	---

11.30 WASTEWATER DISCHARGES: COMPLETE QUESTIONS 11.40 THROUGH 11.80 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.

11.40 DESCRIPTION OF OUTFALL

A. OUTFALL NUMBER  
**001**

B. LOCATION  
1/4 **NW** 1/4 **SW** 1/4 **SW** SECTION **16** TOWNSHIP **44N** RANGE **5**  E  W  
LATITUDE \_\_\_\_\_ LONGITUDE \_\_\_\_\_

C. DISTANCE FROM SHORE (IF APPLICABLE) ft. \_\_\_\_\_ D. DEPTH BELOW SURFACE (IF APPLICABLE) ft. \_\_\_\_\_ E. AVERAGE DAILY FLOW RATE **16.8** mgd

F. DOES THIS OUTFALL HAVE EITHER AN INTERMITTENT OR A PERIODIC DISCHARGE?  
 YES  NO IF YES, PROVIDE THE FOLLOWING INFORMATION:

NUMBER OF DAYS PER YEAR DISCHARGE OCCURS	AVERAGE DURATION OF EACH DISCHARGE	AVERAGE FLOW PER DISCHARGE mgd	MONTHS IN WHICH DISCHARGE OCCURS
--	------------------------------------	--------------------------------	----------------------------------

G. IS OUTFALL EQUIPPED WITH A DIFFUSER?  
 YES  NO

11.50 DESCRIPTION OF RECEIVING WATER

A. NAME OF RECEIVING WATER  
**MERAMEC RIVER**

B. NAME OF WATERSHED (IF KNOWN) **LOWER MERAMEC** UNITED STATES SOIL CONSERVATION SERVICE 14-DIGIT WATERSHED CODE (IF KNOWN) **unknown**

C. NAME OF STATE MANAGEMENT/RIVER BASIN (IF KNOWN) **LOWER MERAMEC** UNITED STATES GEOLOGICAL SURVEY 8-DIGIT HYDROLOGIC CATALOGING UNIT CODE (IF KNOWN) **unknown**

D. CRITICAL FLOW OF RECEIVING STREAM (IF APPLICABLE) ACUTE **351** cfs CHRONIC **351** cfs E. TOTAL HARDNESS OF RECEIVING STREAM AT CRITICAL LOW FLOW (IF APPLICABLE) \_\_\_\_\_ mg/L of CaCO<sub>3</sub>

11.60 DESCRIPTION OF TREATMENT

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? CHECK ALL THAT APPLY.  
 PRIMARY  SECONDARY  ADVANCED  OTHER (DESCRIBE) \_\_\_\_\_

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME <b>MSD - GRAND GLAIZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>002</b>
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**PART B - ADDITIONAL APPLICATION INFORMATION**

**11.00 INFLOW AND INFILTRATION**

ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND/OR INFILTRATION.  
 gpd **See Outfall - 001**

BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION.  
 \_\_\_\_\_  
 \_\_\_\_\_

**11.10 OPERATION/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 A 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 \_\_\_\_\_

RESPONSIBILITIES OF CONTRACTOR \_\_\_\_\_

**11.20 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ON 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 TO QUESTION B-11.30 FOR EACH. (IF NONE, GO TO QUESTION B-11.40)**

A. LIST THE OUTFALL NUMBER THAT IS COVERED BY THIS IMPLEMENTATION SCHEDULE OUTFALL NO. <b>See Attachment 11.20</b>	B. INDICATE WHETHER THE PLANNED IMPROVEMENTS OR IMPLEMENTATION SCHEDULE ARE REQUIRED BY LOCAL, STATE, OR FEDERAL AGENCIES. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
---	---

**11.30 WASTEWATER DISCHARGES: COMPLETE QUESTIONS 11.40 THROUGH 11.60 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.**

**11.40 DESCRIPTION OF OUTFALL**

A. OUTFALL NUMBER  
**002**

B. LOCATION  
 1/4 **NW** 1/4 **SW** 1/4 **SW** SECTION **16** TOWNSHIP **44N** RANGE **5**  E  W

LATITUDE \_\_\_\_\_ LONGITUDE \_\_\_\_\_

C. DISTANCE FROM SHORE (IF APPLICABLE) _____ ft.	D. DEPTH BELOW SURFACE (IF APPLICABLE) _____ ft.	E. AVERAGE DAILY FLOW RATE <b>3-year Avg. 0.002</b> mgd
---	---	--

F. DOES THIS OUTFALL HAVE EITHER AN INTERMITTENT OR A PERIODIC DISCHARGE?  
 YES  NO IF YES, PROVIDE THE FOLLOWING INFORMATION:

NUMBER OF DAYS PER YEAR DISCHARGE OCCURS <b>0 to 3</b>	AVERAGE DURATION OF EACH DISCHARGE <b>Less than 1-day to 3-days</b>	AVERAGE FLOW PER DISCHARGE <b>0.529</b> mgd	MONTHS IN WHICH DISCHARGE OCCURS <b>Variable</b>
---	--	--	---

G. IS OUTFALL EQUIPPED WITH A DIFFUSER?  
 YES  NO

**11.50 DESCRIPTION OF RECEIVING WATER**

A. NAME OF RECEIVING WATER  
**MERAMEC River**

B. NAME OF WATERSHED (IF KNOWN) <b>Lower Meramec</b>	UNITED STATES SOIL CONSERVATION SERVICE 14-DIGIT WATERSHED CODE (IF KNOWN) <b>unknown</b>
---	--

C. NAME OF STATE MANAGEMENT/RIVER BASIN (IF KNOWN) <b>Lower Meramec</b>	UNITED STATES GEOLOGICAL SURVEY 8-DIGIT HYDROLOGIC CATALOGING UNIT CODE (IF KNOWN) <b>unknown</b>
--	--

D. CRITICAL FLOW OF RECEIVING STREAM (IF APPLICABLE) ACUTE <b>351</b> cfs CHRONIC <b>351</b> cfs	E. TOTAL HARDNESS OF RECEIVING STREAM AT CRITICAL LOW FLOW (IF APPLICABLE) _____ mg/L of CaCO <sub>3</sub>
---	---

**11.60 DESCRIPTION OF TREATMENT**

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? CHECK ALL THAT APPLY.  
 PRIMARY  SECONDARY  ADVANCED  OTHER (DESCRIBE) **Emergency stormwater retention lagoon outfall**

#### 11.20 Scheduled Improvements

Plans are nearly complete for improvements at Grand Glaize. Capacity will increase from 16 MGD to 21 MGD. Existing coarse and fine-screens will be replaced. Four new primary tanks will be added along with two new fine-air aeration tanks. The existing 3-oxidation tanks will be converted to fine-air aeration tanks. Two new secondary clarifiers will be constructed. New baffles and larger flocculation wells will be added to the existing 4-secondary clarifiers. Gaseous chlorine and sulphur dioxide will be replaced with Hypochlorite and sodium bisulfite. One new belt filter press will be installed in the sludge process building. A new scum concentrator will be installed to receive scum from the primary and secondary clarifiers.

A full set of drawings and specifications for the improvements will be submitted in the early summer of 2005.

11.60 DESCRIPTION OF TREATMENT (CONTINUED)

B. INDICATE THE FOLLOWING REMOVAL RATES (AS APPLICABLE)

DESIGN BOD<sub>5</sub> REMOVAL OR DESIGN CBOD<sub>5</sub> REMOVAL ≥ 85 %      DESIGN SS REMOVAL ≥ 85 %  
 DESIGN P REMOVAL NA % \*      DESIGN N REMOVAL NA % \*  
 OTHER \_\_\_\_\_ % \* N-Removal achieved but not part of design

C. WHAT TYPE OF DISINFECTION IS USED FOR THE EFFLUENT FROM THIS OUTFALL? IF DISINFECTION VARIES BY SEASON, PLEASE DESCRIBE.

Seasonal disinfection with Chlorine - Outfall - 001

IF DISINFECTION IS BY CHLORINATION, IS DECHLORINATION USED FOR THIS OUTFALL?

YES     NO

D. DOES THE TREATMENT PLANT HAVE POST AERATION?

YES     NO    Step Cascade

11.70 EFFLUENT TESTING INFORMATION. ALL APPLICANTS THAT DISCHARGE TO WATERS OF THE US 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.

OUTFALL NUMBER 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	VALUE	UNITS	VALUE	UNITS	NO. OF SAMPLES
pH (MINIMUM)	<u>7.0</u>	S.U.	-	-	<u>263</u>
pH (MAXIMUM)	<u>7.8</u>	S.U.	-	-	<u>263</u>
FLOW RATE	<u>37.37</u>	MGD	<u>18.05</u>	MGD	<u>366</u>
TEMPERATURE (WINTER)	<u>52</u>	°F	<u>64 yearly</u>	°F	<u>366</u>
TEMPERATURE (SUMMER)	<u>72</u>	°F			

\*FOR pH PLEASE REPORT A MINIMUM AND A MAXIMUM DAILY VALUE.

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	CONC.	UNITS	NO. OF SAMPLES		

CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS

BIOCHEMICAL (BOD <sub>5</sub> )	-	mg/L	-	mg/L	-	-	-
OXYGEN DEMAND (REPORT ONE) (CBOD <sub>5</sub> )	<u>35</u>	mg/L	<u>10</u>	mg/L	<u>262</u>	<u>See NOTE-1</u>	<u>12</u>
FECAL COLIFORM	<u>260</u>	#/100 mL	<u>28</u>	#/100 mL	<u>60</u>	<u>See NOTE-3</u>	<u>1</u>
TOTAL SUSPENDED SOLIDS (TSS)	<u>28</u>	mg/L	<u>10</u>	mg/L	<u>262</u>	<u>See NOTE-2</u>	<u>0.622</u>

NOTES:

- 1.) **cBOD<sub>5</sub>** - Std Methods 20th ed- Method 5210B (40 CFR Pt 136 Approved) - MDL <2 for a 300 ml dilution (Not really an MDL but the lowest valid value attainable on the test)
- 2.) **TSS** - Std Methods 20th ed - Method 2540 D&E (40 CFR Pt 136 Approved) - MDL 0.622 mg/l for a 1 mg/l standard
- 3.) **Fecal Coliform** - Membrane Filter Method, Std Methods 19th ed Methods 9222D and B.5C - MDL 1 colony/100 ml

11.80 EFFLUENT TESTING DATA. APPLICANTS THAT DISCHARGE TO WATERS OF THE US 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 ON 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.

OUTFALL NUMBER

001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	CONC.	UNITS	NO. OF SAMPLES		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS							
AMMONIA (AS N)	14	mg/L	5.88	mg/L	12	Midi Distillation Method	0.56 <sup>mg</sup> /L
CHLORINE (TOTAL RESIDUAL, TRC)	0.40	mg/L	0.10	mg/L	158	Pocket Colorimeter DPD Spectrophotometer	0.03 <sup>mg</sup> /L
DISSOLVED OXYGEN		mg/L		mg/L			
TOTAL KJELDAHL NITROGEN (TKN)		mg/L		mg/L			
NITRATE PLUS NITRATE NITROGEN		mg/L		mg/L			
OIL AND GREASE	7	mg/L	2	mg/L	12	See NOTE-1	0.8
PHOSPHORUS (TOTAL)		mg/L		mg/L			
TOTAL DISSOLVED SOLIDS (TDS)		mg/L		mg/L			
OTHER		mg/L		mg/L			

END OF PART B.

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

NOTE :

1.)

Oil and Grease Analysis - EPA Method 1664A-N-Hexane Extractable Material - MDL 0.8 mg/l

**PART C - CERTIFICATION**

**12.00 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.

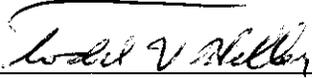
ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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 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.

NAME AND OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)

TODD V. HELLER OPERATIONS DIVISION MANAGER

SIGNATURE



TELEPHONE NUMBER

636-861-6700

DATE SIGNED

6-8-05

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 FORMS TO:

**END OF PART C.**

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

DO NOT COMPLETE THE REMAINDER OF THIS APPLICATION, UNLESS:

1. YOUR FACILITY DESIGN FLOW IS EQUAL TO OR GREATER THAN 1.0 MGD (1,000,000 GALLONS PER DAY) AND/OR
2. YOUR FACILITY IS A PRE-TREATMENT TREATMENT WORKS.

**MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.**

FACILITY NAME <b>MSD-GRAND GLAIZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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**PART D - EXPANDED EFFLUENT TESTING DATA**

**13.00 EXPANDED EFFLUENT TESTING DATA**

REFER TO THE DIRECTIONS ON THE COVER PAGE TO DETERMINE WHETHER APPLIES TO THE TREATMENT WORKS.

EFFLUENT TESTING: IF THE TREATMENT WORKS HAS A DESIGN FLOW GREATER THAN OR EQUAL TO 1.0 MGD OR IT HAS (OR IS REQUIRED TO HAVE) A PRETREATMENT PROGRAM, OR IS OTHERWISE REQUIRED BY THE PERMITTING AUTHORITY TO PROVIDE THE DATA, THEN PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING POLLUTANTS. PROVIDE THE INDICATED EFFLUENT TESTING INFORMATION FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON 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. INDICATE IN THE BLANK ROWS PROVIDED BELOW ANY DATA YOU MAY HAVE ON POLLUTANTS NOT SPECIFICALLY LISTED IN THIS FORM. EFFLUENT TESTING DATA MUST NOT BE MORE THAN FOUR AND ONE-HALF YEARS OLD.

OUTFALL NUMBER (COMPLETE ONCE FOR EACH OUTFALL DISCHARGING EFFLUENT TO WATERS OF THE STATE.)

**001**

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	# OF SAMPLES		

**METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS**

ANTIMONY											
ARSENIC											
BERYLLIUM											
CADMIUM	0.80	mg/L			0.225	mg/L			4	ICP	0.005 ppm
CHROMIUM	2.0	mg/L			0.50	mg/L			4	ICP	0.005 ppm
COPPER	0.0	mg/L			0.0	mg/L			4	ICP	0.005 ppm
LEAD	0.0	mg/L			0.0	mg/L			4	ICP	0.006 ppm
MERCURY	0.60	mg/L			0.15	mg/L			4	FIMS	0.0002 ppm
NICKEL	0.0	mg/L			0.0	mg/L			4	ICP	0.005 ppm
SELENIUM											
SILVER											
THALLIUM											
ZINC	53.0	mg/L			30.5	mg/L			4	ICP	0.010 ppm
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (as CaCO <sub>3</sub> )											

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER METALS REQUESTED BY THE PERMIT WRITER.


FACILITY NAME <b>MSD-GRAND GLATZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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COMPLETE ONCE FOR EACH OUTFALL DISCHARGING EFFLUENT TO WATERS OF THE STATE.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE				# OF SAMPLES	ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS			
<b>VOLATILE ORGANIC COMPOUNDS</b>											
ACROLEIN											
ACRYLONITRILE											
BENZENE											
BROMOFORM											
CARBON TETRACHLORIDE			<b>SEE Attachment D-1</b>								
CLOROBENZENE											
CHLORODIBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLORO-ETHANE											
1,2-DICHLORO-ETHANE											
TRANS-1,2-DICHLOROETHYLENE											
1,1-DICHLORO-ETHYLENE											
1,2-DICHLORO-PROPANE											
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE											
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRA-CHLOROETHANE											
TETRACHLORO-ETHANE											
TOLUENE											
3,4-BENZO-FLUORANTHENE											
BENZO(GH) PHERYLENE											
BENZO(K) FLUORANTHENE											

FACILITY NAME: **MSD-GRAND GLATZ** PERMIT NO. **MO- 0101362** OUTFALL NO. **001**

COMPLETE ONCE FOR EACH OUTFALL DISCHARGING EFFLUENT TO WATERS OF THE STATE.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE				# OF SAMPLES	ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS			

VOLATILE ORGANIC COMPOUNDS (CONTINUED)

BIS (2-CHLOROTHOXY) METHANE											
BIS (2-CHLOROETHYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE	<b>SEE ATTACHMENT D-1</b>										
2-CHLORONAPHTHALENE											
4-CHLOROPHENYL PHENYL ETHER											
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DEBENZO(A,H) ANTHRACENE											
1,2-DICHLOROBENZENE											
1,3-DICHLOROBENZENE											
1,4-DICHLOROBENZENE											
3,3-DICHLOROBENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											
2,4-DINITROTOLUENE											
2,6-DINITROTOLUENE											
1,2-DIPHENYLHYDRAZINE											
1,1,1-TRICHLOROETHANE											
1,1,2-TRICHLOROETHANE											
TRICHLORETHYLENE											
VINYL CHLORIDE											

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER VOLATILE ORGANIC COMPOUNDS REQUESTED BY THE PERMIT WRITER.


FACILITY NAME <b>MSD - GRAND GLAZIE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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COMPLETE ONCE FOR EACH OUTFALL DISCHARGING EFFLUENT TO WATERS OF THE STATE.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE				ANALYTICAL METHOD
	CONC.	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	

ACID-EXTRACTABLE COMPOUNDS

P-CHLORO-M-CRESOL									
2-CHLOROPHENOL									
2,4-DICHLOROPHENOL									
2,4-DIMETHYLPHENOL	<b>SEE ATTACHMENT D-2</b>								
4,6-DINITRO-O-CRESOL									
2,4-DINITROPHENOL									
2-NITROPHENOL									
4-NITROPHENOL									
PENTACHLOROPHENOL									
PHENOL									
2,4,6-TRICHLOROPHENOL									

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER ACID-EXTRACTABLE COMPOUNDS REQUESTED BY THE PERMIT WRITER.

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FACILITY NAME <b>MSD-GRAND GLATZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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COMPLETE ONCE FOR EACH OUTFALL DISCHARGING EFFLUENT TO WATERS OF THE STATE.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE				ANALYTICAL METHOD
	CONC.	UNITS	MASS	UNITS	CONC.	UNITS	MASS	UNITS	

BASE-NEUTRAL COMPOUNDS

ACENAPHTHENE										
ACENAPHTHYLENE										
ANTHRACENE										
BENZIDINE										
BENZO(A)ANTHRACENE	<b>SEE ATTACHMENT D-3</b>									
BENZO(A)PYRENE										
FLUORANTHENE										
FLUORENE										
HEXACHLOROBENZENE										
HEXACHLOROCYCLO-PENTADIENE										
HEXACHLOROETHANE										
INDENO (1,2,3-CD)PYRENE										
ISOPHORONE										
NAPHTHALENE										
NITROBENZENE										
N-NITROSODI-METHYLAMINE										
N-NITROSODI-METHYLAMINE										
N-NITROSODI-PHENYLAMINE										
PHENANTHRENE										
PYRENE										
1,2,4-TRICHLOROBENZENE										

USE THIS SPACE (OR SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER BASE-NEUTRAL COMPOUNDS REQUESTED BY THE PERMIT WRITER.


USE THIS SPACE (OR SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER BASE-NEUTRAL COMPOUNDS REQUESTED BY THE PERMIT WRITER.


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

Maximum Daily Discharge						
Concentration	Units	Number of Samples	Analytical Method	ML/MDL		
Volatile Organic Compounds	Acrolein	<0.0200	mg/L	1	603	<0.0200
	Acrylonitrile	<0.0200	mg/L	1	603	<0.0200
	Benzene	<0.0010	mg/L	1	624	<0.0010
	Bromoform	<0.0010	mg/L	1	624	<0.0010
	Carbon Tetrachloride	<0.0010	mg/L	1	624	<0.0010
	Chlorobenzene	<0.0010	mg/L	1	624	<0.0010
	Chlorodibromomethane	<0.0010	mg/L	1	624	<0.0010
	Chloroethane	<0.0010	mg/L	1	624	<0.0010
	2-chloroethyl vinyl ether	<0.0041	mg/L	1	624	<0.0041
	Chloroform	<0.0010	mg/L	1	624	<0.0010
	Dichlorobromomethane	<0.0016	mg/L	1	624	<0.0010
	1,1-dichloroethane	<0.0010	mg/L	1	624	<0.0010
	1,2-dichloroethane	<0.0019	mg/L	1	624	<0.0018
	1,2-trans-dichloroethylene	<0.0010	mg/L	1	624	<0.0010
	1,1-dichloroethylene	<0.0033	mg/L	1	624	<0.0032
	1,2-dichloropropane	<0.0034	mg/L	1	624	<0.0034
	1,3 dichloropropylene	<0.0021	mg/L	1	624	<0.0010
	Ethylbenzene	<0.0010	mg/L	1	624	<0.0010
	Methyl bromide	<0.0010	mg/L	1	624	<0.0010
	Methyl Chloride	<0.0013	mg/L	1	624	<0.0013
	Methylene Chloride	<0.0023	mg/L	1	624	<0.0023
	1,1,2,2-tetrachloroethane	<0.0012	mg/L	1	624	<0.0012
State typo ? State=ethane vs. MSD=ethene	### Tetrachloroethene	<0.0011	mg/L	1	624	<0.0011
	Toluene	<0.0013	mg/L	1	624	<0.0013
	3,4-benzofluoranthene	<0.0080	mg/L	1	625	<0.0080
	Benzo(gh)perylene	<0.0110	mg/L	1	625	<0.0011
	Benzo(k)fluoranthene	<0.0078	mg/L	1	625	<0.0078
	Bis(2-chloroethoxy) methane	<0.0093	mg/L	1	625	<0.0093
	Bis (2-chloroethyl) ether	<0.0335	mg/L	1	625	<0.0335
	Bis (2-ethylhexyl) phthalate	0.0290	mg/L	1	625	<0.0043
	4-bromophenyl phenyl ether	<0.0084	mg/L	1	625	<0.0084
	Butyl benzyl phthalate	<0.0030	mg/L	1	625	<0.0030
	2-chloronaphthalene	<0.0054	mg/L	1	625	<0.0054
	4-chlorophenyl phenyl ether	<0.0133	mg/L	1	625	<0.0133
	Chrysene	<0.0047	mg/L	1	625	<0.0047
	Di-n-butyl phthalate	<0.0043	mg/L	1	625	<0.0043
State typo ? State=Debenzo vs. MSD=Dibenzo	### Dibenzo(a,h)anthracene	<0.0300	mg/L	1	625	<0.0030
	1,2-dichlorobenzene	<0.0011	mg/L	1	624	<0.0011
	1,3-dichlorobenzene	<0.0011	mg/L	1	624	<0.0011
	1,4-dichlorobenzene	<0.0021	mg/L	1	624	<0.0021
	3,3-dichlorobenzidine	<0.0370	mg/L	1	625	<0.0370
	Diethyl phthalate	<0.0096	mg/L	1	625	<0.0096
	Dimethyl phthalate	<0.0091	mg/L	1	625	<0.0091
	2,4-dinitrotoluene	<0.0147	mg/L	1	625	<0.0147
	2,6-dinitrotoluene	<0.0129	mg/L	1	625	<0.0129
	1,2-diphenylhydrazine	<0.0172	mg/L	1	625	<0.0172
	1,1,1-trichloroethane	<0.0010	mg/L	1	624	<0.0010
	1,1,2-trichloroethane	<0.0010	mg/L	1	624	<0.0010
	Trichloroethylene	<0.0010	mg/L	1	624	<0.0010
	Vinyl Chloride	<0.0010	mg/L	1	624	<0.0010

Maximum Daily Discharge			
Concentration	Units	Number of Samples	Analytical Method

## Acid-Extractable Compounds

P-chloro-M-cresol	<0.0088	mg/L	1	625
2-chlorophenol	<0.0215	mg/L	1	625
2,4-dichlorophenol	<0.0019	mg/L	1	625
2,4-dimethylphenol	<0.0146	mg/L	1	625
4,6-dinitro-o-cresol	<0.0173	mg/L	1	625
2,4-dinitrophenol	<0.0293	mg/L	1	625
2-nitrophenol	<0.0103	mg/L	1	625
4-nitrophenol	<0.0142	mg/L	1	625
Pentachlorophenol	<0.0196	mg/L	1	625
Phenol	<0.0058	mg/L	1	625
2,4,6-trichlorophenol	<0.0063	mg/L	1	625

Maximum Daily Discharge			
Concentration	Units	Number of Samples	Analytical Method

## Base-Neutral Compounds

Acenaphthylene	<0.0093	mg/L	1	625
Acenaphthene	<0.0218	mg/L	1	625
Anthracene	<0.0068	mg/L	1	625
Benzidine	<0.0148	mg/L	1	625
Benzo(a) anthracene	<0.0043	mg/L	1	625
Benzo(a) pyrene	<0.0079	mg/L	1	625
Fluoranthene	<0.0029	mg/L	1	625
Fluorene	<0.0120	mg/L	1	625
Hexachlorobenzene	<0.0070	mg/L	1	625
Hexachlorocyclopentadiene	<0.0059	mg/L	1	625
Hexachloroethane	<0.0159	mg/L	1	625
Indeno (1,2,3-cd) pyrene	<0.0510	mg/L	1	625
Isophorone	<0.0084	mg/L	1	625
Naphthalene	<0.0077	mg/L	1	625
Nitrobenzene	<0.0091	mg/L	1	625
N-nitrosodimethylamine	<0.0141	mg/L	1	625
N-nitrosodiphenylamine	<0.0053	mg/L	1	625
Phenanthrene	<0.0054	mg/L	1	625
Pyrene	<0.0028	mg/L	1	625
1,2,4-trichlorobenzene	<0.0089	mg/L	1	625

**MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.**

FACILITY NAME <b>MSD-GRAND GLATZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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**PART E - TOXICITY TESTING DATA**

**14.00 TOXICITY TESTING DATA**

REFER TO THE DIRECTIONS ON THE COVER PAGE TO DETERMINE WHETHER APPLIES TO THE TREATMENT WORKS.

POTWS MEETING ONE OR MORE OF THE FOLLOWING CRITERIA MUST PROVIDE THE RESULTS OF WHOLE EFFLUENT TOXICITY TESTS FOR ACUTE OR CHRONIC TOXICITY FOR EACH OF THE FACILITY'S DISCHARGE POINTS:

- A. POTWS WITH A DESIGN FLOW RATE GREATER THAN OR EQUAL TO 1.0 MGD;
- B. POTWS WITH A PRETREATMENT PROGRAM (OR THOSE THAT ARE REQUIRED TO HAVE ONE UNDER 40 CFR PART 403); OR
- C. POTWS REQUIRED BY THE PERMITTING AUTHORITY TO SUBMIT DATA FOR THESE PARAMETERS
  - AT A MINIMUM, THESE RESULTS MUST INCLUDE QUARTERLY TESTING FOR A 12-MONTH PERIOD WITHIN THE PAST 1 YEAR USING MULTIPLE SPECIES (MINIMUM OF TWO SPECIES), OR THE RESULTS FROM FOUR TESTS PERFORMED AT LEAST ANNUALLY IN THE FOUR AND ONE-HALF YEARS PRIOR TO THE APPLICATION, PROVIDED THE RESULTS SHOW NO APPRECIABLE TOXICITY, AND TESTING FOR ACUTE AND/OR CHRONIC TOXICITY, DEPENDING ON THE RANGE OF RECEIVING WATER DILUTION. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136.
  - IF EPA METHODS WERE NOT USED, REPORT THE REASONS FOR USING ALTERNATE METHODS. IF TEST SUMMARIES ARE AVAILABLE THAT CONTAIN ALL OF THE INFORMATION REQUESTED BELOW, THEY MAY BE SUBMITTED IN PLACE OF PART E. IF NO BIOMONITORING DATA IS REQUIRED, DO NOT COMPLETE PART E. REFER TO THE APPLICATION OVERVIEW FOR DIRECTIONS ON WHICH OTHER SECTIONS OF THE FORM TO COMPLETE.

14.10 REQUIRED TESTS. INDICATE THE NUMBER OF WHOLE EFFLUENT TOXICITY TESTS CONDUCTED IN THE PAST FOUR AND ONE-HALF YEARS.

CHRONIC	<b>0</b>	ACUTE	<b>13</b>
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INDIVIDUAL TEST DATA. COMPLETE THE FOLLOWING CHART FOR THE LAST 3 WHOLE EFFLUENT TOXICITY TEST. ALLOW ONE COLUMN PER TEST (WHERE EACH SPECIES CONSTITUTES A TEST). COPY THIS PAGE IF MORE THAN THREE TESTS ARE BEING REPORTED.

TEST NUMBER	TEST NUMBER	TEST NUMBER													
<b>809216</b>	<b>800329</b>	<b>726402</b>													
	MOST RECENT	2ND MOST RECENT	3RD MOST RECENT												
A. TEST INFORMATION	<i>PimePhales Promelas + Ceriodaphnia Dubia for All Test Numbers</i>														
TEST SPECIES & TEST METHOD NUMBER	<i>← PimePhales Promelas</i>	<i>Single dilution, 48-HR</i>	<i>Non-renewal</i>												
AGE AT INITIATION OF TEST	<i>&lt;24HR CERIO/7-days Pime</i>	<i>&lt;24 HRS CERIO/4-days</i>	<i>&lt;24HR Cerio./6-days P. me.</i>												
OUTFALL NUMBER	<i>001</i>	<i>001</i>	<i>001</i>												
DATES SAMPLE COLLECTED	<i>3-01-02-05</i>	<i>9/07-08/2004</i>	<i>05/17-18/2004</i>												
DATE TEST STARTED	<i>3/02/05</i>	<i>09/08/2004</i>	<i>05/19/2004</i>												
DURATION	<i>48 HRS-EACH</i>	<i>48 HRS-EACH</i>	<i>48 HRS EACH</i>												
B. GIVE TOXICITY TEST METHODS FOLLOWED	<table border="1"> <tr> <td>MANUAL TITLE</td> <td colspan="3"><i>METHODS FOR MEASURING the Acute Toxicity of Effluents and</i></td> </tr> <tr> <td>EDITION NUMBER AND YEAR OF PUBLICATION</td> <td colspan="3"><i>Receiving Waters to Freshwater and Marine Organisms</i></td> </tr> <tr> <td>PAGE NUMBER(S)</td> <td colspan="3"><i>5th Ed, 2002 EPA-821-R-02-012, All Pages</i></td> </tr> </table>			MANUAL TITLE	<i>METHODS FOR MEASURING the Acute Toxicity of Effluents and</i>			EDITION NUMBER AND YEAR OF PUBLICATION	<i>Receiving Waters to Freshwater and Marine Organisms</i>			PAGE NUMBER(S)	<i>5th Ed, 2002 EPA-821-R-02-012, All Pages</i>		
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PAGE NUMBER(S)	<i>5th Ed, 2002 EPA-821-R-02-012, All Pages</i>														
C. GIVE THE SAMPLE COLLECTION METHOD(S) USED. FOR MULTIPLE GRAB SAMPLES, INDICATE THE NUMBER OF GRAB SAMPLES USED.	<table border="1"> <tr> <td>24-HOUR COMPOSITE</td> <td style="text-align: center;"><i>X</i></td> <td style="text-align: center;"><i>X</i></td> <td style="text-align: center;"><i>X</i></td> </tr> <tr> <td>GRAB</td> <td></td> <td></td> <td></td> </tr> </table>			24-HOUR COMPOSITE	<i>X</i>	<i>X</i>	<i>X</i>	GRAB							
24-HOUR COMPOSITE	<i>X</i>	<i>X</i>	<i>X</i>												
GRAB															
D. INDICATE WHERE THE SAMPLE WAS TAKEN IN RELATION TO DISINFECTION. (CHECK ALL THAT APPLY FOR EACH)	<table border="1"> <tr> <td>BEFORE DISINFECTION</td> <td colspan="3" style="text-align: center;"><i>X - Before disinfection season</i></td> </tr> <tr> <td>AFTER DISINFECTION</td> <td></td> <td></td> <td></td> </tr> <tr> <td>AFTER DECHLORINATION</td> <td style="text-align: center;"><i>X</i></td> <td></td> <td style="text-align: center;"><i>X</i></td> </tr> </table>			BEFORE DISINFECTION	<i>X - Before disinfection season</i>			AFTER DISINFECTION				AFTER DECHLORINATION	<i>X</i>		<i>X</i>
BEFORE DISINFECTION	<i>X - Before disinfection season</i>														
AFTER DISINFECTION															
AFTER DECHLORINATION	<i>X</i>		<i>X</i>												
E. DESCRIBE THE POINT IN THE TREATMENT PROCESS AT WHICH THE SAMPLE WAS COLLECTED.	<table border="1"> <tr> <td>SAMPLE WAS COLLECTED</td> <td style="text-align: center;"><i>Top of Cascade</i></td> <td style="text-align: center;"><i>SAME</i></td> <td style="text-align: center;"><i>SAME</i></td> </tr> </table>			SAMPLE WAS COLLECTED	<i>Top of Cascade</i>	<i>SAME</i>	<i>SAME</i>								
SAMPLE WAS COLLECTED	<i>Top of Cascade</i>	<i>SAME</i>	<i>SAME</i>												
F. FOR EACH TEST, INCLUDE WHETHER THE TEST WAS INTENDED TO ASSESS CHRONIC TOXICITY, ACUTE TOXICITY, OR BOTH.	<table border="1"> <tr> <td>CHRONIC TOXICITY</td> <td></td> <td></td> <td></td> </tr> <tr> <td>ACUTE TOXICITY</td> <td style="text-align: center;"><i>X</i></td> <td style="text-align: center;"><i>X</i></td> <td style="text-align: center;"><i>X</i></td> </tr> </table>			CHRONIC TOXICITY				ACUTE TOXICITY	<i>X</i>	<i>X</i>	<i>X</i>				
CHRONIC TOXICITY															
ACUTE TOXICITY	<i>X</i>	<i>X</i>	<i>X</i>												
G. PROVIDE THE TYPE OF TEST PERFORMED	<table border="1"> <tr> <td>STATIC</td> <td style="text-align: center;"><i>X</i></td> <td style="text-align: center;"><i>X</i></td> <td style="text-align: center;"><i>X</i></td> </tr> <tr> <td>STATIC-RENEWAL</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FLOW-THROUGH</td> <td></td> <td></td> <td></td> </tr> </table>			STATIC	<i>X</i>	<i>X</i>	<i>X</i>	STATIC-RENEWAL				FLOW-THROUGH			
STATIC	<i>X</i>	<i>X</i>	<i>X</i>												
STATIC-RENEWAL															
FLOW-THROUGH															
H. SOURCE OF DILUTION WATER. IF LABORATORY WATER, SPECIFY TYPE; IF RECEIVING WATER, SPECIFY SOURCE	<table border="1"> <tr> <td>LABORATORY WATER</td> <td colspan="3" style="text-align: center;"><i>—</i></td> </tr> <tr> <td>RECEIVING WATER</td> <td style="text-align: center;"><i>MERAMEC River</i></td> <td style="text-align: center;"><i>MERAMEC River</i></td> <td style="text-align: center;"><i>MERAMEC River</i></td> </tr> </table>			LABORATORY WATER	<i>—</i>			RECEIVING WATER	<i>MERAMEC River</i>	<i>MERAMEC River</i>	<i>MERAMEC River</i>				
LABORATORY WATER	<i>—</i>														
RECEIVING WATER	<i>MERAMEC River</i>	<i>MERAMEC River</i>	<i>MERAMEC River</i>												

**PART E - TOXICITY TESTING DATA (CONTINUED)**

**14.00 TOXICITY TESTING DATA (CONTINUED)**

	MOST RECENT	2ND MOST RECENT	3RD MOST RECENT
I. TYPE OF DILUTION WATER. IF SALT WATER, SPECIFY "NATURAL" OR TYPE OF ARTIFICIAL SEA SALTS OR BRINE USED.			
FRESH WATER	X	X	X
SALT WATER			

J. GIVE THE PERCENTAGE EFFLUENT USED FOR ALL CONCENTRATIONS IN THE TEST SERIES.			
Single dilution	AEC 75%	AEC 75%	NA
Multiple dilution	N/A	N/A	6.25%, 12.5%, 25%, 50%, 100%

K. PARAMETERS MEASURED DURING THE TEST. (STATE WHETHER PARAMETER MEETS TEST METHOD SPECIFICATIONS)			
	MEETS TEST STANDARDS	MEETS TEST STANDARDS	MEETS TEST STANDARDS
pH			
<del>SALINITY</del> Conductivity	↓	↓	↓
TEMPERATURE			
AMMONIA			
DISSOLVED OXYGEN	↓	↓	↓

L. TEST RESULTS						Dilution	
ACUTE:	Pimphales	Ceriodaphnia	PIMPHALES	CERIODAPHNIA		PIMP.	CERIO
PERCENT IN SURVIVAL IN 100% EFFLUENT	NA	NA	NA	NA	↓	100%	95%
LC50 ESTIMATED	NA	N/A	NA	NA	↓	>100%	>100%
95% C.I.	NA	NA	NA	NA	↓	NA	NA
CONTROL PERCENT SURVIVAL	95%	95%	98%	100%	↓	95%	100%
OTHER (DESCRIBE) 75% AEC	85%	85%	93%	100%	↓	6.25%	100%
CHRONIC:					↓	12.5%	100%
NOEC	NA		NA		↓	25%	95%
IC25		↓		↓	↓	50%	100%
CONTROL PERCENT SURVIVAL		↓		↓			
OTHER (DESCRIBE)		↓		↓		NA - Applies for all lines UNDER CHRONIC	

M. QUALITY CONTROL ASSURANCE			
IS REFERENCE TOXICANT DATA AVAILABLE?	YES	YES	YES
WAS REFERENCE TOXICANT TEST WITHIN ACCEPTABLE BOUNDS?	YES	YES	YES
WHAT DATE WAS REFERENCED TOXICANT TEST RUN (MM/DD/YYYY)?	03/02/2005	09/08/2004	04/28/2004
OTHER (DESCRIBE)			

14.20 TOXICITY REDUCTION EVALUATION

IS THE TREATMENT WORKS INVOLVED IN A TOXICITY REDUCTION EVALUATION?

YES  NO

IF YES, DESCRIBE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14.30 SUMMARY OF SUBMITTED BIOMONITORING TEST INFORMATION

IF YOU HAVE SUBMITTED BIOMONITORING TEST INFORMATION, OR INFORMATION REGARDING THE CAUSE OF TOXICITY, WITHIN THE PAST FOUR AND ONE-HALF YEARS, PROVIDE THE DATES THE INFORMATION WAS SUBMITTED TO THE PERMITTING AUTHORITY AND A SUMMARY OF THE RESULTS.

DATE SUBMITTED (MM/DD/YYYY) NA

SUMMARY OF RESULTS (SEE INSTRUCTIONS) NA

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**END OF PART E.**

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

**MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.**

FACILITY NAME <b>MSD - GRAND GLAIZE</b>	PERMIT NO. <b>MO- 0101362</b>	OUTFALL NO. <b>001</b>
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**PART F - INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES**

**15.00 INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES**

ALL TREATMENT WORKS RECEIVING DISCHARGES FROM SIGNIFICANT INDUSTRIAL USERS OR WHICH RECEIVE RCRA, CERCLA, OR OTHER REMEDIAL WASTES MUST COMPLETE THIS FORM.

**GENERAL INFORMATION**

**15.05 PRETREATMENT PROGRAM**

DOES THE TREATMENT WORKS HAVE, OR IS IT SUBJECT TO, AN APPROVED PRETREATMENT PROGRAM?

YES  NO

**15.10 NUMBER OF SIGNIFICANT INDUSTRIAL USERS (SIUs) AND CATEGORICAL INDUSTRIAL USERS (CIUs). PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.**

A. NUMBER OF NON-CATEGORICAL SIUs

**2**

B. NUMBER OF CIUs

**6**

**15.15 SIGNIFICANT INDUSTRIAL USER INFORMATION**

SUPPLY THE FOLLOWING INFORMATION FOR EACH SIU. IF MORE THAN ONE SIU DISCHARGES TO THE TREATMENT WORKS, PROVIDE THE INFORMATION REQUESTED FOR EACH SIGNIFICANT INDUSTRIAL USER INFORMATION. PROVIDE THE NAME AND ADDRESS OF EACH SIU DISCHARGING TO THE TREATMENT WORKS. SUBMIT ADDITIONAL PAGES AS NECESSARY.

NAME

**SEE ATTACHMENT 15-1**

MAILING ADDRESS

**15.20 INDUSTRIAL PROCESSES**

DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU'S DISCHARGE.

**SEE ATTACHMENT 15-1**

**15.25 PRINCIPAL PRODUCT(S) AND RAW MATERIAL(S)**

DESCRIBE ALL OF THE PRINCIPAL PROCESSES AND RAW MATERIALS THAT AFFECT OR CONTRIBUTE TO THE SIU'S DISCHARGE.

PRINCIPAL PRODUCT(S)

**SEE ATTACHMENT 15-1**

RAW MATERIAL(S)

**15.30 FLOW RATE**

A. PROCESS WASTEWATER FLOW RATE. INDICATE THE AVERAGE DAILY VOLUME OF PROCESS WASTEWATER DISCHARGED INTO THE COLLECTION SYSTEM IN GALLONS PER DAY (gpd) AND WHETHER THE DISCHARGE IS CONTINUOUS OR INTERMITTENT.

gpd

CONTINUOUS

INTERMITTENT

**SEE ATTACHMENT 15-2**

B. NON-PROCESS WASTEWATER FLOW RATE. INDICATE THE AVERAGE DAILY VOLUME OF NON-PROCESS WASTEWATER DISCHARGED INTO THE COLLECTION SYSTEM IN GALLONS PER DAY (gpd) AND WHETHER THE DISCHARGE IS CONTINUOUS OR INTERMITTENT.

gpd

CONTINUOUS

INTERMITTENT

**SEE ATTACHMENT 15-2**

**15.35 PRETREATMENT STANDARDS**

INDICATE WHETHER THE SIU IS SUBJECT TO THE FOLLOWING

A. LOCAL LIMITS

YES  NO

B. CATEGORICAL PRETREATMENT STANDARDS

YES  NO

**SEE ATTACHMENT 15-2**

IF SUBJECT TO CATEGORICAL PRETREATMENT STANDARDS, WHICH CATEGORY AND SUBCATEGORY?

**SEE ATTACHMENT 15-2**

**15.40 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU**

HAS THE SIU CAUSED OR CONTRIBUTED TO ANY PROBLEMS (E.G., UPSETS, INTERFERENCE) AT THE TREATMENT WORKS IN THE PAST THREE YEARS?

YES

NO

**SEE ATTACHMENT 15-3**

IF YES, DESCRIBE EACH EPISODE

**15.45 RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE**

RCRA WASTE. DOES THE TREATMENT WORKS RECEIVE OR HAS IT IN THE PAST THREE YEARS RECEIVED RCRA HAZARDOUS WASTE BY TRUCK, RAIL, OR DEDICATED PIPE?

YES

NO

WASTE TRANSPORT METHOD BY WHICH RCRA WASTE IS RECEIVED (CHECK ALL THAT APPLY)

TRUCK

RAIL

DEDICATED PIPE

WASTE DESCRIPTION. GIVE EPA HAZARDOUS WASTE NUMBER AND AMOUNT (VOLUME OR MASS, SPECIFY UNITS).

EPA HAZARDOUS WASTE NUMBER	AMOUNT	UNITS

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME

MSD - GRAND GLAZIE

PERMIT NO.

MO- 0101362

OUTFALL NO.

001

PART F - INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES (CONTINUED)

15.50 CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER

REMEDIAL WASTE. DOES THE TREATMENT WORKS CURRENTLY (OR HAS IT BEEN NOTIFIED THAT IT WILL) RECEIVE WASTE FROM REMEDIAL ACTIVITIES?

YES  NO PROVIDE A LIST OF SITES AND THE REQUESTED INFORMATION FOR EACH CURRENT AND FUTURE SITE.

15.55 WASTE ORIGIN

DESCRIBE THE SITE AND TYPE OF FACILITY AT WHICH THE CERCLA/RCRA/OR OTHER REMEDIAL WASTE ORIGINATES (OR IS EXPECTED TO ORIGINATE IN THE NEXT FIVE YEARS).

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15.60 POLLUTANTS

LIST THE HAZARDOUS CONSTITUENTS THAT ARE RECEIVED (OR ARE EXPECTED TO BE RECEIVED), INCLUDE DATA ON VOLUME AND CONCENTRATION, IF KNOWN. (ATTACH ADDITIONAL SHEETS IF NECESSARY)

NONE

15.65 WASTE TREATMENT

A. IS THIS WASTE TREATED (OR WILL IT BE TREATED) PRIOR TO ENTERING THE TREATMENT WORKS?

YES  NO

IF YES, DESCRIBE THE TREATMENT (PROVIDE INFORMATION ABOUT THE REMOVAL EFFICIENCY):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. IS THE DISCHARGE (OR WILL THE DISCHARGE BE) CONTINUOUS OR INTERMITTENT?

CONTINUOUS  INTERMITTENT

IF INTERMITTENT, DESCRIBE DISCHARGE SCHEDULE.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

END OF PART F.

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

MSD-Grand Glaize STP

MO-0101362

Outfall-001

15.05 Yes, there is an approved pretreatment program.

15.10 A 2 non-categorical SIUs

15.10 B 6 categorical SIUs

<u>Name</u>	<u>Mailing address</u>
ALL STAR DISTRIBUTING COMPANY	15472 Manchester Road, Ellisville, MO 63011
BAUSCH & LOMB SURGICAL	3365 Tree Ct. Industrial Blvd, St. Louis, MO 63122
BAUSCH & LOMB SURGICAL	3365 Tree Ct. Industrial Blvd, St. Louis, MO 63122
DAIMLERCHRYSLER CORPORATION	1050 Dodge Drive, Fenton, MO 63026
ONYX OAK RIDGE LANDFILL INC	P O Box 428, Valley Park, MO 63088
REICHHOLD INC	249 St. Louis Avenue, Valley Park, MO 63088
SSM ST JOSEPH HOSPITAL OF KIRKWOOD	525 Couch Ave., St. Louis, MO 63122
TENET DES PERES HOSPITAL	2345 Dougherty Ferry Road, St. Louis, MO 63122
TRILLA-NESCO CORPORATION	2391 Cassens Drive, Fenton, MO 63026
VALLEY TECHNOLOGIES INC	600 St. Louis Avenue, Valley Park, MO 63088
WHITMIRE MICROGEN RESEARCH LABS	3568 Tree Ct. Industrial Blvd, St. Louis, MO 63122

<u>Name</u>	<u>Industrial processes</u>
ALL STAR DISTRIBUTING COMPANY	Metal Finishing
BAUSCH & LOMB SURGICAL	Metal Finishing
BAUSCH & LOMB SURGICAL	Metal Finishing
DAIMLERCHRYSLER CORPORATION	Metal Finishing
ONYX OAK RIDGE LANDFILL INC	Landfill
REICHHOLD INC	Organic Chemicals, Plastics, and Synthetic Fibers
SSM ST JOSEPH HOSPITAL OF KIRKWOOD	Hospital
TENET DES PERES HOSPITAL	Hospital
TRILLA-NESCO CORPORATION	Metal Finishing
VALLEY TECHNOLOGIES INC	Aluminum Forming
WHITMIRE MICROGEN RESEARCH LABS	Pesticide Chemicals

<u>Name</u>	<u>Principal Products</u>
ALL STAR DISTRIBUTING COMPANY	Medals and trophies
BAUSCH & LOMB SURGICAL	Surgical Instruments
BAUSCH & LOMB SURGICAL	Surgical Instruments
DAIMLERCHRYSLER CORPORATION	Light trucks and vans
ONYX OAK RIDGE LANDFILL INC	Sanitary and special waste landfill
REICHHOLD INC	Rethane and epoxy resins
SSM ST JOSEPH HOSPITAL OF KIRKWOOD	General hospital services
TENET DES PERES HOSPITAL	General hospital services
TRILLA-NESCO CORPORATION	Steel drums
VALLEY TECHNOLOGIES INC	Aluminum forgings
WHITMIRE MICROGEN RESEARCH LABS	Aerosol insecticides

<u>Name</u>	<u>Raw Materials</u>
ALL STAR DISTRIBUTING COMPANY	Brass & copper solutions, lead & tin alloys, unfinished trophies & medals
BAUSCH & LOMB SURGICAL	Stainless steel, titanium
BAUSCH & LOMB SURGICAL	
DAIMLERCHRYSLER CORPORATION	Premanufactured sub assemblies, paint
ONYX OAK RIDGE LANDFILL INC	sanitary and special waste
REICHHOLD INC	Vegetable oils, fatty acids, organic chemicals & solvents
SSM ST JOSEPH HOSPITAL OF KIRKWOOD	Patients, medical supplies
TENET DES PERES HOSPITAL	Patients, medical supplies
TRILLA-NESCO CORPORATION	Coil steel, paint
VALLEY TECHNOLOGIES INC	Aluminum
WHITMIRE MICROGEN RESEARCH LABS	Pesticides, solvents, propellents, soap

15.30 A	<u>Name</u>	<u>Process Wastewater GPD</u>
	ALL STAR DISTRIBUTING COMPANY	0 - intermittent
	BAUSCH & LOMB SURGICAL	200 - intermittent
	BAUSCH & LOMB SURGICAL	124 - intermittent
	DAIMLERCHRYSLER CORPORATION	1,020,097 - continuous
	ONYX OAK RIDGE LANDFILL INC	4,839 - continuous
	REICHHOLD INC	4,140 - intermittent
	SSM ST JOSEPH HOSPITAL OF KIRKWOOD	80,472 - continuous
	TENET DES PERES HOSPITAL	48,150 - continuous
	TRILLA-NESCO CORPORATION	42,574 - continuous
	VALLEY TECHNOLOGIES INC	490 - intermittent
	WHITMIRE MICROGEN RESEARCH LABS	316 - intermittent

15.30 A	<u>Name</u>	<u>Non-Process Wastewater GPD</u>
	ALL STAR DISTRIBUTING COMPANY	374 - intermittent
	BAUSCH & LOMB SURGICAL	2,750 - intermittent
	BAUSCH & LOMB SURGICAL	6,600 - intermittent
	DAIMLERCHRYSLER CORPORATION	186,990 - continuous
	ONYX OAK RIDGE LANDFILL INC	0 - intermittent
	REICHHOLD INC	56,360 - continuous
	SSM ST JOSEPH HOSPITAL OF KIRKWOOD	4,520 - intermittent
	TENET DES PERES HOSPITAL	3,350 - continuous
	TRILLA-NESCO CORPORATION	4,300 - continuous
	VALLEY TECHNOLOGIES INC	40,584 - continuous
	WHITMIRE MICROGEN RESEARCH LABS	1,017 - intermittent

15.35	<u>Name</u>	<u>Subject to Local Limits</u>
	ALL STAR DISTRIBUTING COMPANY	Yes
	BAUSCH & LOMB SURGICAL	Yes
	BAUSCH & LOMB SURGICAL	Yes
	DAIMLERCHRYSLER CORPORATION	Yes
	ONYX OAK RIDGE LANDFILL INC	Yes
	REICHHOLD INC	Yes
	SSM ST JOSEPH HOSPITAL OF KIRKWOOD	Yes
	TENET DES PERES HOSPITAL	Yes
	TRILLA-NESCO CORPORATION	Yes
	VALLEY TECHNOLOGIES INC	Yes
	WHITMIRE MICROGEN RESEARCH LABS	Yes

<u>Name</u>	<u>Subject to Categorical Pretreatment Standards</u>
ALL STAR DISTRIBUTING COMPANY	Yes
BAUSCH & LOMB SURGICAL	Yes
BAUSCH & LOMB SURGICAL	Yes
DAIMLERCHRYSLER CORPORATION	Yes
ONYX OAK RIDGE LANDFILL INC	No
REICHHOLD INC	Yes
SSM ST JOSEPH HOSPITAL OF KIRKWOOD	No
TENET DES PERES HOSPITAL	No
TRILLA-NESCO CORPORATION	Yes
VALLEY TECHNOLOGIES INC	Yes
WHITMIRE MICROGEN RESEARCH LABS	Yes

<u>Name</u>	<u>Which Category and Subcategory</u>
ALL STAR DISTRIBUTING COMPANY	433 A
BAUSCH & LOMB SURGICAL	433 A
BAUSCH & LOMB SURGICAL	433 A
DAIMLERCHRYSLER CORPORATION	433 A
ONYX OAK RIDGE LANDFILL INC	
REICHHOLD INC	414 E
SSM ST JOSEPH HOSPITAL OF KIRKWOOD	
TENET DES PERES HOSPITAL	
TRILLA-NESCO CORPORATION	433 A
VALLEY TECHNOLOGIES INC	467 D
WHITMIRE MICROGEN RESEARCH LABS	455 C

long term average design flow.

167MGID  
(Dry weather)

- Hydraulic capacity -

Plant Expansion →

design flow not changing

building new outfall -

Param ~~Norton~~ <sup>Norton</sup>

Oct 2004  
LeMay

WARS

800

33



314-768-

167

2779

Peak  
Hydro

15.40	<u>Name</u>	<u>Caused Problems at Treatment Works</u>
	ALL STAR DISTRIBUTING COMPANY	No
	BAUSCH & LOMB SURGICAL	No
	BAUSCH & LOMB SURGICAL	No
	DAIMLERCHRYSLER CORPORATION	No
	ONYX OAK RIDGE LANDFILL INC	No
	REICHHOLD INC	No
	SSM ST JOSEPH HOSPITAL OF KIRKWOOD	No
	TENET DES PERES HOSPITAL	No
	TRILLA-NESCO CORPORATION	No
	VALLEY TECHNOLOGIES INC	No
	WHITMIRE MICROGEN RESEARCH LABS	No
15.45	No	
15.50	No	