STATE OF MISSOURI

# DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

# MISSOURI STATE OPERATING PERMIT

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

| | |
|---|---|
| Permit No. | MO-0023213 |
| Owner: | City of Dexter |
| Address: | 301 East Stoddard Street, Dexter, MO 63841 |
| Continuing Authority: | Same as above |
| Address: | Same as above |
| Facility Name: | Dexter East Wastewater Treatment Facility |
| Facility Address: | South terminus of Fairground Drive, Dexter, MO 63841 |
| Legal Description: | NE ¼, SW ¼, Sec. 26, T25N, R10E, Stoddard County |
| UTM Coordinates: | X= 772434, Y= 4074566 |
| Receiving Stream: | Tributary to Lateral #2 Main Ditch |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed No.: | (08020204-0502) |

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

## FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "C" Operator.
Bar screen / six (6) cell complete mix activated sludge lagoon – EDI ATLAS design – one (1) cell is complete mix / four (4) cells are partial mix / one (1) cell is unaerated for settling / sludge is retained in lagoon / two (2) old lagoon cells used for flow equalization.
Design population equivalent is 18,500.
Design flow is 1.8 MGD.
Actual flow is 1.3 MGD.
Design sludge production is 280 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

February 1, 2017
Effective Date

Harry D. Bozoian, Director, Department of Natural Resources

March 31, 2021
Expiration Date

David J. Lamb, Acting Director, Water Protection Program

| OUTFALL #001 | TABLE A-1<br>INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS |
|---|---|

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **February 1, 2017** and remain in effect through **January 31, 2021**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

| EFFLUENT PARAMETER(S) | UNITS | INTERIM EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|---|---|
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Flow | MGD | * | | * | once/day | 24 hr. total |
| Biochemical Oxygen Demand$_5$ | mg/L | | 45 | 30 | once/week | grab |
| Total Suspended Solids | mg/L | | 45 | 30 | once/week | grab |
| *E. coli* (Note 1) | #/100mL | | * | * | once/week | grab |
| Ammonia as N<br>(Apr 1 – Sep 30)<br>(Oct 1 – Mar 31) | mg/L | 2.6<br>4.9 | | 1.4<br>3.0 | once/week | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2017. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Oil & Grease | mg/L | 15 | | 10 | once/quarter*** | grab |
| Total Phosphorus | mg/L | * | | * | once/quarter*** | grab |
| Total Nitrogen | mg/L | * | | * | once/quarter*** | grab |
| Total Hardness | mg/L | * | | * | once/quarter*** | grab |
| Cadmium, Total Recoverable | µg/L | * | | * | once/quarter*** | grab |
| Iron, Total Recoverable | µg/L | * | | * | once/quarter*** | grab |
| Selenium, Total Recoverable | µg/L | 8.3 | | 4.0 | once/quarter*** | grab |
| Zinc, Total Recoverable | µg/L | * | | * | once/quarter*** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2017. | | | | | | |
| EFFLUENT PARAMETER(S) | UNITS | MINIMUM | | MAXIMUM | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| pH – Units ** | SU | 6.5 | | 9.0 | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2017. | | | | | | |

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged.
*** See table on Page 3 for quarterly sampling requirements.

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).

| OUTFALL #001 | TABLE A-2<br>FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS |
|---|---|

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **February 1, 2021** 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 |
| Biochemical Oxygen Demand$_5$ | mg/L | | 45 | 30 | once/week | grab |
| Total Suspended Solids | mg/L | | 45 | 30 | once/week | grab |
| *E. coli* (Note 1) | #/100mL | | 1030 | 206 | once/week | grab |
| Ammonia as N<br>(Apr 1 – Sep 30)<br>(Oct 1 – Mar 31) | mg/L | 2.6<br>4.9 | | 1.4<br>3.0 | once/week | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| Oil & Grease | mg/L | 15 | | 10 | once/quarter*** | grab |
| Total Phosphorus | mg/L | * | | * | once/quarter*** | grab |
| Total Nitrogen | mg/L | * | | * | once/quarter*** | grab |
| Total Hardness | mg/L | * | | * | once/quarter*** | grab |
| Cadmium, Total Recoverable | µg/L | * | | * | once/quarter*** | grab |
| Iron, Total Recoverable | µg/L | * | | * | once/quarter*** | grab |
| Selenium, Total Recoverable | µg/L | 8.3 | | 4.0 | once/quarter*** | grab |
| Zinc, Total Recoverable | µg/L | 180.7 | | 53.5 | once/quarter*** | grab |
| MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2021. | | | | | | |
| EFFLUENT PARAMETER(S) | UNITS | MINIMUM | | MAXIMUM | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| pH – Units ** | SU | 6.5 | | 9.0 | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2021. | | | | | | |

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged.
*** See table on Page 3 for quarterly sampling requirements.

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).

| Minimum Sampling Requirements | | | |
|---|---|---|---|
| **Quarter** | **Months** | **Oil & Grease, Total Phosphorus, Total Nitrogen, Total Hardness, and Total Recoverable Metals** | **Report is Due** |
| First | January, February, March | Sample at least once during any month of the quarter | April 28th |
| Second | April, May, June | Sample at least once during any month of the quarter | July 28th |
| Third | July, August, September | Sample at least once during any month of the quarter | October 28th |
| Fourth | October, November, December | Sample at least once during any month of the quarter | January 28th |

| **OUTFALL #001** | **TABLE A-3<br>WHOLE EFFLUENT TOXICITY<br>FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS** | | | | | |
|---|---|---|---|---|---|---|
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **February 1, 2017** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: | | | | | | |
| EFFLUENT PARAMETER(S) | UNITS | **FINAL EFFLUENT LIMITATIONS** | | | MONITORING REQUIREMENTS | |
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Acute Whole Effluent Toxicity (Note 2) | $TU_a$ | * | | | once/year | grab |
| MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE SEPTEMBER 28, 2017. | | | | | | |
| Chronic Whole Effluent Toxicity (Note 3) | $TU_c$ | * | | | once/permit cycle | grab |
| WET TEST REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE SEPTEMBER 28, 2019. | | | | | | |

| **TABLE B<br>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 **February 1, 2017** 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 |
| Biochemical Oxygen Demand$_5$ | mg/L | once/month | grab |
| Total Suspended Solids | mg/L | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2017. | | | |

* Monitoring requirement only.

Note 2 – The Acute WET test shall be conducted once per year during the 1st, 2nd, and 4th year of the permit cycle. See Special Condition #22 for additional requirements.

Note 3 –The Chronic WET test shall be conducted during the 3rd year of the permit cycle. See Special Condition #23 for additional requirements.

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 including acute and chronic Whole Effluent Toxicity (WET) tests, 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 Publically 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. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.

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

6. 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)

7. Changes in existing pollutants or the addition of new pollutants to the treatment facility

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

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

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

10. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the Department for review and, if deemed necessary, approval.

11. The permittee has developed and is currently implementing a program for maintenance and repair of the collection system as required by the Abatement Order on Consent (AOC) agreed to on March 28, 2013. The permittee shall continue to submit semi-annual reports in April and October to the Southeast Regional Office which address measures taken to locate and eliminate sources of inflow and infiltration into the collection system serving this facility.

12. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southeast Regional Office or by using the online Sanitary Sewer Overflow/Facility Bypass Application, located at: http://dnr.mo.gov/modnrcag/ 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.

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.

D. SPECIAL CONDITIONS (continued)

16. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.

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

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

19. A minimum of two (2) feet freeboard must be maintained in each lagoon cell. A lagoon level gauge, which clearly marks the minimum freeboard level, shall be provided in each lagoon cell.

20. The berms of the lagoon cells shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.

21. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the lagoon cells and to divert stormwater runoff around the lagoon and protect embankments from erosion.

22. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
        - The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
        - The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
    (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
    (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
    (d) The Allowable Effluent Concentration (AEC) for this facility is 100% with the dilution series being: 100%, 50%, 25%, 12.5%, and 6.25%.
    (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (f) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°F), pH (SU), Conductivity (µmohs/cm), Dissolved Oxygen (mg/L), Total Residual Chlorine (mg/L), Un-ionized Ammonia (mg/L), Total Recoverable Cadmium (µg/L), Total Recoverable Iron (µg/L), Total Recoverable Selenium (µg/L), Total Recoverable Zinc (µg/L), Total Alkalinity (mg/L), and Total Hardness (mg/L).
    (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent ($LC_{50}$) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

D. SPECIAL CONDITIONS (continued)

23. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013; Table IA, 40 CFR Part 136).* The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
        - The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
        - The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
    (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
    (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
    (d) The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
    (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (f) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°F), pH (SU), Conductivity (µmohs/cm), Dissolved Oxygen (mg/L), Total Residual Chlorine (mg/L), Un-ionized Ammonia (mg/L), Total Recoverable Cadmium (µg/L), Total Recoverable Iron (µg/L), Total Recoverable Selenium (µg/L), Total Recoverable Zinc (µg/L), Total Alkalinity (mg/L), and Total Hardness (mg/L).
    (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration ($IC_{25}$) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

E. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations for *E. coli* and zinc as soon as reasonably achievable or no later than **4 years** of the effective date of this permit.

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.

2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date.

3. Within **4 years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits for *E. coli* and zinc.

Please submit progress reports to the Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Blvd, Poplar Bluff, MO 63901.

# MISSOURI DEPARTMENT OF NATURAL RESOURCES
# FACT SHEET
# FOR THE PURPOSE OF RENEWAL
# OF
# MO-0023213
# DEXTER EAST WASTEWATER TREATMENT FACILITY

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:
Bar screen / six (6) cell complete mix activated sludge lagoon – EDI ATLAS design – one (1) cell is complete mix / four (4) cells are partial mix / one (1) cell is unaerated for settling / sludge is retained in lagoon / two (2) old lagoon cells used for flow equalization.

Application Date: 03/21/16
Expiration Date: 11/24/14

**OUTFALL(S) TABLE:**

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | EFFLUENT TYPE |
|---|---|---|---|
| #001 | 2.79 | Secondary | Municipal |

Facility Performance History:
The City of Dexter's wastewater is treated by two treatment facilities. The West WWTF receives the majority of the City's domestic wastewater. The East WWTF receives some domestic wastewater, but it primarily receives industrial wastewater from a poultry processing facility owned by Tyson Foods, Inc.

This facility was last inspected on November 13, 2013. The facility was found to be in non-compliance for failure to meet effluent limits found in the operating permit. The City of Dexter is under an Abatement Order on Consent agreed to on March 28, 2013 for chronic ammonia violations. A review of the past five years of monitoring reports submitted by the permittee shows the following exceedances (month/year): $BOD_5$ in 4/12, 6/12-12/12, 2/13, 4/13-11/13, 7/14-10/14, 1/15, 7/15-10/15, and 7/16; TSS in 10/11, 5/12-7/12, 9/12, 10/12, 6/13, 8/14, 9/14, and 7/16; and ammonia in every month of the reviewed DMRs.

The City is working with Waters Engineering to meet ammonia limits. Starting in February 2011, the City began to collect numerous samples from various locations within the treatment plant and discovered ammonia levels increase as wastewater passes through the plant. Also, a number of the baffles were found to be malfunctioning which allowed sludge and inadequately treated wastewater to bypass into other cells. The issues with baffles have since been addressed. The City is pursuing a Construction Permit to reroute portions of wastewater around the complete mix cell to the first partial mix cell where it would still receive secondary treatment before discharge. This is in effort to prevent mixed liquors from washing out of the complete mix cell when flows are high.

Facility Performance History (continued):
The City has also learned that Tyson Foods, Inc., the chicken processing plant from which this facility receives a majority of its flow, uses a disinfectant that contains Quaternary Ammonia Compounds (QACs). Products that contain QACs may hinder or kill nitrifying bacteria at low concentrations and may hinder heterotrophic bacteria at high concentrations. In an effort to correct this, activated sludge is trucked from a WWTF in Union City, Tennessee that receives a waste load similar to that of the Dexter East WWTF. It is mixed with influent at the headworks. The anticipation is that the bacteria from the Union City plant have been acclimated to QACs as that plant is able to meet Tennessee's permit limit for ammonia. They hope the bacteria will thrive at the Dexter East WWTF and bring the ammonia levels down to comply with the operating permit.

Comments:
This facility discharges to a tributary to Lateral #2 Main Ditch which flows 0.1 miles to a tributary 8-20-13 MUDD V1.0 (C) (3960) which is now classified as EPA has approved the Department's new stream classifications. A schedule of compliance has been included in the permit to meet final effluent limitations for *E. coli* which are protective of the WBC-B use designation of the stream.

Changes in this permit include the addition of: *E. coli* and zinc effluent limits; and total phosphorus, total nitrogen, cadmium, iron, hardness, and chronic whole effluent toxicity monitoring. Changes also include the removal of copper monitoring. See Part VII of the Fact Sheet for further information regarding the addition and removal of effluent parameters.

Special conditions were updated to include the addition of reporting of Non-detects requirements, bypass reporting requirements, and chronic WET testing requirements.

## Part II – Operator Certification Requirements

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

Owned or operated by or for a

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

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

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

Operator's Name: Tom Espey
Certification Number: 1025
Certification Level: C

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

## Part III– Operational Monitoring

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

## Part IV – Receiving Stream Information

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

| WATER-BODY NAME | CLASS | WBID | DESIGNATED USES* | 12-DIGIT HUC | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---|---|---|---|---|---|
| Tributary to Lateral #2 Main Ditch | NA | NA | General Criteria | 08020204-0502 | 0.1 |
| 8-20-13 MUDD V1.0 | C | 3960 | AQL, WBC-B, SCR, HHP, IRR, LWW | | |

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

Uses which may be found in the receiving streams table, above:

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

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

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

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

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

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

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

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

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

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

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

**DWS** = Drinking Water Supply;

**IND** = Industrial water supply

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

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

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

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

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

| RECEIVING STREAM | LOW-FLOW VALUES (CFS) | | |
|---|---|---|---|
| | 1Q10 | 7Q10 | 30Q10 |
| Tributary to Lateral #2 Main Ditch | 0.0 | 0.0 | 0.0 |

**MIXING CONSIDERATIONS**

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

**RECEIVING STREAM MONITORING REQUIREMENTS:**

No receiving water monitoring requirements recommended at this time.

Receiving Water Body's Water Quality

This facility discharges to a tributary that flows about two miles until it reaches Lateral #2 Main Ditch (P) (3105) which is listed on the 2016 Missouri 303(d) List for dissolved oxygen and temperature. Channelization is listed as the source of this impairment, not the Dexter WWTFs.

Lateral #2 Main Ditch (P) (3105) has a TMDL approved December 10, 2008 for sediment. The TMDL states the following, "Based on the assessment of sources, point sources discharging municipal or domestic wastewater do not significantly contribute to the water quality impairment relative to sediment impacts on stream biology. Therefore, no net reduction in current permit limits is required for the Dexter East Lagoon… The WLAs for these facilities are set at the current permit limits and conditions."

## Part V – Rationale and Derivation of Effluent Limitations & Permit Conditions

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

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

**ANTI-BACKSLIDING:**
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(o); 40 CFR Part 122.44(l)] that requires a reissued permit to be as stringent as the previous permit with some exceptions. Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

☒ - Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

- Effluent limitations were re-calculated for selenium based new information derived from discharge monitoring reports and on the current Missouri Water Quality Standards for selenium. The newly established limitations are still protective of water quality."
- WET testing requirements were changed from pass/fail to monitoring only for toxic units. This change reflects modifications to Missouri's Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requiring the department to establish effluent limitations to control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient numerical data to conduct an analytical reasonable potential analysis. The permit writer has made a reasonable potential determination which concluded the facility does not have reasonable potential at this time but monitoring is required. Implementation of the toxic unit monitoring requirement will allow the department to effect numeric criteria in accordance with water quality standards established under §303 of the CWA.

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

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

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

☒ - The facility does not have stormwater discharges or the stormwater outfalls onsite have no industrial exposure.

**AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:**
As per [10 CSR 20-6.010(3)(B)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

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

☒ - Permittee is not authorized to land apply biosolids. Sludge/biosolids are stored in the lagoon. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from lagoons.

**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 City of Dexter is under an Abatement Order on Consent agreed to on March 28, 2013 for chronic ammonia violations.

**DISCHARGE MONITORING REPORTS:**
On July 30, 2013, EPA proposed the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which requires electronic reporting of NPDES information rather than the currently-required paper-based reports from permitted facilities. To comply with the upcoming federal rule, the Department is asking all permittees to begin submitting discharge monitoring data online. For permittees already using the Department's eDMR data reporting system, those permittees will be required to exclusively use the eDMR data reporting system.

☒ - The permittee/facility is not currently using the eDMR data reporting system. To sign up for the eDMR system, visit the Department's eDMR page at http://dnr.mo.gov/env/wpp/edmr.htm.

**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

☒ - 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)(1)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

☒ - A RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS.**

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

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

**SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):**
Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

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

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

☒ - The permittee has developed and is currently implementing a program for maintenance and repair of the collection system as required by the Abatement Order on Consent (AOC) agreed to on March 28, 2013. The permittee shall continue to submit semi-annual reports in April and October to the Southeast Regional Office which address measures taken to locate and eliminate sources of inflow and infiltration into the collection system serving this facility.

**SCHEDULE OF COMPLIANCE (SOC):**

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

A SOC is not allowed:

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

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

☒ - The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits for *E. coli* and zinc. The four year schedule of compliance allowed for this facility should provide adequate time to evaluate operations, obtain an engineering report, hold a bond election, obtain a construction permit and implement upgrades required to meet *E. coli* effluent limits. In this time, operational adjustments can be made to comply with final effluent limits for zinc. The schedule has been established at 4 years in accordance with the Department's "Schedule of Compliance, Policy for Staff Drafting Operating Permits".

**SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:**

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

☒ - The permittee does not have a department approved Sewer Extension Authority Supervised Program.

**STORMWATER POLLUTION PREVENTION PLAN (SWPPP):**

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

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

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

☒ - At this time, the permittee is not required to develop and implement a SWPPP as they are covered under the No Exposure Certification (MO-NX00175) for Exclusion from NPDES Stormwater Permitting issued March 10, 2016.

**VARIANCE:**
As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

☒ - This operating permit is not drafted under premises of a petition for variance.

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

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

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

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

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

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

Number of Samples "n":
Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used

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

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

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

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

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

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

- ☒ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility exceeds its design population equivalent (PE) for $BOD_5$ whether or not its design flow is being exceeded.
- ☐ Facility (whether primarily domestic or industrial) alters its production process throughout the year.
- ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- ☒ Facility has Water Quality-based Effluent Limitations for toxic substances (other than $NH_3$)
- ☒ Facility is a municipality with a Design Flow $\geq$ 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.

☒ - This facility does not anticipate bypassing.

**303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):**
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

☒ - This facility discharges to a tributary that flows about two miles until it reaches Lateral #2 Main Ditch (P) (3105) which is listed on the 2016 Missouri 303(d) List for dissolved oxygen and temperature. Channelization is listed as the source of this impairment, not the Dexter WWTFs.

☒ - Lateral #2 Main Ditch (P) (3105) has a TMDL approved December 10, 2008 for sediment. The TMDL states the following, "Based on the assessment of sources, point sources discharging municipal or domestic wastewater do not significantly contribute to the water quality impairment relative to sediment impacts on stream biology. Therefore, no net reduction in current permit limits is required for the Dexter East Lagoon… The WLAs for these facilities are set at the current permit limits and conditions."

## 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 – 2.6 mg/L daily maximum, 1.4 mg/L monthly average.
Winter – 4.9 mg/L daily maximum, 3.0 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the <u>estimated</u> effluent limitations for a facility in a location such as this that discharges to a receiving stream with no mixing will be:

Summer – 1.2 mg/L daily maximum, 0.7 mg/L monthly average.
Winter – 3.7 mg/L daily maximum, 2.2 mg/L monthly average.

These estimated limits above are based in part on the actual performance of the plant at the time of the drafting of this permit and should not be construed as future effluent limitations. Future effluent limits, based on the EPA's 2013 water quality criteria for ammonia, will depend in part on the actual performance of the facility at the time the permit is renewed.

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)]
- ☐ 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 | Previous Permit Limit | Sampling Frequency | Reporting Frequency | Sample Type **** |
|---|---|---|---|---|---|---|---|---|---|
| Flow | MGD | 1 | * | | * | */* | Daily | Monthly | T |
| $BOD_5$ | mg/L | 1 | | 45 | 30 | 45/30 | Weekly | Monthly | G |
| TSS | mg/L | 1, 8 | | 45 | 30 | 45/30 | Weekly | Monthly | G |
| *Escherichia coli* ** | #/100mL | 1, 3 | | 1030 | 206 | *** | Weekly | Monthly | G |
| Ammonia as N (Apr 1 –Sep 30) | mg/L | 2, 3 | 2.6 | | 1.4 | 8.4/3.2 | Weekly | Monthly | G |
| Ammonia as N (Oct 1 – Mar 31) | mg/L | 2, 3 | 4.9 | | 3.0 | 12.1/4.6 | Weekly | Monthly | G |
| Oil & Grease | mg/L | 1, 3 | 15 | | 10 | 15/10 | Quarterly | Quarterly | G |
| Total Nitrogen | mg/L | 1 | * | | * | *** | Quarterly | Quarterly | G |
| Total Phosphorus | mg/L | 1 | * | | * | *** | Quarterly | Quarterly | G |
| Total Hardness | µg/L | 7 | * | | * | *** | Quarterly | Quarterly | G |
| Cadmium, Total Recoverable | µg/L | 7 | * | | * | *** | Quarterly | Quarterly | G |
| Iron, Total Recoverable | µg/L | 7 | * | | * | *** | Quarterly | Quarterly | G |
| Selenium, Total Recoverable | µg/L | 2, 3 | 8.3 | | 4.0 | 8.1/4.0 | Quarterly | Quarterly | G |
| Zinc, Total Recoverable | µg/L | 2, 3 | 180.7 | | 53.5 | */* | Quarterly | Quarterly | G |
| Acute Whole Effluent Toxicity | TUa | 1, 9 | * | | | Pass/Fail | Annually | Annually | G |
| Chronic Whole Effluent Toxicity | TUc | 1, 9 | * | | | *** | Once/permit cycle | Once/permit cycle | G |
| PARAMETER | Unit | Basis for Limits | Minimum | | Maximum | Previous Permit Limit | Sampling Frequency | Reporting Frequency | Sample Type |
| pH | SU | 1 | 6.5 | | 9.0 | 6.0-9.0 | Monthly | Monthly | G |

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

**** - T = 24-hr. total
G = Grab

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

**OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand ($BOD_5$).** 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.**

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five E. coli samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = $5^{th}$ root of (1)(4)(6)(10)(5) = $5^{th}$ root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen**. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. 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: $C_e$ = ((2.79 + 0.0)1.5 – (0.0 * 0.01))/2.79
$C_e$ = 1.5 mg/L
Acute WLA: $C_e$ = ((2.79 + 0.0)12.1 – (0.0 * 0.01))/2.79
$C_e$ = 12.1 mg/L

$LTA_c$ = 1.5 mg/L (0.874) = 1.31 mg/L [CV = 0.32, $99^{th}$ Percentile, 30 day avg.]
$LTA_a$ = 12.1 mg/L (0.506) = 6.12 mg/L [CV = 0.32, $99^{th}$ Percentile]

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

MDL = 1.31 mg/L (1.98) = **2.6 mg/L** [CV = 0.32, $99^{th}$ Percentile]
AML = 1.31 mg/L (1.10) = **1.4 mg/L** [CV = 0.32, $95^{th}$ Percentile, n =30]

Winter: October 1 – March 31
Chronic WLA: $C_e$ = ((2.79 + 0.0)3.1 – (0.0 * 0.01))/2.79
$C_e$ = 3.1 mg/L
Acute WLA: $C_e$ = ((2.79 + 0.0)12.1 – (0.0 * 0.01))/2.79
$C_e$ = 12.1 mg/L

$LTA_c$ = 3.1 mg/L (0.893) = 2.77 mg/L [CV = 0.27, $99^{th}$ Percentile, 30 day avg.]
$LTA_a$ = 12.1 mg/L (0.560) = 6.78 mg/L [CV = 0.27, $99^{th}$ Percentile]

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

MDL = 2.77 mg/L (1.78) = **4.9 mg/L** [CV = 0.27, $99^{th}$ Percentile]
AML = 2.77 mg/L (1.08) = **3.0 mg/L** [CV = 0.27, $95^{th}$ Percentile, n =30]

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

- **Total Phosphorus and Total Nitrogen**. Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Total Nitrogen shall be determined by testing for Total Kjeldahl Nitrogen (TKN) and Nitrate + Nitrite and reporting the sum of the results (reported as N). Nitrate + Nitrite can be analyzed together or separately.

- **Total Hardness**. Monitoring only to develop a site-specific hardness for determining reasonable potential and calculating hardness-dependent metals limits.

- **pH**. 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

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

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

| METAL | CONVERSION FACTORS | |
|---|---|---|
| | ACUTE | CHRONIC |
| Zinc | 0.978 | 0.986 |

- **Cadmium, Total Recoverable**. Expanded Effluent Testing in the renewal application showed results that exceed the water quality criteria for this parameter. Monitoring only to determine if there is a reasonable potential for this pollutant to cause or contribute to an instream water quality violation.

- **Iron, Total Recoverable**. Expanded Effluent Testing in the renewal application showed results that exceed the water quality criteria for this parameter. Monitoring only to determine if there is a reasonable potential for this pollutant to cause or contribute to an instream water quality violation.

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

  Chronic WLA: $C_e = ((2.79 + 0.0)5 – (0.0 * 0.0))/2.79$
  $C_e = 5$ µg/L

  $LTA_c = 5\ (0.509) = 2.5$ µg/L [CV = 0.64, 99th Percentile]

  MDL = 2.5 (3.28) = **8.3 µg/L** [CV = 0.64, 99th Percentile]
  AML = 2.5 (1.59) = **4.0 µg/L** [CV = 0.64, 95th Percentile, n = 4]

- **Zinc, Total Recoverable**. Protection of Aquatic Life Chronic and Acute Criteria = 176.71 µg/L.

  Chronic = 176.71/0.986 = 179.22 µg/L
  Acute = 176.71/0.978 = 180.69 µg/L

  Chronic WLA: $C_e = ((2.79 + 0.0)179.22 – (0.0 * 0.0))/2.79$
  $C_e = 179.22$ µg/L
  Acute WLA: $C_e = ((2.79 + 0.0)180.69 – (0.0 * 0.0))/2.79$
  $C_e = 180.69$ µg/L

  $LTA_c = 179.22\ (0.117) = 20.9$ µg/L [CV = 0.40, 99th Percentile]
  $LTA_a = 180.69\ (0.082) = 14.84$ µg/L [CV = 0.40, 99th Percentile]

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

  MDL = 14.84 (12.18) = **180.7 µg/L** [CV = 4.01, 99th Percentile]
  AML = 14.84 (3.61) = **53.5 µg/L** [CV = 4.01, 95th Percentile, n = 4]

**Whole Effluent Toxicity**

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

  Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

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

  Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

- **Parameters Removed**. Copper monitoring has been removed after statistical analysis using the past five years of copper data submitted by the permittee showed no reasonable potential for a violation of copper water quality standards.

**Sampling Frequency Justification:**
The sampling and reporting frequency for oil and grease has been reduced from monthly to quarterly due to satisfactory facility performance. It has also been reduced to quarterly for all metals as the effluent results show low variability. pH sampling and reporting frequency has been reduced from weekly to monthly also due to the low variability in effluent results. It is required that there are weekly samples taken for *E. coli*, per 10 CSR 20-7.015(9)(D)6.A. Chronic WET testing is required to be sampled no less than once per permit cycle for all facilities designated as majors. For all other parameters, the sampling and reporting frequency has been reassessed and found to be appropriate; therefore, it has been retained from the previous permit.

**Sampling Type Justification:**
As per 10 CSR 20-7.015, $BOD_5$, TSS and WET test samples collected for lagoons may be grab samples. Grab samples must be collected for pH, Ammonia as N, *E. coli*, Oil & Grease, metals, Total Nitrogen, and Total Phosphorus. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia, and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia, Oil & Grease, metals, Total Nitrogen, and Total Phosphorus samples must be immediately preserved, these samples are to be collected as a grab. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

## 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 facility has requested a waiver from the department conducting a "finding of affordability". The cover letter from the City of Dexter accompanying the renewal application states, "It is anticipated that disinfection facilities will be required on the future permit and we will be capable of financing those through our capital improvement funds. Unless other more costly improvements are needed, we do not feel the need to request or require a financial analysis for our facility." Per RSMo 644.145 2.c, the department shall not be required to make a finding of affordability when the permit applicant certifies that the applicable requirements are affordable to implement or otherwise waives 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. This permit will expire in the 1st Quarter of calendar year 2021.

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

☒ - The Public Notice period for this operating permit was from November 18, 2016 – December 19, 2016. Responses to the Public Notice of this operating permit did not warrant the modification of effluent limits and/or the terms and conditions of this permit.

**DATE OF FACT SHEET**: SEPTEMBER 13, 2016

**COMPLETED BY:**

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

# Appendices

## APPENDIX - CLASSIFICATION WORKSHEET:

| ITEM | POINTS POSSIBLE | POINTS ASSIGNED |
|---|---|---|
| Maximum Population Equivalent (P.E.) served (Max 10 pts.) | 1 pt./10,000 PE or major fraction thereof. | 2 |
| Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.) | 1 pt. / MGD or major fraction thereof. | 2 |
| EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY: | | |
| Missouri or Mississippi River | 0 | - |
| All other stream discharges except to losing streams and stream reaches supporting whole body contact | 1 | 1 |
| Discharge to lake or reservoir outside of designated whole body contact recreational area | 2 | - |
| Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation | 3 | - |
| PRELIMINARY TREATMENT – Headworks | | |
| Screening and/or comminution | 3 | 3 |
| Grit removal | 3 | - |
| Plant pumping of main flow (lift station at the headworks) | 3 | - |
| PRIMARY TREATMENT | | |
| Primary clarifiers | 5 | - |
| Combined sedimentation/digestion | 5 | - |
| Chemical addition (except chlorine, enzymes) | 4 | - |
| REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only) | | |
| Push – button or visual methods for simple test such as pH, Settleable solids | 3 | - |
| Additional procedures such as DO, COD, BOD, titrations, solids, volatile content | 5 | 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 | - |
| ALTERNATIVE FATE OF EFFLUENT | | |
| Direct reuse or recycle of effluent | 6 | - |
| Land Disposal – low rate | 3 | - |
| High rate | 5 | - |
| Overland flow | 4 | - |
| Total from page **ONE (1)** | ---- | 13 |

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

| ITEM | POINTS POSSIBLE | POINTS ASSIGNED |
|---|---|---|
| VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances) | | |
| Variation do not exceed those normally or typically expected | 0 | 0 |
| Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow | 2 | - |
| Recurring deviations or excessive variations of more than 200 % in strength and/or flow | 4 | - |
| Raw wastes subject to toxic waste discharge | 6 | - |
| SECONDARY TREATMENT | | |
| Trickling filter and other fixed film media with secondary clarifiers | 10 | - |
| Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches) | 15 | 15 |
| Stabilization ponds without aeration | 5 | - |
| Aerated lagoon | 8 | - |
| Advanced Waste Treatment Polishing Pond | 2 | - |
| Chemical/physical – without secondary | 15 | - |
| Chemical/physical – following secondary | 10 | - |
| Biological or chemical/biological | 12 | - |
| Carbon regeneration | 4 | - |
| DISINFECTION | | |
| Chlorination or comparable | 5 | - |
| Dechlorination | 2 | - |
| On-site generation of disinfectant (except UV light) | 5 | - |
| UV light | 4 | - |
| SOLIDS HANDLING – SLUDGE | | |
| Solids Handling Thickening | 5 | - |
| Anaerobic digestion | 10 | - |
| Aerobic digestion | 6 | - |
| Evaporative sludge drying | 2 | - |
| Mechanical dewatering | 8 | - |
| Solids reduction (incineration, wet oxidation) | 12 | - |
| Land application | 6 | - |
| Total from page **TWO (2)** | ---- | 15 |
| Total from page **ONE (1)** | --- | 13 |
| Grand Total | --- | 28 |

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

**APPENDIX – RPA RESULTS:**

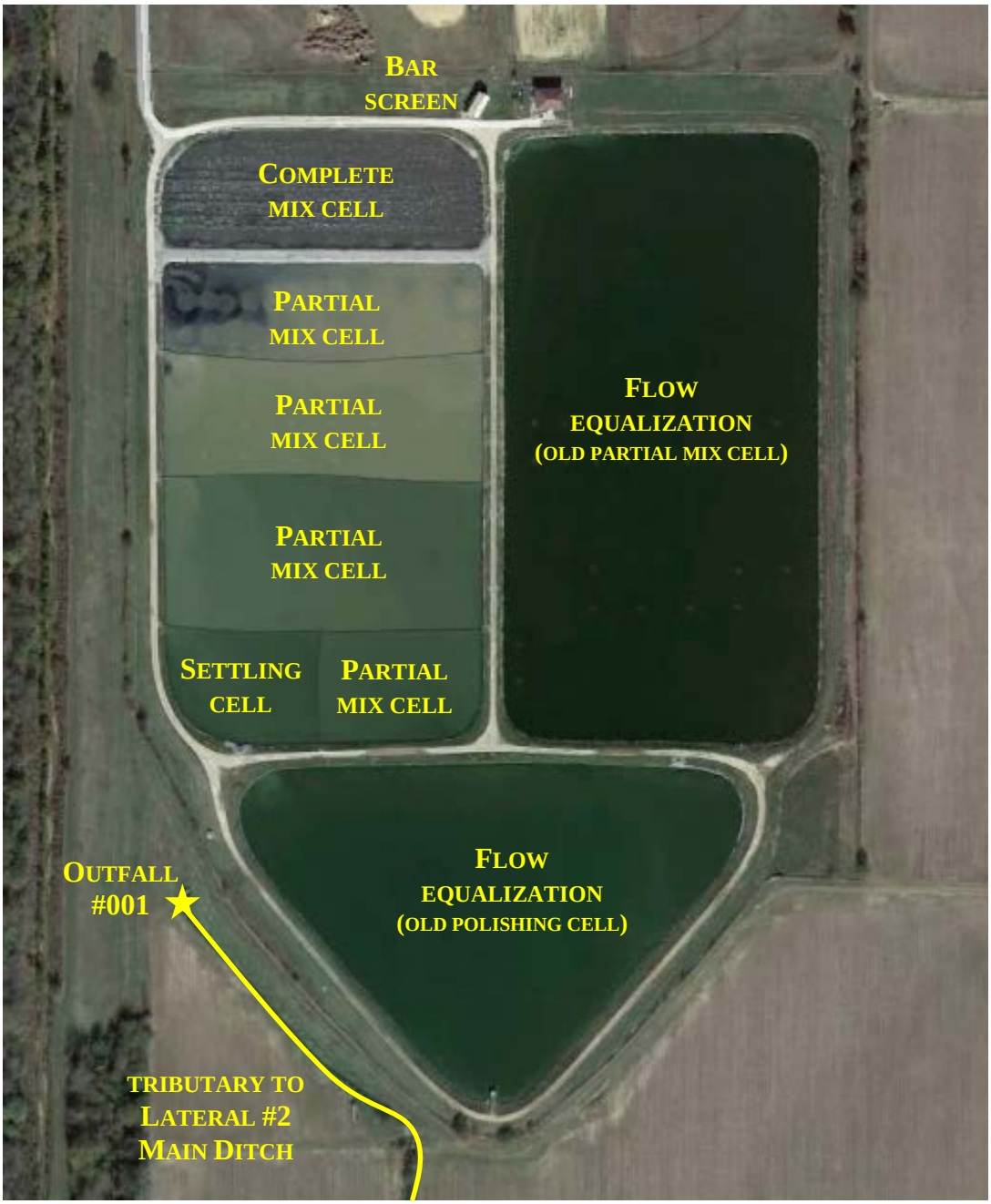
| Parameter | CMC* | RWC Acute* | CCC* | RWC Chronic* | n** | Range max/min | CV*** | MF | RP Yes/No |
|---|---|---|---|---|---|---|---|---|---|
| Total Ammonia as Nitrogen (Summer) mg/L | 12.1 | 62.40 | 1.5 | 62.40 | 29.00 | 41.8/8.45 | 0.32 | 1.49 | YES |
| Total Ammonia as Nitrogen (Winter) mg/L | 12.1 | 65.05 | 3.1 | 65.05 | 30.00 | 46.7/8.54 | 0.27 | 1.39 | YES |
| Total Ammonia as Nitrogen (Summer) mg/L *(future)* | 3.4 | 62.40 | 0.7 | 62.40 | 29.00 | 41.8/8.45 | 0.32 | 1.49 | YES |
| Total Ammonia as Nitrogen (Winter) mg/L *(future)* | 8.1 | 65.05 | 2.3 | 65.05 | 30.00 | 46.7/8.54 | 0.27 | 1.39 | YES |
| Copper, Total Recoverable | 22.0 | 12.89 | 14.1 | 12.89 | 59.00 | 15/1 | 1.37 | 0.86 | NO |
| Selenium, Total Recoverable | NA | NA | 5.0 | 24.13 | 59.00 | 24/5 | 0.64 | 1.01 | YES |
| Zinc, Total Recoverable | 180.7 | 446.27 | 179.2 | 446.27 | 59.00 | 275/1 | 4.01 | 1.62 | YES |

N/A – Not Applicable
* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.
*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).
n – Is the number of samples.
MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.
RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

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

**APPENDIX – FACILITY LAYOUT:**
Bar screen / six (6) cell complete mix activated sludge lagoon – EDI ATLAS design – one (1) cell is complete mix / four (4) cells are partial mix / one (1) cell is unaerated for settling / sludge is retained in lagoon / two (2) old lagoon cells used for flow equalization.



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

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

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

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

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

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

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

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

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

## Section B – Reporting Requirements

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

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

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

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

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

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

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

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

## Section C – Bypass/Upset Requirements

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

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

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

## Section D – Administrative Requirements

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

imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

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

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

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

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

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

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

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

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

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

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

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

13. **Signatory Requirement.**
    a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
    b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
    c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

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

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

**1. Definitions**

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

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

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

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

**2. Identification of Industrial Discharges**

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

**3. Application Information**

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

**4. Notice to the Department**

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

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

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

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

# STANDARD CONDITIONS FOR NPDES PERMITS
# ISSUED BY
# THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
# MISSOURI CLEAN WATER COMMISSION
# March 1, 2015

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

### SECTION A – GENERAL REQUIREMENTS

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

## SECTION B – DEFINITIONS

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

## SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

## SECTION E – INCINERATION OF SLUDGE

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

## SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

## SECTION G – LAND APPLICATION

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

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

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

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

a. Biosolids shall be monitored to determine the quality for regulated pollutants

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

c. Table 1 gives the maximum concentration allowable to protect water quality standards

**TABLE 1**

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

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

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

**TABLE 2**

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

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

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

**TABLE 3**

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

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

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

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

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

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

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

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

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

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
    i. PAN can be determined as follows and is in accordance with WQ426
    (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
    [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
g. Buffer zones are as follows:
    i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
    ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
    iii. 150 feet if dwellings;
    iv. 100 feet of wetlands or permanent flowing streams;
    v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
h. Slope limitation for application sites are as follows;
    i. A slope 0 to 6 percent has no rate limitation
    ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
    iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
k. Biosolids / sludge applicators must keep detailed records up to five years.

## SECTION H – CLOSURE REQUIREMENTS

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

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

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

## SECTION I – MONITORING FREQUENCY

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

**TABLE 5**

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

[1] Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.
[2] Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
[3] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.
[4] One sample for each 1,000 dry tons of sludge.

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

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

## SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

5. Annual report contents. The annual report shall include the following:
    a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
    b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
        ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
        iii. Report the method used for compliance with pathogen and vector attraction requirements.
        iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

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Water Protection Program

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

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

| FACILITY NAME | |
|---|---|
| Dexter East Lagoon | |
| PERMIT NO. | COUNTY |
| MO-0023213 | Stoddard |

## APPLICATION OVERVIEW

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

## BASIC APPLICATION INFORMATION

A. Basic Application Information for all Applicants. All applicants must complete Part A.

B. Additional Application Information for all Applicants. All applicants must complete Part B.

C. Certification. All applicants must complete Part C.

## SUPPLEMENTAL APPLICATION INFORMATION

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

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

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

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

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

SIUs are defined as:

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

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

**ALL APPLICANTS MUST COMPLETE PARTS A, B and C**

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

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

| FOR AGENCY USE ONLY | |
|---|---|
| CHECK NUMBER | |
| DATE RECEIVED | FEE SUBMITTED |
| 3/21/16 | 0 88 |

## PART A – BASIC APPLICATION INFORMATION

### 1. THIS APPLICATION IS FOR:

☐ An operating permit for a new or unpermitted facility. Construction Permit # _____
(Include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)

☑ An operating permit renewal: Permit #MO- 0023213 Expiration Date 11/24/2014

☐ An operating permit modification: Permit #MO-_____ Reason: _____

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

### 2. FACILITY

| NAME | | TELEPHONE NUMBER WITH AREA CODE | |
|---|---|---|---|
| Dexter East Lagoon | | 573-624-5959 | |
| ADDRESS (PHYSICAL) | CITY | STATE | ZIP CODE |
| Hwy 114 | Dexter | MO | 63841 |

2.1 **LEGAL DESCRIPTION** (Facility Site): ¼, NE ¼, SW ¼, Sec. 26 , T 25n , R 10e — COUNTY: Stoddard

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

2.3 Name of receiving stream: Unnamed Tributary to Lateral #2 Main Ditch

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

### 3. OWNER

| NAME | EMAIL ADDRESS | TELEPHONE NUMBER WITH AREA CODE | |
|---|---|---|---|
| City of Dexter | | 573-624-5959 | |
| ADDRESS | CITY | STATE | ZIP CODE |
| 301 E. Stoddard St. | Dexter | MO | 63841 |

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

3.2 Are you a Publically Owned Treatment Works (POTW)? ☑ YES ☐ NO
If yes, is the Financial Questionnaire attached? ☐ YES ☑ NO

3.3 Are you a Privately Owned Treatment Facility? ☐ YES ☑ NO

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

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

| NAME | EMAIL ADDRESS | TELEPHONE NUMBER WITH AREA CODE | |
|---|---|---|---|
| City of Dexter | | | |
| ADDRESS | CITY | STATE | ZIP CODE |
| | | | |

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

### 5. OPERATOR

| NAME | TITLE | CERTIFICATE NUMBER (IF APPLICABLE) |
|---|---|---|
| Tom Espey | Superintendent | 1025 |
| EMAIL ADDRESS | TELEPHONE NUMBER WITH AREA CODE | |
| | 573-624-5527 | |

### 6. FACILITY CONTACT

| NAME | TITLE | | |
|---|---|---|---|
| Mark Stidham | City Administrator | | |
| EMAIL ADDRESS | TELEPHONE NUMBER WITH AREA CODE | | |
| jmstidham@sbcglobal.net | 573-624-5959 | | |
| ADDRESS | CITY | STATE | ZIP CODE |
| 301 E. Stoddard St. | Dexter | MO | 63841 |

| FACILITY NAME Dexter East Lagoon | PERMIT NO. MO- 0023213 | OUTFALL NO. 1 |
|---|---|---|

**PART A – BASIC APPLICATION INFORMATION**

**7. FACILITY INFORMATION**

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

SEE ATTACHED

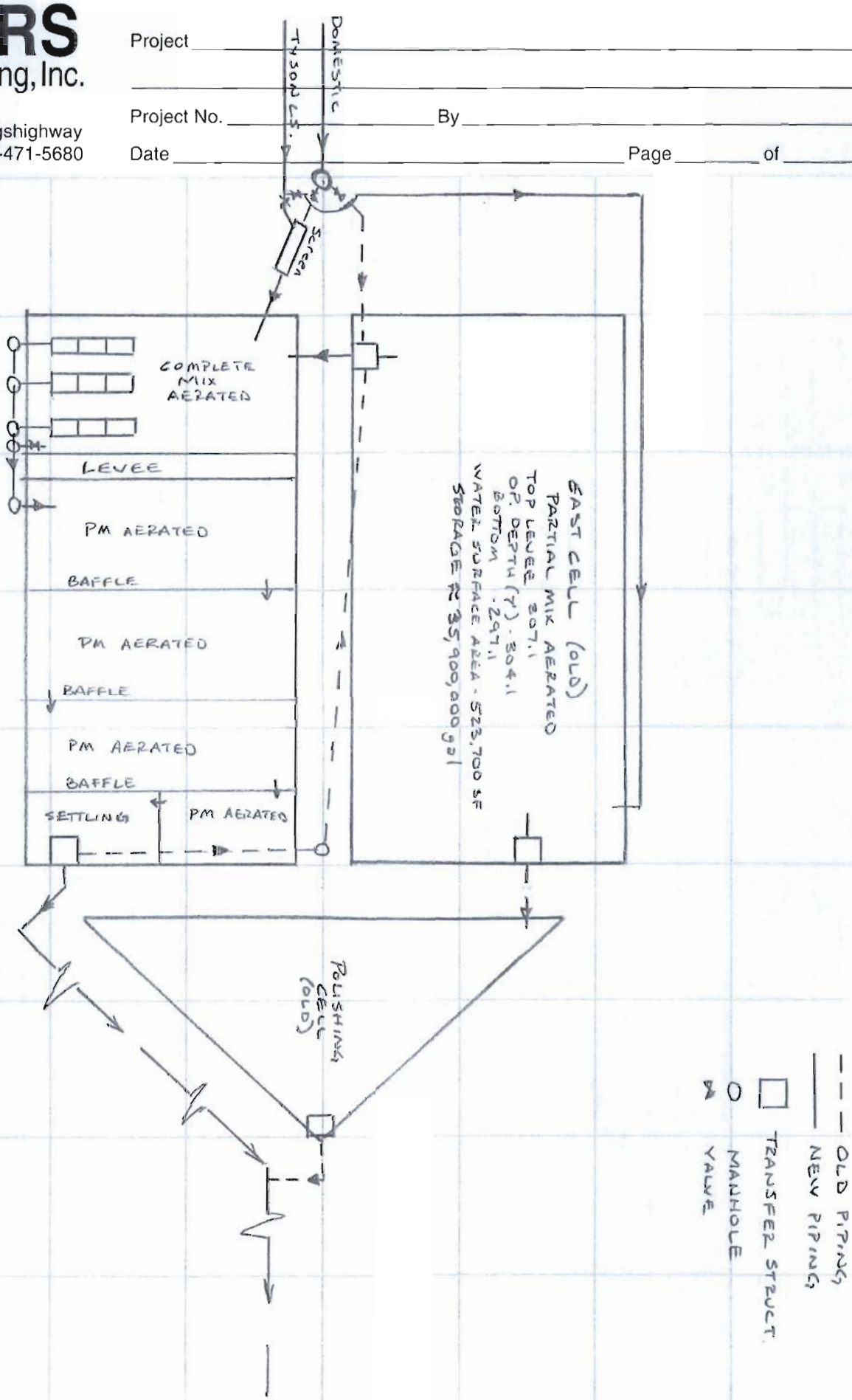
**WATERS Engineering, Inc.**

P.O. Box 567 • 908 S. Kingshighway
Sikeston, MO 63801 • 573-471-5680

Project _____

Project No. _____ By _____

Date _____ Page _____ of _____



| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART A – BASIC APPLICATION INFORMATION

### 7. FACILITY INFORMATION (continued)

**7.2 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.

a. The area surrounding the treatment plant, including all unit processes.
b. The location of the downstream landowner(s). (See Item 10.)
c. 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.
d. The actual point of discharge.
e. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
f. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
g. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, or disposed.

**7.3** Facility SIC Code: 4952 . | Discharge SIC Code: _____.

**7.4** Number of people presently connected or population equivalent (P.E.): 15600 Design P.E. 18500

**7.5** Connections to the facility:

Number of units presently connected:

Homes 2348 Trailers 115 Apartments 25 Other (including industrial) 15

Number of Commercial Establishments: 248

**7.6** Design Flow 1.8 MGD | Actual Flow 1.5 MGD

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

Discharge will occur during the following months: How many days of the week will discharge occur?

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

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

1 - Pretreated Poultry Processing Wastewater

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

**7.9** Does the facility accept or process leachate from landfills?: Yes ☐ No ☑

**7.10** Is wastewater land applied? Yes ☐ No ☑

If yes, is Form I attached? Yes ☐ No ☐

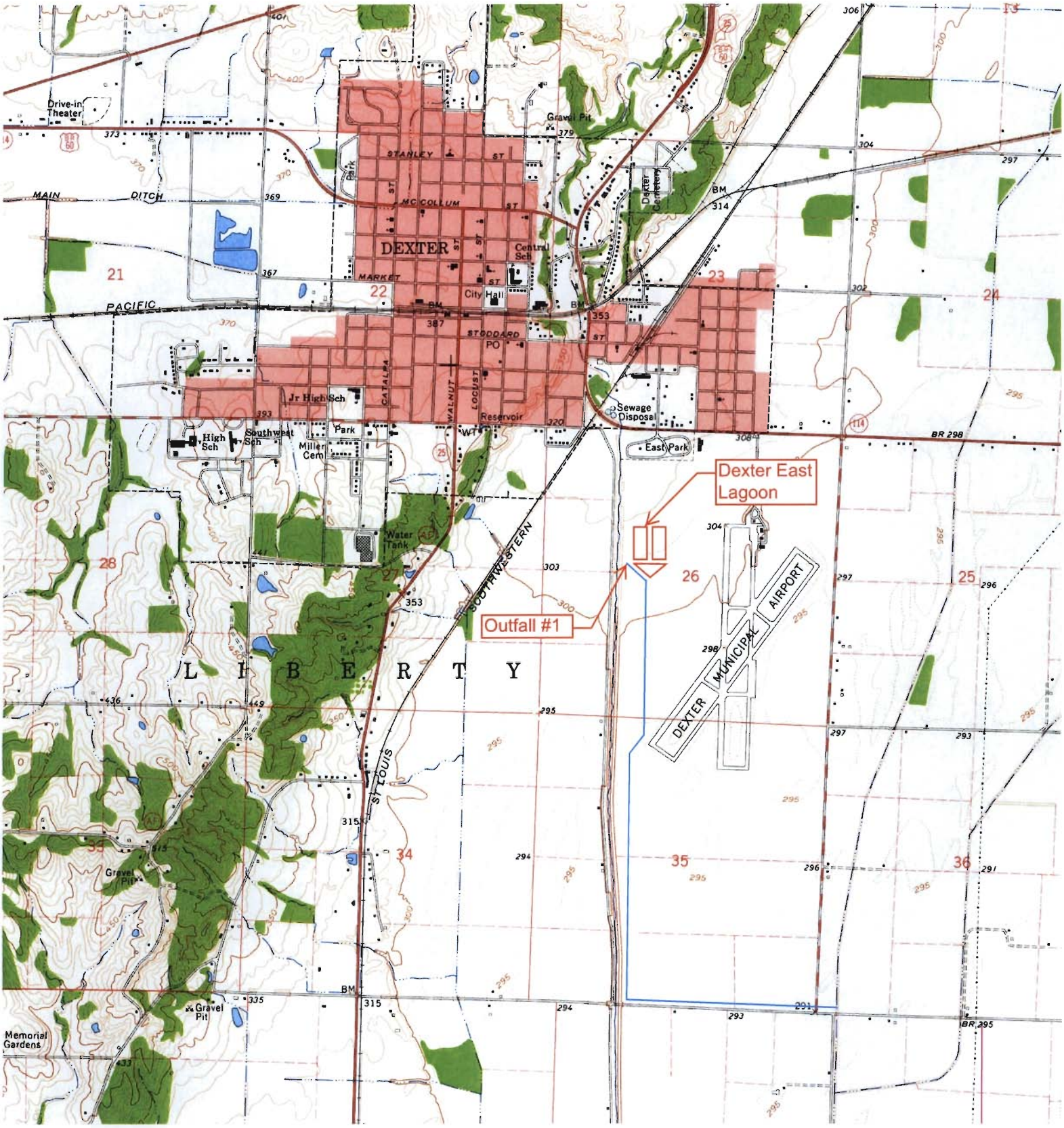
**7.11** Does the facility discharge to a losing stream or sinkhole? Yes ☐ No ☑

**7.12** Has a wasteload allocation study been completed for this facility? Yes ☐ No ☑

### 8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

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


Dexter East Lagoon
Outfall #1
DEXTER
LIBERTY
DEXTER MUNICIPAL AIRPORT
Drive-in Theater
Gravel Pit
STANLEY ST
MC COLLUM ST
MAIN DITCH
MARKET ST
PACIFIC
STODDARD ST
Central Sch
City Hall
Dexter Cemetery
Jr High Sch
High Sch
Southwest Sch
Park
Miller Cem
Reservoir
Sewage Disposal
East Park
Water Tank
SOUTHWESTERN
ST LOUIS
Memorial Gardens
BR 298
BR 295
21
22
23
24
25
26
27
28
33
34
35
36

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART A – BASIC APPLICATION INFORMATION

### 9. SLUDGE HANDLING, USE AND DISPOSAL

**9.1** Is the sludge a hazardous waste as defined by 10 CSR 25? Yes ☐ No ☑

**9.2** Sludge production (Including sludge received from others): Design Dry Tons/Year 280 Actual Dry Tons/Year 230

**9.3** Sludge storage provided: _____ Cubic feet; _____ Days of storage; _____ Average percent solids of sludge;

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

**9.4** Type of storage:

☐ Holding Tank ☐ Building
☐ Basin ☑ Lagoon
☐ Concrete Pad ☐ Other (Describe) _____

**9.5** Sludge Treatment:

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

**9.6** Sludge use or disposal:

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

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

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

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

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

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

**END OF PART A**

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART B – ADDITIONAL APPLICATION INFORMATION

### 10. COLLECTION SYSTEM

**10.1** Length of sanitary sewer collection system in miles
40

**10.2** Does significant infiltration occur in the collection system? ☑ Yes ☐ No
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

City conducting manhole inspection and smoke testing of system. Repairs are being made as smoke testing is completed.

### 11. BYPASSING

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes ☐ No ☑
If yes, explain:

### 12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of the contractor?
Yes ☐ No ☑
If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)

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

### 13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

Provide information about any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses for each.

City is working to reduce flows to primary cell or to divert excess flows to equalization basin for holding until it can be pumped back when peak flows are reduced.

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART B – ADDITIONAL APPLICATION INFORMATION

### 14. EFFLUENT TESTING DATA

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data **for each outfall through which effluent is discharged**. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart.

Outfall Number 1

| PARAMETER | MAXIMUM DAILY VALUE | | AVERAGE DAILY VALUE | | |
|---|---|---|---|---|---|
| | Value | Units | Value | Units | Number of Samples |
| pH (Minimum) | 6.91 | S.U. | 7.67 | S.U. | 55 |
| pH (Maximum) | 8.3 | S.U. | | S.U. | 55 |
| Flow Rate | 3.76 | MGD | 1.19 | MGD | 364 |

*For pH report a minimum and a maximum daily value

| POLLUTANT | | MAXIMUM DAILY DISCHARGE | | AVERAGE DAILY DISCHARGE | | | ANALYTICAL METHOD | ML/MDL |
|---|---|---|---|---|---|---|---|---|
| | | Conc. | Units | Conc. | Units | Number of Samples | | |
| Conventional and Nonconventional Compounds | | | | | | | | |
| BIOCHEMICAL OXYGEN DEMAND (Report One) | $BOD_5$ | 175 | mg/L | 29.82 | mg/L | 55 | SM-5210 B-01 | |
| | $CBOD_5$ | | mg/L | | mg/L | | | |
| E. COLI | | | #/100 mL | | #/100 mL | | | |
| TOTAL SUSPENDED SOLIDS (TSS) | | 121 | mg/L | 16.98 | mg/L | 55 | SM-2540 D-97 | |
| AMMONIA (as N) | | 37.2 | mg/L | 20.78 | mg/L | 55 | Lachat10-107-06-1 | |
| CHLORINE* (TOTAL RESIDUAL, TRC) | | | mg/L | | mg/L | | | |
| DISSOLVED OXYGEN | | 12.4 | mg/L | 9.67 | mg/L | 11 | Hach Handheld | |
| OIL and GREASE | | 5.2 | mg/L | <5 | mg/L | 52 | EPA 1664A | |
| OTHER | | | mg/L | | mg/L | | | |

*Report only if facility chlorinates

**END OF PART B**

| | Alkalinity | DO, mg/L | BOD5, mg/L | TSS, mg/L | TKN, mg/L | Ammonia, mg/L | Temp, C | FOG | pH |
|---|---|---|---|---|---|---|---|---|---|
| 7-Jan-15 | 251 | 10.8 | 124 | 20 | | 26.2 | 3 | 5 | 7.3 |
| 7-Jan-15 | | | 107 | 35 | | 24.8 | 1 | | 7.35 |
| 7-Jan-15 | | | | | | | | | |
| 14-Jan-15 | | | | | | | | | |
| 14-Jan-15 | 231 | 8.5 | 46.8 | 19 | | 25 | 2 | 5 | 7.37 |
| 21-Jan-15 | 218 | 5.5 | 16.6 | 13 | | 25.5 | 5 | 5 | 7.22 |
| 21-Jan-15 | | | | | | | | | |
| 28-Jan-15 | 279 | 8.4 | 16 | 6 | | 28.1 | 6 | 5 | 7.2 |
| 28-Jan-15 | | | | | | | | | |
| 4-Feb-15 | | 10 | 21.2 | 24 | | 24.5 | 3 | | 8.03 |
| 4-Feb-15 | | | | | | | | | |
| 4-Feb-15 | 285 | 10.2 | 19.3 | 8 | | 25.8 | 4 | 5 | 7.73 |
| 11-Feb-15 | | | | | | | | | |
| 11-Feb-15 | 292 | 10.1 | 7.77 | 8 | | 23.8 | 5 | 5 | 7.92 |
| 18-Feb-15 | 238 | 12.4 | 7.07 | 11 | | 22.9 | 0 | 5 | 8.01 |
| 18-Feb-15 | | | | | | | | | |
| 25-Feb-15 | 136 | 9.9 | 39.9 | 10 | | 8.84 | 2 | 5 | 7.38 |
| 25-Feb-15 | | | | | | | | | |
| 3-Mar-15 | | 10.4 | 12.4 | 121 | | 9.54 | 3 | | 7.49 |
| 3-Mar-15 | | | | | | | | | |
| 3-Mar-15 | 179 | 10.2 | 8.55 | 9 | | 14.6 | 4 | 5 | 7.05 |
| 11-Mar-15 | | | | | | | | | |
| 11-Mar-15 | | | 10.1 | 6 | | 12.1 | 9 | 5 | 6.91 |
| 18-Mar-15 | | | 9.02 | 7 | | 9.49 | 12 | 5 | 7.13 |
| 25-Mar-15 | | | 7.33 | 7 | | 12.2 | 14 | 5 | 7.49 |
| 1-Apr-15 | | | 6.95 | 2 | | 10.6 | 14 | 5 | 7.01 |
| 8-Apr-15 | | | 4.76 | 2 | | 8.89 | 17 | 5 | 7.27 |
| 15-Apr-15 | | | 7.11 | 4 | | 6.4 | 15 | 5 | 7.3 |
| 22-Apr-15 | | | 12.9 | 8 | | 5.01 | 17 | 5 | 7.72 |
| 29-Apr-15 | | | 10.4 | 22 | | 3.05 | 15 | 5 | 8.3 |
| 6-May-15 | | | 9.15 | 8 | | 1.09 | 21 | 5 | 7.95 |
| 13-May-15 | | | 3.6 | 5 | | 4.18 | 20 | 5 | 7.23 |
| 20-May-15 | | | 2.58 | 3 | | 7.25 | 20 | 5 | 7.34 |
| 27-May-15 | | | 2.88 | 4 | | 8.45 | 23 | 5 | 7.42 |
| 3-Jun-15 | | | 3.85 | 3 | | 7.92 | 21 | 5 | 7.18 |
| 10-Jun-15 | | | 3.73 | 4 | | 5.63 | 25 | 5 | 7.63 |
| 17-Jun-15 | | | 8.39 | 13 | | 6.07 | 29 | 5 | 7.76 |
| 24-Jun-15 | | | 17.5 | 22 | | 12.3 | 29 | 5 | 8.03 |
| 1-Jul-15 | | | 33.2 | 25 | | 14.9 | 27 | 5 | 8.2 |
| 8-Jul-15 | | | 24.6 | 38 | | 16 | 26 | 5 | 7.79 |
| 15-Jul-15 | | | 58.8 | 28 | | 8.85 | 28 | 5 | 7.92 |
| 22-Jul-15 | | | 108 | 32 | | 13 | 28 | 5 | 7.79 |
| 29-Jul-15 | | | 62.3 | 18 | | 14.7 | 31 | 5 | 7.81 |
| 5-Aug-15 | | | 137 | 21 | | 19.5 | 29 | 5 | 7.62 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12-Aug-15 | | | 23.6 | 15 | | 28.8 | 26 | 5 | 7.69 |
| 19-Aug-15 | | | 20.6 | 24 | | 29.1 | 28 | 5 | 7.86 |
| 26-Aug-15 | | | 16.2 | 17 | | 32.9 | 24 | 5 | 7.88 |
| 2-Sep-15 | | | 28.8 | 21 | | 34.6 | 27 | 5 | 8.14 |
| 9-Sep-15 | | | 27 | 27 | | 31.9 | 26 | 5 | 8.09 |
| 16-Sep-15 | | | 18.9 | 33 | | 33.9 | 21 | 5.2 | 7.93 |
| 23-Sep-15 | | | 49 | 24 | | 36.2 | 21 | 5 | 8.11 |
| 30-Sep-15 | | | 55.7 | 26 | | 33.6 | 20 | 5 | 7.75 |
| 7-Oct-15 | | | 70.2 | 19 | | 37.2 | 19 | 5 | 7.99 |
| 14-Oct-15 | | | 175 | 40 | | 31.6 | 18 | 5 | 7.73 |
| 21-Oct-15 | | | 40.5 | 26 | | 33.6 | 15 | 5 | 7.8 |
| 28-Oct-15 | | | 52.4 | 20 | | 35.5 | 25 | 5 | 8 |
| 4-Nov-15 | | | 10.9 | 11 | | 36.1 | 26 | 5 | 7.76 |
| 10-Nov-15 | | | 15.3 | 14 | | 36.5 | 13 | 5 | 7.55 |
| 18-Nov-15 | | | 14.3 | 14 | | 32.1 | 15 | 5 | 7.84 |
| 25-Nov-15 | | | 13 | 12 | | 30.8 | 10 | 5 | 7.76 |
| 2-Dec-15 | | | 8.85 | 5 | | 24.6 | 10 | 5 | 7.76 |
| 9-Dec-15 | | | 8.03 | 4 | | 25.6 | 10 | 5 | 7.61 |
| 16-Dec-15 | | | 8.57 | 5 | | 31.4 | 12 | 5 | 7.88 |
| 22-Dec-15 | | | 10.6 | 3 | | 34.3 | 10 | 5 | 8.05 |
| 29-Dec-15 | | | 2 | 8 | | 25.8 | 12 | 5 | 8.03 |
| AVG | 234.3333 | 9.672727 | 29.82164 | 16.98182 | #DIV/0! | 20.78655 | 16.29091 | 5.003846 | 7.673818 |
| Min | 136 | 5.5 | 2 | 2 | #DIV/0! | 1.09 | 0 | 5 | 6.91 |
| Max | 292 | 12.4 | 175 | 121 | #DIV/0! | 37.2 | 31 | 5.2 | 8.3 |
| Count | 9 | 11 | 55 | 55 | 0 | 55 | 55 | 52 | 55 |

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

**PART C – CERTIFICATION**

**15. 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.

| PRINTED NAME | OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL) |
|---|---|
| Mark Stidham | City Administrator |

SIGNATURE Mark Stidham

TELEPHONE NUMBER WITH AREA CODE
573-624-5959

DATE SIGNED
3-15-16

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

Send Completed Form to:

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

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

Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:

1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
2. Your facility is a pretreatment treatment works.
3. Your facility is a combined sewer system.

Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

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

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART D – EXPANDED EFFLUENT TESTING DATA

### 16. EXPANDED EFFLUENT TESTING DATA

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

If the treatment works has a design flow greater than or equal to 1 million gallons per day or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information **for each outfall through which effluent is discharged**. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. 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. At a minimum, effluent testing data must be based on at least **three pollutant scans** and must be no more than four and one-half years apart.

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

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/MDL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | No. of Samples | | |
| **METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS** | | | | | | | | | | | |
| ALUMINUM | | | | | | | | | | | |
| ANTIMONY | | | | | | | | | | | |
| ARSENIC | | | | | | | | | | | |
| BERYLLIUM | | | | | | | | | | | |
| CADMIUM | | | | | | | | | | | |
| CHROMIUM III | | | | | | | | | | | |
| CHROMIUM VI | | | | | | | | | | | |
| COPPER | | | | | | | | | | | |
| IRON | | | | | | | | | | | |
| LEAD | | | Provide | under | separat | cover | | | | | |
| MERCURY | | | | | | | | | | | |
| NICKEL | | | | | | | | | | | |
| SELENIUM | | | | | | | | | | | |
| SILVER | | | | | | | | | | | |
| THALLIUM | | | | | | | | | | | |
| ZINC | | | | | | | | | | | |
| CYANIDE | | | | | | | | | | | |
| TOTAL PHENOLIC COMPOUNDS | | | | | | | | | | | |
| HARDNESS (as $CaCO_3$) | | | | | | | | | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | |
| ACROLEIN | | | | | | | | | | | |
| ACRYLONITRILE | | | | | | | | | | | |
| BENZENE | | | | | | | | | | | |
| BROMOFORM | | | | | | | | | | | |
| CARBON TETRACHLORIDE | | | | | | | | | | | |

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART D – EXPANDED EFFLUENT TESTING DATA

### 16. EXPANDED EFFLUENT TESTING DATA

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

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | | | AVERAGE DAILY DISCHARGE | | | | | ANALYTICAL METHOD | ML/MDL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Conc. | Units | Mass | Units | Conc. | Units | Mass | Units | No. of Samples | | |
| CHLOROBENZENE | | | | | | | | | | | |
| CHLORODIBROMO-METHANE | | | | | | | | | | | |
| CHLOROETHANE | | | | | | | | | | | |
| 2-CHLORO-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 | | | provide | under | separa | cover | | | | | |
| ETHYLBENZENE | | | | | | | | | | | |
| METHYL BROMIDE | | | | | | | | | | | |
| METHYL CHLORIDE | | | | | | | | | | | |
| METHYLENE CHLORIDE | | | | | | | | | | | |
| 1,1,2,2-TETRA-CHLOROETHANE | | | | | | | | | | | |
| TETRACHLORO-ETHANE | | | | | | | | | | | |
| TOLUENE | | | | | | | | | | | |
| 1,1,1-TRICHLORO-ETHANE | | | | | | | | | | | |
| 1,1,2-TRICHLORO-ETHANE | | | | | | | | | | | |
| TRICHLORETHYLENE | | | | | | | | | | | |
| VINYL CHLORIDE | | | | | | | | | | | |
| **ACID-EXTRACTABLE COMPOUNDS** | | | | | | | | | | | |
| P-CHLORO-M-CRESOL | | | | | | | | | | | |
| 2-CHLOROPHENOL | | | | | | | | | | | |
| 2,4-DICHLOROPHENOL | | | | | | | | | | | |
| 2,4-DIMETHYLPHENOL | | | | | | | | | | | |
| 4,6-DINITRO-O-CRESOL | | | | | | | | | | | |
| 2,4-DINITROPHENOL | | | | | | | | | | | |
| 2-NITROPHENOL | | | | | | | | | | | |
| 4-NITROPHENOL | | | | | | | | | | | |

| FACILITY NAME Dexter East Lagoon | PERMIT NO. MO- 0023213 | OUTFALL NO. 1 |
|---|---|---|

## PART D – EXPANDED EFFLUENT TESTING DATA

### 16. EXPANDED EFFLUENT TESTING DATA

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

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

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

**PART D – EXPANDED EFFLUENT TESTING DATA**

**16. EXPANDED EFFLUENT TESTING DATA**

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

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

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
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**END OF PART D**

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

| MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL | | |
|---|---|---|
| FACILITY NAME Dexter East Lagoon | PERMIT NO. MO- 0023213 | OUTFALL NO. 1 |

## PART E – TOXICITY TESTING DATA

### 17. TOXICITY TESTING DATA

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

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

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

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

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

| | Most Recent | 2ND Most Recent | 3RD Most Recent |
|---|---|---|---|
| A. Test Information | | | |
| Test Method Number | | | |
| Final Report Number | | | |
| Outfall Number | | | |
| Dates Sample Collected | SEE ATTACHED | | |
| Date Test Started | | | |
| Duration | | | |
| B. Toxicity Test Methods Followed | | | |
| Manual Title | | | |
| Edition Number and Year of Publication | | | |
| Page Number(s) | | | |
| C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used | | | |
| 24-Hour Composite | | | |
| Grab | | | |
| D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each) | | | |
| Before Disinfection | ☐ | ☐ | ☐ |
| After Disinfection | ☐ | ☐ | ☐ |
| After Dechlorination | ☐ | ☐ | ☐ |
| E. Describe the point in the treatment process at which the sample was collected | | | |
| Sample Was Collected: | | | |
| F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both | | | |
| Chronic Toxicity | ☐ | ☐ | ☐ |
| Acute Toxicity | ☐ | ☐ | ☐ |
| G. Provide the type of test performed | | | |
| Static | ☐ | ☐ | ☐ |
| Static-renewal | ☐ | ☐ | ☐ |
| Flow-through | ☐ | ☐ | ☐ |
| H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source | | | |
| Laboratory Water | ☐ | ☐ | ☐ |
| Receiving Water | ☐ | ☐ | ☐ |

| FACILITY NAME Dexter East Lagoon | PERMIT NO. MO- 0023213 | OUTFALL NO. 1 |
|---|---|---|

**PART E – TOXICITY TESTING DATA**

**17. TOXICITY TESTING DATA (continued)**

| | Most Recent | Second Most Recent | Third Most Recent |
|---|---|---|---|
| I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used. | | | |
| Fresh Water | | | |
| Salt Water | | | |
| J. Percentage of effluent used for all concentrations in the test series | | | |
| | | | |
| | | | |
| | | | |
| K. Parameters measured during the test (State whether parameter meets test method specifications) | | | |
| pH | | | |
| Salinity | | | |
| Temperature | | | |
| Ammonia | | | |
| Dissolved Oxygen | | | |
| L. Test Results | | | |
| Acute: | | | |
| Percent Survival in 100% Effluent | | | |
| $LC_{50}$ | | | |
| 95% C.I. | | | |
| Control Percent Survival | | | |
| Other (Describe) | | | |
| Chronic: | | | |
| NOEC | | | |
| $IC_{25}$ | | | |
| Control Percent Survival | | | |
| Other (Describe) | | | |
| M. Quality Control/ Quality Assurance | | | |
| Is reference toxicant data available? | | | |
| Was reference toxicant test within acceptable bounds? | | | |
| What date was reference toxicant test run (MM/DD/YYYY)? | | | |
| Other (Describe) | | | |

Is the treatment works involved in a toxicity reduction evaluation? ☐ Yes ☐ No

If yes, describe:

If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date Submitted (MM/DD/YYYY)

Summary of Results (See Instructions)

**END OF PART E**

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

# Environmental Analysis South, Inc.

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


**REPORT OF ACUTE TOXICITY TESTING**
**Dexter-East Lagoon**
**Outfall 001 (24 hr composite) AEC = 100%**
**MO-0023213**
**EAS LOG#1906102**
**October 7, 2015 through October 9, 2015**

**Tests performed by:**

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)


1. **Report Summation**
   - 1.1. **Data Summation**
   - 1.2. **Conclusion**
2. **Method Summation**
   - 2.1. **Test Conditions and Methods**
   - 2.2. **Potassium chloride Reference Salt Test**
     - 2.2.1. ***Pimephales promelas* data**
     - 2.2.2. ***Ceriodaphnia dubia* data**
   - 2.3. **Literature Cited**
3. **Raw Data Bench Sheets**
   - 3.1. **Initial observations (page 1)**
   - 3.2. **Zero hour Observations (page 1)**
   - 3.3. **Twenty-four (24) hour Observations (page 1)**
   - 3.4. **Forty-eight (48) hour Observations (page 1)**
   - 3.5. **Survival Data Table (page 2)**
   - 3.6. **Test Comments (page 3)**
4. **Chain of Custody**
5. **MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)**

Environmental Analysis South, Inc.
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**REPORT OF ACUTE TOXICITY TESTING**
**Dexter-East Lagoon**
**Outfall 001 (24 hr composite) AEC = 100%**
**MO-0023213**
**EAS LOG#1906102**
**October 7, 2015 through October 9, 2015**

## 1. REPORT SUMMATION:

### 1.1. Multiple Dilution Data Summation

| Test Solution | *Pimephales promelas* Acute Toxicity Test 48 Hour Survival | *Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival |
|---|---|---|
| Reconstituted Control (RC) | 100% | 100% |
| Upstream Control (UC) | 100% | 100% |
| 6.25% Effluent | 100% | 100% |
| 12.5% Effluent | 100% | 100% |
| 25% Effluent | 100% | 15%* |
| 50% Effluent | 60%* | 0%* |
| 100% Effluent | 0%* | 0%* |
| Estimated 48 Hour $LC_{50}$ Value | 53.59% Effluent (46.04%-62.38%) | 19.61% Effluent (17.56%-21.91%) |
| To Pass: 1. Effluent - LC50 must be >100% and 2. All concentrations = or < AEC must not have significant difference to control in survival. | 1. No 2. No | 1. No 2. No |
| Result of Toxicity Test | FAIL | FAIL |

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

**Conclusion:**

Pimephales promelas 48 hour WET results: LC 50 = 53.59% by Trimmed Spearman-Karber
NOAEC = 25% by Steel's Many-One Rank Test

Ceriodaphnia dubia 48 hour WET results: LC 50 = 19.61% by Trimmed Spearman-Karber
NOAEC = 12.5% by Steel's Many-One Rank Test

Based on these results, the effluent failed the whole effluent toxicity test with both species.

Approved by _____
Sara C. Shields, Chemist

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**REPORT OF ACUTE TOXICITY TESTING**
**Dexter-East Lagoon**
**Outfall 001 (24 hr composite) AEC = 100%**
**MO-0023213**
**EAS LOG#1906102**
**October 7, 2015 through October 9, 2015**

## 2. TEST METHOD SUMMARY

### 2.1. TEST CONDITIONS AND METHODS:

| | *Ceriodaphnia dubia:* | *Pimephales promelas:* |
|---|---|---|
| Test duration: | 48 hours | 48 hours |
| Temperature: | 24 - 26 degree Celsius | 24 - 26 degree Celsius |
| Light quality: | Ambient laboratory illumination | Ambient laboratory illumination |
| Photoperiod: | 16 hour light, 8 hours dark | 16 hour light, 8 hours dark |
| Control Water: | Moderately Hard Reconstituted Water | Moderately Hard Reconstituted Water |
| Dilution Water: | Upstream Water - If unavailable or toxic, then control water will be used. | Upstream Water - If unavailable or toxic, then control water will be used. |
| Size of test vessel: | 30 milliliters | 250 milliliters |
| Volume of test solution: | 15 milliliters | 200 milliliters |
| Age of test organisms: | <24 hours | 1 -14 days (all same age) |
| Number of organisms/test vessel: | 5 | 10 |
| Number of replicates/concentration: | 4 | 2 |
| Number of organisms/concentration: | 20 | 40 for a single dilution test and 20 for a multiple dilution test |
| Feeding regime: | None (fed prior to test) | None (fed prior to test) |
| Aeration: | None | None |
| Test acceptability criterion: | 90% or greater survival in controls | 90% or greater survival in controls |

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc. located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.

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**REPORT OF ACUTE TOXICITY TESTING**
**Dexter-East Lagoon**
**Outfall 001 (24 hr composite) AEC = 100%**
**MO-0023213**
**EAS LOG#1906102**
**October 7, 2015 through October 9, 2015**

**2.2. REFERENCE TOXICITY TEST:**

Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on October 7, 2015 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – $LC_{50}$ = 1.064g/l 95%CI (0.667 g/l -1.461 g/l)
EAS %CV = 18.6%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. ***C. dubia*** - 48 hr. Acute Test – $LC_{50}$ = 0.484 g/l 95%CI (0.293 g/l - 0.674g/l)
EAS %CV = 19.7%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

**2.3. LITERATURE CITED:**

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2).* June 2000. EPA 833-R-00-003.

# WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME: Dexter-East Lagoon, Outfall 001, 24 hr composite
NPDES NUMBER: MO-0023213
TYPE OF METHOD: multiple dilution, 48 hrs, non-renewal, PP & CD, AEC=100%
DATE & TIME OF COLLECTION: 10/06/15 0830 hrs - 10/07/15 0830 hrs by Tom Williamson
DATE & TIME OF SUBMISSION: 10/07/15 1040 hrs by Tom Williamson

Upstream: Unnamed Tributary to Lateral #2 Main Ditch
Collected: 10/07/15 0900 hrs by Tom Williamson

| INITIAL OBSERVATIONS | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | INT EFFL | INT UC | INT RC |
|---|---|---|---|---|---|---|---|---|
| LOG NUMBER / ID NUMBER | | | | | | 1906102 | 1906102A | RC4139 |
| pH - SU | 10/07/15 | 1045 hrs | SCS | SB114 (8.8-9.2) | 8.86 | 8.15 | 8.30 | 8.27 |
| TEMPERATURE °C RECEIVED | 10/07/15 | 1045 hrs | SCS | EAS 106 | | 20 | 20 | 22 |
| SPECIFIC CONDUCTANCE umhos | 10/07/15 | 1045 hrs | SCS | ERA229-506 (490-549) | 535 | 1399 | 186 | 256 |
| HARDNESS - ppm | 10/07/15 | 1045 hrs | SCS | DMRQA34 (184-250) | 240 | 240 | 100 | 80 |
| CHLORINE - ppm | 10/07/15 | 1045 hrs | SCS | tap water | + | <0.04 | <0.04 | <0.04 |
| DISSOLVED OXYGEN - ppm | 10/07/15 | 1045 hrs | SCS | cal@840 | | 7.5 | 6.6 | 9 |
| TOTAL ALKALINITY - ppm | 10/07/15 | 1400 hrs | SCS | P235-506 (32.1-38.3) | 38.2 | 331 | 70.8 | 60.5 |
| INITIAL AMMONIA - ppm | 10/13/15 | 1115 hrs | JPC | DMRQA34 (5.78-8.90) | 8.26 | 28.1 | <0.05 | <0.05 |
| TOTAL DISSOLVED SOLIDS -ppm | | | | | | | | |

| 0 HOUR OBSERVATIONS | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X %AEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH - SU | 10/07/15 | 1100 hrs | SCS | SB114 (8.8-9.2) | 8.86 | 8.28 | 8.25 | 8.00 | 7.96 | 7.97 | 8.01 | 8.15 | |
| TEMPERATURE °C | 10/07/15 | 1100 hrs | SCS | EAS 106 | | 23.4 | 24.0 | 24.0 | 24.1 | 24.1 | 23.9 | 23.9 | |
| SPECIFIC CONDUCTANCE umhos | 10/07/15 | 1100 hrs | SCS | ERA229-506 (490-549) | 535 | 262 | 186 | 1453 | 809 | 491 | 331 | 250 | |
| DISSOLVED OXYGEN - ppm | 10/07/15 | 1100 hrs | SCS | cal@840 | | 8.7 | 6.7 | 7.5 | 7.2 | 7.2 | 7.2 | 7.1 | |

| 24 HOUR OBSERVATIONS - PP | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X %AEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH - SU | 10/08/15 | 1100 hrs | SCS | SB114 (8.8-9.2) | 8.91 | 7.79 | 8.47 | 8.07 | 8.10 | 8.19 | 8.28 | 8.37 | |
| TEMPERATURE °C | 10/08/15 | 1100 hrs | SCS | EAS 106 | | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | |
| SPECIFIC CONDUCTANCE umhos | 10/08/15 | 1100 hrs | SCS | ERA229-506 (490-549) | 527 | 282 | 193 | 1430 | 805 | 492 | 338 | 255 | |
| DISSOLVED OXYGEN - ppm | 10/08/15 | 1100 hrs | SCS | cal@840 | | 7.9 | 7.8 | 6.4 | 6.6 | 6.8 | 7.5 | 7.7 | |
| **48 HOUR OBSERVATIONS - PP** | **DATE** | **TIME** | **ANALYST** | **QC LOT** | **QC EXP VALUE** | **RC** | **UC** | **100%** | **50%** | **25%** | **12.5%** | **6.25%** | **X %AEC** |
| pH - SU | 10/09/15 | 1100 hrs | SCS | SB114 (8.8-9.2) | 8.89 | 8.27 | 8.65 | 8.03 | 8.17 | 8.30 | 8.40 | 8.50 | |
| TEMPERATURE °C | 10/09/15 | 1100 hrs | SCS | EAS 106 | | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | |
| SPECIFIC CONDUCTANCE umhos | 10/09/15 | 1100 hrs | SCS | ERA229-506 (490-549) | 531 | 322 | 204 | 1426 | 806 | 490 | 340 | 256 | |
| DISSOLVED OXYGEN - ppm | 10/09/15 | 1100 hrs | SCS | cal@840 | | 8.0 | 8.0 | 6.2 | 6.6 | 7.2 | 7.6 | 8.1 | |
| FINAL AMMONIA - ppm | | | | DMRQA33 (10.0-16.8) | | | | | | | | | |

| 24 HOUR OBSERVATIONS - CD | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X %AEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH - SU | 10/08/15 | 1100 hrs | SCS | SB114 (8.8-9.2) | 8.91 | 8.32 | 8.58 | 8.13 | 8.20 | 8.29 | 8.39 | 8.47 | |
| TEMPERATURE °C | 10/08/15 | 1100 hrs | SCS | EAS 106 | | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | |
| SPECIFIC CONDUCTANCE umhos | 10/08/15 | 1100 hrs | SCS | ERA229-506 (490-549) | 527 | 244 | 195 | 1391 | 790 | 490 | 335 | 253 | |
| DISSOLVED OXYGEN - ppm | 10/08/15 | 1100 hrs | SCS | cal@840 | | 8.5 | 8.8 | 6.0 | 7.5 | 8.0 | 8.1 | 8.7 | |
| **48 HOUR OBSERVATIONS - CD** | **DATE** | **TIME** | **ANALYST** | **QC LOT** | **QC EXP VALUE** | **RC** | **UC** | **100%** | **50%** | **25%** | **12.5%** | **6.25%** | **X %AEC** |
| pH - SU | 10/09/15 | 1100 hrs | SCS | SB114 (8.8-9.2) | 8.89 | 8.33 | 8.62 | 7.85 | 7.98 | 8.08 | 8.16 | 8.23 | |
| TEMPERATURE °C | 10/09/15 | 1100 hrs | SCS | EAS 106 | | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | |
| SPECIFIC CONDUCTANCE umhos | 10/09/15 | 1100 hrs | SCS | ERA229-506 (490-549) | 531 | 275 | 212 | 1428 | 793 | 491 | 343 | 254 | |
| DISSOLVED OXYGEN - ppm | 10/09/15 | 1100 hrs | SCS | cal@840 | | 8.8 | 8.6 | 6.3 | 7.4 | 8.1 | 8.3 | 8.5 | |
| FINAL AMMONIA - ppm | | | | DMRQA33 (10.0-16.8) | | | | | | | | | |

Approved by: [signature] Date: 10/14/15

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

**Dexter-East Lagoon, Outfall 001, 24 hr composite** **EAS LOG# 1906102**

**Date Test Began:** October 7, 2015 **Time Test Began:** 1100 hrs **Analyst 1:** DFW
**Analyst 2:** KJR
**Date Test Finished:** October 9, 2015 **Time Test Finished:** 1100 hrs **Analyst 3:** SCS

**P. promelas (PP)** **AGE:** 8 **days** **HATCH NUMBER:** 9594 c-k

| | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X% AEC |
|---|---|---|---|---|---|---|---|---|
| PERIOD | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE |
| 0 HR-PP | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | |
| 24 HR-PP | 10,10 | 10,10 | 0,0 | 6,6 | 10,10 | 10,10 | 10,10 | |
| 48 HR-PP | 10,10 | 10,10 | 0,0 | 6,6 | 10,10 | 10,10 | 10,10 | |

**Ceriodaphnia dubia (CD)** **AGE:** <24 **hours** **HATCH NUMBER:** 3208 c-k

| | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X% AEC |
|---|---|---|---|---|---|---|---|---|
| PERIOD | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE |
| 0 HR-CD | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | |
| 24 HR-CD | 5,5,5,5 | 5,5,5,5 | 0,0,0,0 | 0,0,0,0 | 0,4,4,4 | 5,5,5,5 | 5,5,5,5 | |
| 48 HR-CD | 5,5,5,5 | 5,5,5,5 | 0,0,0,0 | 0,0,0,0 | 0,1,1,1 | 5,5,5,5 | 5,5,5,5 | |

Approved by: Date: 10/14/15

**Dexter-East Lagoon, Outfall 001, 24 hr composite EAS#: 1906102**

## Notes & Comments

Prepared by: A Shields

Date: 10/14/15

multiple 100's

**ENVIRONMENTAL ANALYSIS SOUTH, INC.**
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818

eas 13330

# WHOLE EFFLUENT TOXICITY TESTING
# CHAIN OF CUSTODY

CLIENT: City of Dexter East ~~WA~~

NPDES PERMIT NUMBER: _____

EFFLUENT NAME: 001 (LEGAL NAME) GRAB ☐ 24 HR COMPOSITE ☐

COLLECTION DATA: START DATE: 10-6-15 START TIME: 8:30A

FINISH DATE: 10-7-15 FINISH TIME: 8:30A

UPSTREAM NAME: Ditch #2 (LEGAL NAME) (GRAB SAMPLE)

COLLECTION DATA: DATE: 10-7-15 TIME: 9:00A

SAMPLER NAME: Tom Williamson (PRINT NAME) CARRIER: SAME

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of $100 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of $100 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

**SAMPLER CHECK LIST**

NO HEADSPACE IN BOTTLES ☐
SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON 10 / 7 / 15 ☐
SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP ☐
SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6° C WHEN SHIPPING OVERNIGHT ☐

RELINQUISHED BY: Tom Williamson DATE: 10-7-15 TIME: 10 35

***LABORATORY USE ONLY***

**EFFLUENT** LOG NUMBER: 1906102

RECEIVED TEMPERATURE: 20 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

**UPSTREAM** LOG NUMBER: 1906102-A

RECEIVED TEMPERATURE: 20 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

RECEIVED BY: [illegible] DATE: 10/7/15 TIME: 1040

RECEIVED

MAR 21 2016

Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102

# WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

## PART A – TO BE COMPLETED IN FULL BY PERMITTEE

| | |
|---|---|
| FACILITY NAME<br>Dexter-East Lagoon | DATE & TIME COLLECTED<br>EFFLUENT 10/06/15 0830-10/07/15 0830 UPSTREAM 10/07/15 0900 |
| PERMIT NUMBER<br>MO-0023213 | PERMIT OUTFALL NUMBER<br>Outfall # 001 |
| COLLECTOR'S NAME<br>Tom Williamson | |
| RECEIVING STREAM COLLECTION SITE AND DESCRIPTION<br>Unnamed Tributary to Lateral #2 Main Ditch | |
| PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC)<br>100% | EFFLUENT SAMPLE TYPE (CHECK ONE)<br>☒ 24HR COMPOSITE ☐ GRAB ☐ OTHER |
| SAMPLE NUMBER<br>EFFLUENT 1906102 UPSTREAM 1906102A | UPSTREAM SAMPLE TYPE (CHECK ONE)<br>☐ 24HR COMPOSITE ☒ GRAB ☐ OTHER |
| PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR<br>CHLORINE ____ mg/L | PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR<br>AMMONIA ____ mg/L |

## PART B – TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

| | | |
|---|---|---|
| PERFORMING LABORATORY<br>Environmental Analysis South, Inc. | TEST TYPE<br>Acute Static Non renewal Test Multiple Dilution | |
| FINAL REPORT NUMBER<br>MO_1906102 | TEST DURATION<br>48 hour | |
| DATE OF LAST REFERENCE TOXICANT TESTING<br>October 7, 2015 | TEST METHOD<br>Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms | |
| DATE AND TIME SAMPLES RECEIVED AT LABORATORY<br>10/07/15 1040 hrs by Tom Williamson | TEST START DATE AND TIME<br>10/07/15 1100 hrs | TEST END DATE AND TIME<br>10/09/15 1100 hrs |
| SAMPLE DECHLORINATED PRIOR TO ANALYSIS? ☐ YES ☒ NO<br>EFFLUENT ____ UPSTREAM ____ | TEST ORGANISM #1 AND AGE<br>Pimephales promelas 8 days | TEST ORGANISM #2 AND AGE<br>Ceriodaphnia dubia < 24 hours |
| SAMPLE FILTERED[1] PRIOR TO ANALYSIS? ☐ YES ☒ NO<br>EFFLUENT ____ UPSTREAM ____ | 90% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? ☒ YES ☐ NO | DILUTION WATER USED TO ACHIEVE AEC<br>upstream 1906102A |
| FILTER MESH SIEVE SIZE[2]<br>None | EFFLUENT ORGANISM #1 % MORTALITY AT AEC<br>LC50=53.59% Effluent | EFFLUENT ORGANISM #2 % MORTALITY AT AEC<br>LC50=19.61% Effluent |
| SAMPLE AERATED DURING TESTING? ☐ YES ☒ NO | UPSTREAM ORGANISM #1 % MORTALITY<br>0% | UPSTREAM ORGANISM #2 % MORTALITY<br>0% |
| pH ADJUSTED? ☐ YES ☒ NO<br>EFFLUENT ____ UPSTREAM ____ | TEST RESULT AT AEC FOR ORGANISM #1<br>☐ PASS ☒ FAIL | TEST RESULT AT AEC FOR ORGANISM #2<br>☐ PASS ☒ FAIL |

## MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE

| PARAMETER | RESULT | METHOD | WHEN ANALYZED |
|---|---|---|---|
| Temperature °C | 20 | SM18 2550B stored at 4 degree C until test setup | 10/07/15 1045 hrs |
| pH Standard Units | 8.15 | SM18 4500-H B | 10/07/15 1045 hrs |
| Conductance µMohs | 1399 | SM18 2510B | 10/07/15 1045 hrs |
| Dissolved Oxygen mg/L | 7.5 | 03/12/14 0945 hrsSM18 4500-O G | 10/07/15 1045 hrs |
| Total Residual Chlorine mg/L | <0.04 | SM18 4500-Cl G | 10/07/15 1045 hrs |
| Unionized Ammonia mg/L | 28.1x0.08=2.25 | SM18 4500-NH3 F @ 25 degree C | 10/13/15 1115 hrs |
| *Total Alkalinity mg/L | 331 | SM18 2320B | 10/07/15 1400 hrs |
| *Total Hardness mg/L | 240 | SM18 2340 C | 10/07/15 1045 hrs |

*Recommended by USEPA guidance, not a required analysis.

[1] Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.
[2] Filters shall have a sieve size of 60 microns or greater.


CONTINUED ON PAGE 2

## WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE[1]

| PARAMETER | RESULT | METHOD | WHEN ANALYZED |
|---|---|---|---|
| Temperature °C | 20 | SM18 2550B stored at 4 degree C until test setup | 10/07/15 1045 hrs |
| pH Standard Units | 8.30 | SM18 4500-H B | 10/07/15 1045 hrs |
| Conductance µMohs | 186 | SM18 2510B | 10/07/15 1045 hrs |
| Dissolved Oxygen mg/L | 6.6 | SM18 4500-O G | 10/07/15 1045 hrs |
| Total Residual Chlorine mg/L | <0.04 | SM18 4500-Cl G | 10/07/15 1045 hrs |
| Unionized Ammonia mg/L | <0.05x0.10<0.010 | SM18 4500-NH3 F @ 25 degree C | 10/13/15 1115 hrs |
| *Total Alkalinity mg/L | 70.8 | SM18 2320B | 10/07/15 1400 hrs |
| *Total Hardness mg/L | 100 | SM18 2340 C | 10/07/15 1045 hrs |

*Recommended by USEPA guidance, not a required analysis.

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)

**PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC):** As indicated on permit. Test is invalid otherwise.

**EFFLUENT SAMPLE TYPE:** As indicated on permit. Test is invalid otherwise.

**TEST TYPE:** Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.

**TEST DURATION:** Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.

**TEST ORGANISMS:** As indicated on permit. Test is invalid otherwise.

**DILUTION WATER USED TO ACHIEVE AEC:** Upstream receiving water required if available.

**TEST METHOD:** The only acceptable method is the ***most current edition*** of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.

**TEST START DATE & TIME:** Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.

**FILTER MESH SIEVE SIZE:** Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.

**90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N):** If NO, test is invalid.

| PARAMETER | RESULT | NOTES | WHEN ANALYZED |
|---|---|---|---|
| Temperature °C | 0 - 6 | Unless received by the laboratory on the same day as collected, values outside this range invalidate the test. | Upon receipt |

[1] Where no upstream control is available, enter results from laboratory or synthetic control.

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

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

### 18. GENERAL INFORMATION

**18.1** Does the treatment works have, or is it subject to, an approved pretreatment program?

☐ Yes ☑ No

**18.2** Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works:

Number of non-categorical SIUs ____

Number of CIUs ____

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

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

NAME
Tyson Foods, Inc.

| MAILING ADDRESS | CITY | STATE | ZIP CODE |
|---|---|---|---|
| 1001 East Stoddard St. | Dexter | MO | 63841 |

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

Processing, cooking & packaging poultry

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

Principal Product(s): Chickens

Raw Material(s): live chickens

**19.3** Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd ☐ Continuous ☑ Intermittent

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

gpd ☐ Continuous ☑ Intermittent

**19.4** Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits ☑ Yes ☑ No

b. Categorical Pretreatment Standards ☐ Yes ☑ No

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

**19.5** Problems at the treatment works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☑ Yes ☐ No

If Yes, describe each episode

SIU utilizes disinfectants necessary due to USDA requirements. Said disinfectants disrupt wastewater treatment at low MLSS concentrations.

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

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

### 20. RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE

**20.1** Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe? ☐ Yes ☑ No

**20.2** Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ Dedicated Pipe

**20.3** Waste Description

| EPA Hazardous Waste Number | Amount (volume or mass) | Units |
|---|---|---|
| | | |
| | | |
| | | |

### 21. CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER

**21.1** Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?
☐ Yes ☑ No
Provide a list of sites and the requested information for each current and future site.

**21.2** Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

**21.3** List the hazardous constituents that are received (or are expected to be received). Included data on volume and concentration, if known. (Attach additional sheets if necessary)

**21.4** Waste Treatment

a. Is this waste treated (or will it be treated) prior to entering the treatment works?
☐ Yes ☐ No

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

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

If intermittent, describe the discharge schedule:

**END OF PART F**

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

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

| FACILITY NAME | PERMIT NO. | OUTFALL NO. |
|---|---|---|
| Dexter East Lagoon | MO- 0023213 | 1 |

## PART G – COMBINED SEWER SYSTEMS

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

### 22. GENERAL INFORMATION

**22.1 System Map.** Provide a map indicating the following: (May be included with basic application information.)

A. All CSO Discharges.
B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)
C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.

**22.2 System Diagram.** Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information:

A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.
B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.
C. Locations of In-Line or Off-Line Storage Structures.
D. Locations of Flow-Regulating Devices.
E. Locations of Pump Stations.

**22.3** Percent of collection system that is combined sewer 0

**22.4** Population served by combined sewer collection system 0

**22.5** Name of any satellite community with combined sewer collection system

### 23. CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT

**23.1** Description of Outfall

a. Outfall Number
b. Location
c. Distance from Shore (if applicable) _____ ft
d. Depth Below Surface (if applicable) _____ ft
e. Which of the following were monitored during the last year for this CSO?
☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO
☐ CSO Flow Volume ☐ Receiving Water Quality
f. How many storm events were monitored last year?

**23.2** CSO Events

a. Give the Number of CSO Events in the Last Year Events ☐ Actual ☐ Approximate
b. Give the Average Duration Per CSO Event
Hours ☐ Actual ☐ Approximate
c. Give the Average Volume Per CSO Event
Million Gallons ☐ Actual ☐ Approximate
d. Give the minimum rainfall that caused a CSO event in the last year _____ inches of rainfall

**23.3** Description of Receiving Waters

a. Name of Receiving Water
b. Name of Watershed/River/Stream System
c. U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)
d. Name of State Management/River Basin
e. U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)

**23.4** CSO Operations

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)

**END OF PART G**

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

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

PART A – BASIC APPLICATION INFORMATION

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

1.1 **Fees Information:**

**DOMESTIC OPERATING PERMIT FEES – PRIVATE**

Annual operating permit fees are based on flow.

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

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

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

**PUBLIC SEWER SYSTEM OPERATING PERMIT FEES** (City, public sewer district, public water district, or other publicly owned treatment works) Annual fee is based on number of service connections. The table of fees is in 10 CSR 20-6.011 and is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6.pdf. New public sewer system facilities should not submit any fee as the department will invoice the permittee.

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

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

2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.

2.1 Self-explanatory.

2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

2.3-2.4 Self-explanatory.

3. Owner – Provide the legal name, mailing address, phone number, and email address of the owner.

3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 15 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice.

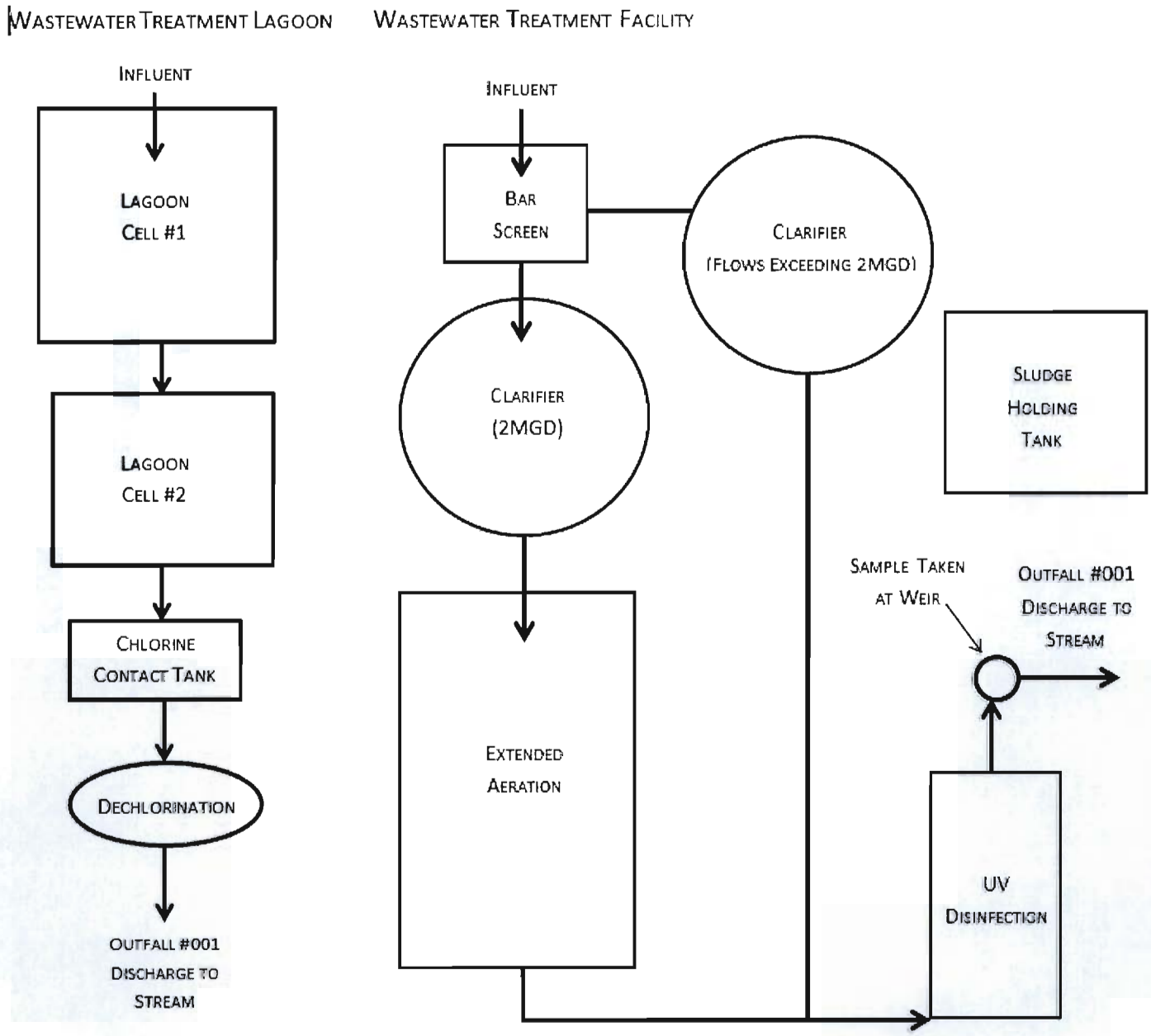
3.2-3.4 Self-explanatory.

4. Continuing Authority – Provide information for the permanent organization which will serve as the continuing authority for the operation, maintenance, and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6.pdf or contact the Department of Natural Resources Water Protection Program (see contact information below).

5. Operator – Provide the name, certificate number, title, mailing address, phone number, and email address of the operator of the facility.

6. Provide the name, title, mailing address, work phone number, and email address of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department.

7.1 **Process Flow Diagram Examples**




7.2 A topographic map is available on the web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.

7.3 For Standard Industrial Codes visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the Department of Natural Resources' Water Protection Program.

7.4-7.8 Self – explanatory.

7.9 If wastewater is land-applied submit form I: www.dnr.mo.gov/forms/780-1686-f.pdf.

7.10-8. Self-explanatory

9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.

9.2-9.9 Self – explanatory.

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

PART B – ADDITIONAL APPLICATION INFORMATION
10.-14. Self-explanatory

PART C – CERTIFICATION
15. Signature – All applications must be signed as follows and the signatures must be original:
   a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
   b. For a partnership or sole proprietorship, by a general partner or the proprietor.
   c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

PART D – EXPANDED EFFLUENT TESTING DATA
16. Self-explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA
17. Self- explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES
18. Federal regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
18.1 Self – explanatory
18.2 A noncategorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
   i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
   ii. Contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   iii. Is designated as an SIU by the control authority.
19.-21.4 Self-explanatory.

PART G – COMBINED SEWER SYSTEMS
22.-23.4 Self-explanatory.

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

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

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

If there are any questions concerning this form, contact the appropriate Department of Natural Resources regional office or the Water Protection Program at 573-751-6825. A map of the department's regional offices with addresses and telephone numbers is available at www.dnr.mo.gov/regions/ro-map.pdf .