

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

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

|                                 |   |
|---------------------------------|---|
| Permit No.                      | MO-0058203  |
| Owner:                          | City of Jamestown   |
| Address:                        | P.O. Box 207, Jamestown, MO 65046   |
| Continuing Authority:           | Same as above   |
| Address:                        | Same as above   |
| Facility Name:                  | Jamestown WWTF  |
| Facility Address:               | 0.25 miles south of Hwy 179 & School Ave. intersection, Jamestown, MO 65046 |
| Legal Description:              | NE ¼, NW ¼, Sec. 8, T46N, R14W, Moniteau County                             |
| UTM Coordinates:                | X= 546590, Y= 4290230   |
| Receiving Stream:               | Haldiman Branch (C) (3960) (Losing)   |
| First Classified Stream and ID: | Haldiman Branch (C) (3960) (Losing)   |
| USGS Basin & Sub-watershed No.: | (10300102-0806)   |

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.

Flow splitter, two parallel preliminary screening and flow equalization trains, flow splitter, two parallel integrated fixed-film activated sludge (IFAS) trains, two parallel secondary clarifiers, two UV disinfection systems in series, post aeration basin, two aerobic digesters in parallel, sludge is hauled by contract hauler.

Design population equivalent is 526.

Design flow is 40,000 gallons per day.

Actual flow is 33,700 gallons per day.

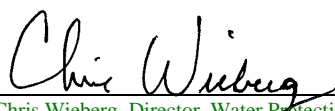
Design sludge production is 9.0 dry tons/year.

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 644.051.6 of the Law.

February 1, 2020  
Effective Date

September 30, 2024  
Expiration Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

  
Chris Wieberg, Director, Water Protection Program

| OUTFALL<br>#001  | TABLE A-1.<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 upon issuance 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<br>MAXIMUM           | WEEKLY<br>AVERAGE | MONTHLY<br>AVERAGE            | MEASUREMENT<br>FREQUENCY | SAMPLE<br>TYPE  |
| Limit Set: M   |  |                            |                   |                               |                          |                 |
| Flow   | MGD  | *                          |                   | *                             | once/month               | 24 hr. estimate |
| Biochemical Oxygen Demand <sub>5</sub>   | mg/L   |                            | 15                | 10                            | once/month               | composite**     |
| Total Suspended Solids   | mg/L   |                            | 20                | 15                            | once/month               | composite**     |
| Ammonia as N<br>(April 1 – Sept 30)  | mg/L   | 3.7                        |                   | 1.4                           | once/month               | grab            |
| (Oct 1 – March 31)   |  | 7.5                        |                   | 2.9                           |                          |                 |
| Oil & Grease   | mg/L   | 15                         |                   | 10                            | once/month               | grab            |
| E. Coli (Note 1)   | #/100 mL   |                            | 126               | 126                           | once/month               | grab            |
| EFFLUENT PARAMETER(S)  | UNITS  | MINIMUM                    |                   | MAXIMUM                       | MEASUREMENT<br>FREQUENCY | SAMPLE<br>TYPE  |
| pH – Units***  | SU   | 6.5                        |                   | 9.0                           | once/month               | grab            |
| EFFLUENT PARAMETER(S)  | UNITS  |                            |                   | MONTHLY<br>AVERAGE<br>MINIMUM | MEASUREMENT<br>FREQUENCY | SAMPLE<br>TYPE  |
| Biochemical Oxygen Demand <sub>5</sub> – Percent Removal (Note 2, Page 2)  | %  |                            |                   | 85                            | once/month               | calculated      |
| Total Suspended Solids – Percent Removal (Note 2, Page 2)  | %  |                            |                   | 85                            | once/month               | calculated      |
| MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2020. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.   |  |                            |                   |                               |                          |                 |

\* Monitoring requirement only.

\*\* A composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.

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

**Note 1** - Effluent limitations and monitoring requirements for *E. coli* are applicable at all times due to the classification of Haldiman Branch as a losing stream. 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<br>#001  | TABLE A-2.<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 <u>February 1, 2020</u> and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: |                            |                   |                    |                          |                |
| EFFLUENT PARAMETER(S)  | UNITS   | FINAL EFFLUENT LIMITATIONS |                   |                    | MONITORING REQUIREMENTS  |                |
|  |   | DAILY<br>MAXIMUM           | WEEKLY<br>AVERAGE | MONTHLY<br>AVERAGE | MEASUREMENT<br>FREQUENCY | SAMPLE<br>TYPE |
| Acute Whole Effluent Toxicity (Note 3)   | TU <sub>a</sub>   | *                          |                   |                    | once/permit cycle        | composite**    |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>MARCH 28, 2024</u> . |   |                            |                   |                    |                          |                |

**Note 3** – The Acute WET test shall be conducted once per permit cycle. See Special Condition #17 for additional requirements.

| Permitted<br>Feature: INF  | 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 <b>February 1, 2020</b> 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<br>PARAMETER(S)  | UNITS  | MONITORING REQUIREMENTS |             |
|  |  | MEASUREMENT FREQUENCY   | SAMPLE TYPE |
| Limit Set: IM  |  |                         |             |
| Biochemical Oxygen Demand <sub>5</sub> (Note 2)  | mg/L   | once/month              | Composite** |
| Total Suspended Solids (Note 2)  | mg/L   | once/month              | Composite** |
| MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>MARCH 28, 2020</u> .   |  |                         |             |

**Note 2** – Influent sampling for BOD<sub>5</sub> and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula:  

$$[(\text{Average Influent} - \text{Average Effluent}) / \text{Average Influent}] \times 100\% = \text{Percent Removal}$$
 Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.

#### C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and August 1, 2019, and hereby incorporated as though fully set forth herein.

#### D. SPECIAL CONDITIONS

1. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
  - a. To comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
    - i. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - ii. controls any pollutant not limited in the permit.
  - b. To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.
2. All outfalls must be clearly marked in the field.
3. 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.
4. Changes in Discharges of Toxic Substances  
 The permittee shall notify the Director as soon as it knows or has reason to believe:
  - a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
  - b. One hundred micrograms per liter (100 µg/L);
  - c. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
  - d. Five (5) times the maximum concentration value reported for the pollutant in the permit application;
  - e. The level established by the Director in accordance with 40 CFR 122.44(f).

D. SPECIAL CONDITIONS (Continued)

- f. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
6. Reporting of Non-Detects:
  - a. An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
  - b. The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
  - c. The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
  - d. The permittee shall use one-half of the detection limit for the non-detect result when calculating monthly averages.
  - e. See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
7. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
8. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report to the Northeast Regional Office annually, by January 28<sup>th</sup>, for the previous calendar year. The report shall contain the following information:
  - a. A list of all:
    - i. Sanitary Sewer Overflows (SSO) that occurred for the previous year, including SSOs that do not reach waters of the state and;
    - ii. Building backups in which the backup is attributable to the public sewer system.
    - iii. This does not include SSOs that occur due to routine maintenance of sewer lines.
    - iv. This list shall also include the following information for each individual SSO:
      - a. The location of each SSO (GPS, 911 address, manhole number, etc.)
      - b. What portion of the collection system did the SSO occur at (manhole, lamphole, sewer cleanout, etc.)
      - c. The estimated volume (gallons) of each SSO.
      - d. The estimated duration of each SSO.
      - e. If the SSO entered waters of the state, and include the name of receiving water. If the SSO entered a drainageway, use the first named stream that the drainageway enters (e.g. first named stream = Dry Creek; Report = Tributary to Dry Creek).
      - f. Cause for the SSO.
      - g. How each SSO was mitigated.
      - h. What actions were taken to prevent a reoccurrence of each SSO.
  - b. A summary of the efforts to locate and eliminate sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
  - c. A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
  - d. A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.
9. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Northeast Regional Office or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: <http://dnr.mo.gov/mogem> 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.
10. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
11. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain locked except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.



D. SPECIAL CONDITIONS (Continued)

12. 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.
13. 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.
14. An all-weather access road shall be provided to the treatment facility.
15. 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.
16. Electronic Discharge Monitoring Report (eDMR) Submission System.
  - a. Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
  - b. Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time the current or a new system is available to allow direct input of the data:
    1. Collection System Maintenance Annual Reports;
    2. Schedule of Compliance Progress Reports;
    3. Sludge/Biosolids Annual Reports;
    4. Pretreatment Program Reports; and
    5. Any additional report required by the permit excluding bypass reporting.After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
  - c. Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
    1. Bypass reporting, See Special Condition #9 for 24-hr. bypass reporting requirements.
  - d. Electronic Submissions. To access the eDMR system, use the following link in your web browser:  
<https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>.
  - e. Waivers from Electronic Reporting. The permittee must submit compliance monitoring data and reports electronically. The Department may grant a waiver to a permittee in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.
17. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
  - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
    - o The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
    - o The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
  - (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
  - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
  - (d) The laboratory shall not chemically dechlorinate the sample.
  - (e) The Allowable Effluent Concentration (AEC) is 100%; the dilution series is: 6.25%, 12.5%, 25%, 50%, and 100%.
  - (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
  - (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ( $TU_a = 100/LC_{50}$ ) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent ( $LC_{50}$ ) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
**FACT SHEET**  
**FOR THE PURPOSE OF MODIFICATION/RENEWAL**  
**OF**  
**MO-0058203**  
**JAMESTOWN SOUTH WWTF**

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 Minor

**Part I – Facility Information**

Facility Type: POTW - SIC #4952

**Facility Description:**

Two parallel preliminary screening and flow equalization trains, flow splitter, two parallel integrated fixed-film activated sludge (IFAS) trains, two parallel secondary clarifiers, two UV disinfection systems in series, post aeration basin, two aerobic digesters, sludge is hauled by contract hauler.

Collection system length: 3.93 miles (20,000 ft)

Construction of the new treatment plant was covered under CP0001755. The Statement of Work Complete was received November 25, 2019. As the renewal application was received just before the Statement of Work Complete, the previously public noticed modification is being issued as the renewal, since Jamestown constructed a new treatment plant and has Antidegradation effluent limits.

- Since the public notice of the draft operating permit, Standard Conditions Part 3 was updated and is included with this permit issuance, along with the revision to the general criteria standard condition.
- The influent monitoring was adjusted from quarterly to monthly to match the monitoring frequency of the effluent limits.
- The factsheet was updated to include additional information regarding operational testing, application receipt dates, and removal of the discussion of EPA's 2013 mussel ammonia criteria.

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

☒ - Yes; Halidman Branch (C) (3960) is now classified as a losing stream.

Application Date: 10/29/2019

Expiration Date: 09/30/2019

**OUTFALL(S) TABLE:**

| OUTFALL | DESIGN FLOW<br>(CFS) | TREATMENT LEVEL | EFFLUENT TYPE |
|---------|----------------------|-----------------|---------------|
| #001    | 0.06                 | Secondary       | Domestic      |

**Facility Performance History:**

The City of Jamestown was formerly served by two facilities, the Jamestown South Lagoon, #MO-0058203, and the Jamestown North Lagoon, #MO-0057410. A review of the south lagoon's DMR data from 2010 to May of 2015 shows 14 limit exceedances of BOD and eight limit exceedances of TSS. In the same time period, the north lagoon had five BOD limit exceedances and seven TSS limit value exceedances.

The Jamestown South Lagoon was referred to Enforcement on March 27, 2015, for failing to meet effluent limits and maintain the lagoon. The Jamestown North Lagoon was referred to Enforcement on November 26, 2014, for failing to upgrade to meet disinfection requirements.

The last record review was on 01/09/2014. It was determined that the facility was not meeting effluent limits.

Comments:

Changes in this permit include updating the facility description and lowering of BOD and TSS limits to those established in the revised Jamestown Antidegradation Review from March 2013 as well as the addition of *E. Coli* as a parameter. 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 inflow and infiltration reporting requirements.

## **Part II – Operator Certification Requirements**

Applicable ☒; This facility is required to have a certified operator.

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

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
- Municipalities ☒
- Public Sewer District: ☐
- County ☐
- Public Water Supply Districts: ☐
- Private sewer company regulated by the Public Service Commission: ☐
- State or Federal agencies: ☐

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/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: Brandon Cook  
Certification Number: 13082  
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.

- ✓ The facility is a mechanical plant and is required to conduct operational control monitoring as follows:

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

|                                     |             |
|-------------------------------------|-------------|
| Settleability – Mixed Liquor        | Daily (M-F) |
| Dissolved Oxygen – Mixed Liquor     | Daily (M-F) |
| Dissolved Oxygen – Aerobic Digester | Daily (M-F) |

## **Part IV – Receiving Stream Information**

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

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

| WATER-BODY NAME                                  | CLASS | WBID | DESIGNATED USES*                   | 12-DIGIT HUC  | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|--|-------|------|------------------------------------|---------------|-------------------------------------|
| Haldiman Branch<br>100 K Extent Remaining Stream | (C)   | 3960 | AQL, IRR, LWW, SCR,<br>WBC(B), HHP | 10300102-0806 | 0.0                                 |

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

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

| RECEIVING STREAM (C, P) | LOW-FLOW VALUES (CFS) |      |       |
|-------------------------|-----------------------|------|-------|
|                         | 1Q10                  | 7Q10 | 30Q10 |
| Haldiman Branch (C)     | 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**

Haldiman Creek is not currently listed on the 303(d) list.

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

### **ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

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

☒ - The facility discharges to a Losing Stream, as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], and has submitted an alternative evaluation including a seasonal discharging lagoon with sprinkler irrigation and a recirculating filter with soil absorption. However, due to the severe collapse potential stated in the submitted Geohydrological Evaluation and large land requirement, these alternatives were determined to not be practical).

### **ANTI-BACKSLIDING:**

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

☒ - 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.

- ✓ The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

**General Criteria.** The previous permit contained a special condition which described a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4). In order to comply with 40 CFR 122.44(d)(1), the permit writer has conducted reasonable potential determinations for each general criterion and established numeric effluent limitations where reasonable potential exists. While the removal of the previous permit special condition creates the appearance of backsliding, since this permit establishes numeric limitations where reasonable potential to cause or contribute to an excursion of the general criteria exists the permit maintains sufficient effluent limitations and monitoring requirements in order to protect water quality, this permit is equally protective as compared to the previous permit. Therefore, given this new information, and the fact that the previous permit special condition was not consistent with 40 CFR 122.44(d)(1), an error occurred in the establishment of the general criteria as a special condition of the previous permit. Please see Part VI – Effluent Limits Determination for more information regarding the reasonable potential determinations for each general criterion related to this facility.

**ANTIDEGRADATION:**

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

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

**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.

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

**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 enforcement action is due to failing to submit progress reports, to comply with effluent limits, to maintain an Operations and Maintenance manual, and to provide adequate fencing with proper warning signs on all sides of the perimeter fence.

**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 currently using the eDMR data reporting system.

## **NUMERIC LAKE NUTRIENT CRITERIA**

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

### **PRETREATMENT PROGRAM:**

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

☒ - The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

### **REASONABLE POTENTIAL ANALYSIS (RPA):**

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

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

☒ - A RPA was not conducted for this facility. An RPA analysis was completed for the last permit cycle. Due to permit synchronization, the previous permit cycle was reduced to a time period of less than 5 years. Therefore, all RPA results from short term permit have been carried over to this permit.

### **REMOVAL EFFICIENCY:**

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

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

### **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 list of all SSOs and building backups (locations, features of collection system where the SSO/building backup occurred, volumes, durations, receiving stream, causes, mitigation efforts, and actions to prevent reoccurrences), a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

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

#### **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 SOC's, and attain a greater level of consistency, on October 25, 2012 the Department issued a policy on development of SOC's. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as an affordability analysis.

☒ - This permit does not contain a SOC.

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

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

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

Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges.

☒ - A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

**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:

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

Where C = downstream concentration      C<sub>e</sub> = effluent concentration  
Cs = upstream concentration              Q<sub>e</sub> = effluent flow  
Qs = upstream flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration).and acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

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:**

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

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

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

- ☐ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility that exceeds its design population equivalent (PE) for BOD<sub>5</sub> whether or not its design flow is being exceeded.
- ☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- ☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH<sub>3</sub>)
- ☒ Facility is a municipality with a Design Flow ≥ 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 does not discharge to a 303(d) listed stream.

## **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 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)] | <input type="checkbox"/>            |
| Lake or Reservoir [10 CSR 20-7.015(3)]             | <input type="checkbox"/>            |
| Losing [10 CSR 20-7.015(4)]                        | <input checked="" type="checkbox"/> |
| Metropolitan No-Discharge [10 CSR 20-7.015(5)]     | <input type="checkbox"/>            |
| Special Stream [10 CSR 20-7.015(6)]                | <input type="checkbox"/>            |
| Subsurface Water [10 CSR 20-7.015(7)]              | <input type="checkbox"/>            |
| All Other Waters [10 CSR 20-7.015(8)]              | <input type="checkbox"/>            |

### **OUTFALL #001 – MAIN FACILITY OUTFALL**

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

### **EFFLUENT LIMITATIONS TABLE:**

| PARAMETER                           | Unit | Basis for Limits | Daily Maximum | Weekly Average | Monthly Average | Modified | Previous Permit Limitations |
|-------------------------------------|------|------------------|---------------|----------------|-----------------|----------|-----------------------------|
| Flow                                | MGD  | 1                | *             |                | *               | No       | */*                         |
| BOD <sub>5</sub>                    | mg/L | 1                |               | 15             | 10              | Yes      | 65/45                       |
| TSS                                 | mg/L | 1                |               | 20             | 15              | Yes      | 120/80                      |
| pH                                  | SU   | 1                | 6.5-9.0       |                | 6.5-9.0         | Yes      | ≥ 6.5                       |
| Ammonia as N<br>(April 1 – Sept 30) | mg/L | 3                | 3.6           |                | 1.4             | No       | 3.6/1.4                     |
| Ammonia as N<br>(Oct 1 – March 31)  | mg/L | 3                | 7.5           |                | 2.9             | No       | 7.5/2.9                     |
| Oil & Grease (mg/L)                 | mg/L | 1, 3             | 15            |                | 10              | No       | 15/10                       |
| <i>Escheria Coliform (E. Coli)</i>  | **   | 1, 3             | 126           |                | 126             | Yes      | ***                         |
| Acute Whole Effluent Toxicity       | TUa  | 1, 9             | *             |                |                 | Yes      | ***                         |

\* - Monitoring requirement only.

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

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

#### **Basis for Limitations Codes:**

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

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

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** 15 mg/L Weekly Average and 10 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015].
- **Total Suspended Solids (TSS).** 20 mg/L Weekly Average and 15 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015].
- **pH.** – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3] default pH 7.8 SU. No mixing considerations allowed; therefore, WLA = appropriate criterion.

| Season | Temp (°C) | pH (SU) | Total Ammonia Nitrogen<br>CCC (mg/L) | Total Ammonia Nitrogen<br>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:  $C_e = ((0.06 + 0.0)1.5 - (0.0 * 0.01))/0.06$   
 $C_e = 1.5 \text{ mg/L}$

Acute WLA:  $C_e = ((0.06 + 0.0)12.1 - (0.0 * 0.01))/0.06$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = 1.17 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

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

$MDL = 1.17 \text{ mg/L} (3.11) = 3.6 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 1.17 \text{ mg/L} (1.19) = 1.4 \text{ mg/L}$

[CV = 0.6, 95<sup>th</sup> Percentile, n = 30]

Winter: October 1 – March 31

Chronic WLA:  $C_e = ((0.06 + 0.0)3.1 - (0.0 * 0.01))/0.06$   
 $C_e = 3.1 \text{ mg/L}$

Acute WLA:  $C_e = ((0.06 + 0.0)12.1 - (0.0 * 0.01))/0.06$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.780) = 2.42 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

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

$MDL = 2.42 \text{ mg/L} (3.11) = 7.5 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile]

$AML = 2.42 \text{ mg/L} (1.19) = 2.9 \text{ mg/L}$

[CV = 0.6, 95<sup>th</sup> Percentile, n = 30]

The limits were determined using the default CV=0.60 recommended by the EPA's technical support document and the resulting default multipliers. The default CV was used because new technology will be implemented and therefore data from either the Jamestown North Lagoon or Jamestown South Lagoon would not apply. The default limits provide adequate protection for aquatic life without placing unnecessarily restrictive limits on the permittee.

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Escherichia coli (E. coli).** Discharges to losing streams shall not exceed 126 per 100 mL as a Daily Maximum at any time, as per 10 CSR 20-7.031(5)(C). Monitoring only for a monthly average. No more than 10% of samples shall exceed 126 #/100 mL daily maximum as per 10 CSR 20-7.015(9)(B)1.G.
- **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.

**Minimum Sampling and Reporting Frequency Requirements.**

| PARAMETER                     | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|-------------------------------|--------------------|---------------------|
| Flow                          | twice/week         | once/month          |
| BOD <sub>5</sub>              | once/month         | once/month          |
| TSS                           | once/month         | once/month          |
| pH                            | once/month         | once/month          |
| Ammonia as N                  | once/month         | once/month          |
| Oil & Grease                  | once/month         | once/month          |
| <i>E.Coli</i>                 | once/month         | once/month          |
| Acute Whole Effluent Toxicity | once/permit cycle  | once/permit cycle   |

**Sampling Frequency Justification:**

*E. coli* was added and sampling is set at monthly per 10 CSR 20-7.015(9)(D)6.C. Sampling and Reporting Frequency for all other parameters was retained from the previous permit.

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

**Acute Whole Effluent Toxicity**

- ☒ -No less than **ONCE/PERMIT CYCLE:**  
☒ -Municipality with a design flow  $\geq$  22,500 gpd, but less than 1.0 MGD.  
☐ - Other, please justify.

**Sampling Type Justification**

As per 10 CSR 20-7.015, BOD<sub>5</sub>, TSS, and WET test samples collected for mechanical plants shall be a 24 hour composite sample. Due to the small size of this facility this composite sample shall be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample. Grab samples, however, must be collected for pH, Ammonia as N, *E. coli*, and Oil & Grease. 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 and Oil & Grease 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.

**OUTFALL #001 – GENERAL CRITERIA CONSIDERATIONS:**

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule or regulation promulgated by the commission.

- (A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on November 16, 2017, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with effluent limitations that are more stringent than the secondary treatment technology based effluent limits established in 40 CFR 133 and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

- (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.
- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.
- (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.
- (E) Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state. Please see (D) above as justification is the same.
- (F) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.
- (G) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.
- (H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.
- (I) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

## **Part VIII – Finding of Affordability**

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

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

**Cost Analysis for Compliance** - The Department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of Department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **Appendix – Cost Analysis for Compliance**

## **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 and all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit. With permit synchronization, this permit will expire in the 3<sup>rd</sup> Quarter of calendar year 2024.

### **PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit was from September 25, 2015 to October 25, 2015. No responses received. After public notice the department added a special condition that requires the permittee to submit discharge monitoring report data via the department's online eDMR system. Additionally, Standard Conditions Part III, which was revised on August 1, 2019 replaces the previous version and is incorporated into this final operating permit.

**DATE OF FACT SHEET:** 08/06/2015; UPDATED 01/13/2020

### **COMPLETED BY:**

RACHEL SCHNEIDER, EI  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
ENGINEERING SECTION

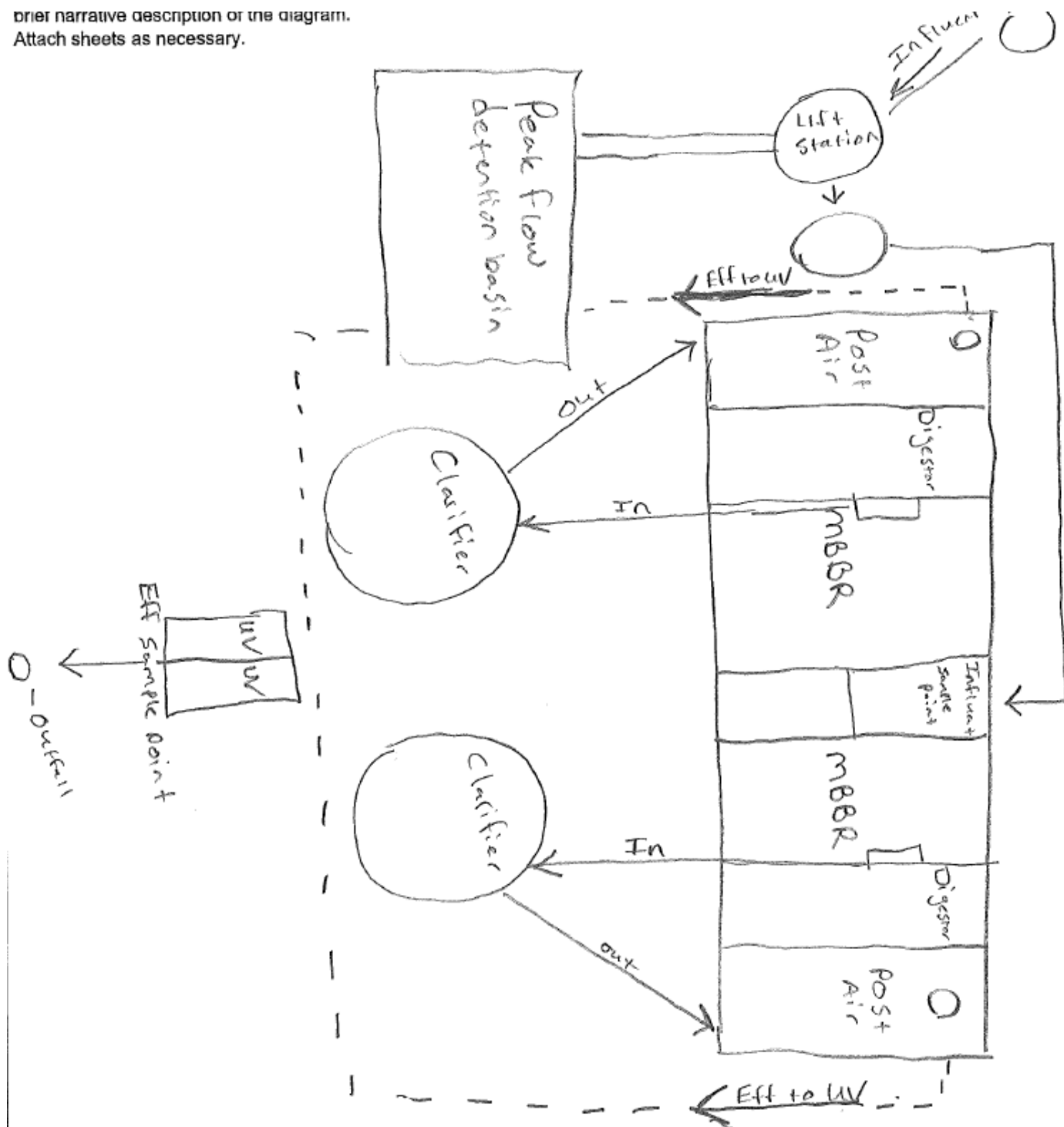
### **UPDATED BY:**

Leasue Meyers, EI  
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WATER PROTECTION PROGRAM  
ENGINEERING SECTION  
[leasue.meyers@dnr.mo.gov](mailto:leasue.meyers@dnr.mo.gov)

## Appendices

### APPENDIX- PROCESS FLOW DIAGRAM

brief narrative description of the diagram.  
Attach sheets as necessary.



**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. |                 |
| Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)                                    | 1 pt. / MGD or major fraction thereof.     |                 |
| <b>EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:</b>  |  |                 |
| Missouri or Mississippi River   | 0  |                 |
| All other stream discharges except to losing streams and stream reaches supporting whole body contact             | 1  |                 |
| Discharge to lake or reservoir outside of designated whole body contact recreational area                         | 2  |                 |
| Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation            | 3  | 3               |
| <b>PRELIMINARY TREATMENT – Headworks</b>  |  |                 |
| Screening and/or comminution  | 3  | 3               |
| Grit removal  | 3  |                 |
| Plant pumping of main flow (lift station at the headworks)  | 3  |                 |
| <b>PRIMARY TREATMENT</b>  |  |                 |
| Primary clarifiers  | 5  |                 |
| Combined sedimentation/digestion  | 5  |                 |
| Chemical addition (except chlorine, enzymes)  | 4  |                 |
| <b>REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)</b>                            |  |                 |
| Push – button or visual methods for simple test such as pH, Settleable solids                                     | 3  | 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   |                 |
| <b>ALTERNATIVE FATE OF EFFLUENT</b>   |  |                 |
| Direct reuse or recycle of effluent   | 6  |                 |
| Land Disposal – low rate  | 3  |                 |
| High rate   | 5  |                 |
| Overland flow   | 4  |                 |
| Total from page <b>ONE (1)</b>  | ----                                       | 14              |



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

| ITEM   | POINTS POSSIBLE | POINTS ASSIGNED |
|--|-----------------|-----------------|
| <b>VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)</b> |                 |                 |
| Variation do not exceed those normally or typically expected                                     | 0               | 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               |                 |
| <b>SECONDARY TREATMENT</b>   |                 |                 |
| Trickling filter and other fixed film media with secondary clarifiers                            | 10              | 10              |
| Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)   | 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               |                 |
| <b>DISINFECTION</b>  |                 |                 |
| Chlorination or comparable   | 5               |                 |
| Dechlorination   | 2               |                 |
| On-site generation of disinfectant (except UV light)   | 5               |                 |
| UV light   | 4               | 4               |
| <b>SOLIDS HANDLING - SLUDGE</b>  |                 |                 |
| Solids Handling Thickening   | 5               |                 |
| Anaerobic digestion  | 10              |                 |
| Aerobic digestion  | 6               | 6               |
| Evaporative sludge drying  | 2               |                 |
| Mechanical dewatering  | 8               |                 |
| Solids reduction (incineration, wet oxidation)   | 12              |                 |
| Land application   | 6               |                 |
| Total from page <b>TWO (2)</b>   | ----            | 20              |
| Total from page <b>ONE (1)</b>   | ---             | 14              |
| Grand Total  | ---             | 34              |

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

## Appendix: Affordability Analysis

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

**Jamestown WWTF, Permit Renewal**  
**City of Jamestown**  
**Missouri State Operating Permit #MO-0058203**

Section 644.145 RSMo requires the Department of Natural Resources (DNR) to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works.”

The Department is required to issue a permit with final effluent limits in accordance with 644.051.1.(1) RSMo, 644.051.1.(2) RSMo, and the Clean Water Act. The practical result of many affordability findings will be to allow longer compliance schedules to mitigate adverse impact to distressed populations resulting from the costs of upgrading the wastewater treatment facility.

This cost analysis is based on data available to the Department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City’s financial and socioeconomic situation. The financial information provided by the permittee is included in the Appendix section of the permit labeled Financial Questionnaire.

### Facility Description:

|                                      |     |
|--------------------------------------|-----|
| Residential Connections:             | 157 |
| Commercial Connections:              | 4   |
| Industrial Connections:              | 17  |
| Total Connections for this facility: | 178 |

### New Permit Requirements:

The city of Jamestown plans to upgrade from two lagoons, the Jamestown North Lagoon and the Jamestown South Lagoon, to a mechanical wastewater treatment plant located near the existing Jamestown South Lagoon. Both of the old permits included schedules of compliance for Ammonia, BOD<sub>5</sub>, and TSS to meet losing stream requirements. The new 40,000 gallon per day wastewater treatment plant will include preliminary screening, flow equalization, IFAS bioreactors, secondary clarifiers, UV disinfection, a post aeration basin, and anaerobic digesters. The permit requires compliance with new monitoring requirements for disinfection.

### Anticipated Costs Associated with Complying with the New Requirements:

The total cost estimated for new monthly monitoring requirements is \$348 annually. This cost, if financed through user fees, might cost each household an extra \$0.16<sup>1</sup> per month. A community sets their user rates based on several factors. The percentage of the current user rate that is available to cover new debt is unknown to the Department.

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

Due to the minimal cost associated with this new permit requirement as well as the elimination of the need to test for the same parameters at two wastewater treatment plants, the Department anticipates the city of Jamestown has the means to raise \$348 annually.

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

The total cost estimated for the new monthly monitoring requirements is \$348 annually. This cost, if financed through user fees, might cost each household an extra \$0.16 per month. This would make the additional cost per household as a percent of median household income (MHI) 0.005%<sup>2</sup> based on the City’s MHI of \$50,744. The percent of median household based on the State’s MHI of \$47,333 was also determined to be 0.005%. The City has already raised user rates from \$36.50 to \$50.50.

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

*E. coli* is a species of bacteria that normally live in the intestines of humans and warm-blooded animals. While some strains of *E. coli* are harmless, there are several strains that can cause severe diarrhea, abdominal cramps, and severe kidney failure. The people most susceptible to these consequences are young children, the elderly and those with weakened immune systems. The receiving stream that the facility discharges to contains the WBC (B) designated use to protect human health in accordance with Water Quality Standards (10 CSR 20-7.031) and the Clean Water Act. The disinfection of wastewater effluent benefits human health by reducing exposure to disease-causing bacteria, such as *E. coli*, and viruses and reducing health care costs to those infected by contaminated water. The City of Jamestown should construct and install a disinfection system at the treatment facility in order to protect human health as well as meet water quality standards.

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

The community reported their outstanding debt for their current wastewater collection and treatment systems to be \$0. Their current debt for the drinking water plant is \$138,000.

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

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

**Socioeconomic Data<sup>3-6:</sup>**

| Potentially Distressed Populations – City of Jamestown |          |
|--|----------|
| Unemployment   | 5.5%     |
| Adjusted Median Household Income (MHI)*                | \$50,744 |
| Percent Change in MHI (1990-2012)                      | +231.1%  |
| Percent Population Growth/Decline (1990-2012)          | +42.3%   |
| Change in Median Age in Years (1990-2012)              | -6.5     |
| Percent of Households in Poverty                       | 11.4%    |
| Percent of Households Relying on Food Stamps           | 14.8%    |

\* The State's average MHI of \$47,333 is used in this analysis

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

The community does not currently have any debt pertaining to wastewater treatment. Wastewater treatment will be regionalized and eliminate the two lagoons that currently serve the city. All wastewater will be directed to a new mechanical wastewater treatment facility. This regionalization will reduce sampling costs as the need to sample for the same parameters at two locations will be eliminated. The community did not report any other investments relating to environmental improvements

**(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards;**

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

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

The community did not report any other relevant local economic conditions.

### **Conclusion and Finding**

As a result of new regulations, the Department is proposing modifications to the current operating permit that may require the permittee to increase monitoring. The Department identified the actions for which cost analysis for compliance is required under Section 644.145 RSMo.

The Department estimates the cost for monthly monitoring for disinfection is \$348 per year. Should these additional costs be financed through user fees, it may require user fees 0.005% of the community's MHI.

The Department considered the eight (8) criteria presented in subsection 644.145.3 when evaluating the cost associated with the relevant actions. Taking into consideration these criteria, this analysis examined whether the above referenced permit modifications affects the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. As a result of reviewing the above criteria, the Department hereby finds that the action described above may result in a low burden with regard to the community's overall financial capability and a low financial impact for most individual customers/households; therefore, the new permit requirements are affordable.

### **References:**

1.  $((\text{Estimated cost for sampling annually} / \text{Total connections}) / 12 \text{ months}) = \text{Cost per household per month}$
2.  $(\text{Cost per household per month} / (\text{MHI} / 12)) * 100 = \text{Cost per household as a percent of MHI}$
3. Unemployment data was obtained from Missouri Department of Economic Development (July 2014) – <http://www.missourieconomy.org/pdfs/urel1407.pdf>
4. Median Household Income data from American Community Survey – Median income in the past 12 months – [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?\\_afpt=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table)
5. Population trend data was obtained from online at: 2012 Census Bureau Population Data - [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?\\_afpt=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table), 2000 Census Bureau Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls>, 1990 Census Bureau Population Data - <http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf>
6. Poverty data – American Community Survey- <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

APPENDIX: FINANCIAL QUESTIONNAIRE



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH  
**FINANCIAL QUESTIONNAIRE**

|  |   |
|--|---|
| <b>NOTE ► FINANCIAL INFORMATION THAT IS NOT PROVIDED THROUGH THIS FORM WILL BE OBTAINED BY THE DEPARTMENT FROM READILY AVAILABLE SOURCES.</b>  |   |
| <b>1. GENERAL INFORMATION</b>  |   |
| FACILITY NAME<br>Jamestown Wastewater Treatment Facility   | PERMIT NUMBER<br>#MO- 0058203   |
| CITY<br>Jamestown  | COUNTY<br>Moniteau  |
| <b>2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES)</b>   |   |
| 2.1 Number of connections to the facility: Residential <u>157</u> Commercial <u>4</u> Industrial <u>17</u>   |   |
| 2.2 Current sewer user rate:<br>Based on a 5,000 gallon per month usage \$ <u>50.50</u>  | The sewer user rate is (check one):<br><input type="checkbox"/> Rate Capacity (set rate)<br><input checked="" type="checkbox"/> Pay as You Go |
| 2.3 Current operating costs for the facility (excludes depreciation):  | \$27,395  |
| 2.4 Bond Rating (if applicable):   | NA  |
| 2.5 Bonding Capacity:<br><i>General obligation bond capacity allowed by constitution: cities=up to 20% of taxable tangible property; sewer districts=up to 5% of taxable tangible property</i>   |   |
| 2.6 Current outstanding debt relating to wastewater collection and treatment:<br><i>Debt information is typically available from your community's annual financial statements</i>  | SEWER \$0 WATER \$138,000   |
| 2.7 Amount of current user rate per household per month used toward payments on wastewater debt:   | SEWER \$0 WATER 35%   |
| 2.8 Overall net debt:<br><i>Net debt is defined as debt repaid by property taxes within a utility/municipality's service area. It excludes debt that is repaid by special user fees (e.g. revenue bonds). Debt information is typically available from your community's annual financial statements</i>  | \$0   |
| <b>3. FINANCIAL INFORMATION SPECIFIC TO MUNICIPALITIES</b>   |   |
| 3.1 Municipality's Full Market Property Value (FMPV):<br><i>FMPV data is typically available through your community or state assessor's office</i>   | ASSESSED VALUE \$2,897,038<br><i>Appraised Value \$13,680,930</i>   |
| 3.2 Municipality's property tax revenues:<br><i>Property tax revenues are typically available from your community's annual financial statements</i>  | \$27,744  |
| 3.3 Municipality's property tax collection rate:<br><i>To determine the collection rate, you will need to divide property tax revenues by the property taxes levied. To calculate property taxes levied, multiply the assessed value of real property within your community/service area by the property tax rate. This information is typically available through your community or state assessor's office. Property tax revenues are typically available in your community's annual financial statements.</i> | 96%   |

780-2511 (09-14)

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MAY 15 2015

WATER PROTECTION PROGRAM



#### 4. FINANCIAL INFORMATION SPECIFIC TO SEWER DISTRICTS

4.1 Total connections to the Sewer District: Residential \_\_\_\_\_ Commercial \_\_\_\_\_ Industrial \_\_\_\_\_

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

#### 5. OTHER CONSIDERATIONS (ALL FACILITIES)

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

NONE

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

NONE

5.3 Attach any relevant financial statements.

#### 6. CERTIFICATION

FINANCIAL CONTACT

OFFICIAL TITLE

EMAIL ADDRESS

TELEPHONE NUMBER WITH AREA CODE

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine or imprisonment.


OWNER OR AUTHORIZED REPRESENTATIVE

Jon Imhoff

OFFICIAL TITLE

Mayor

SIGNATURE



DATE SIGNED

4/28/15

For additional guidance, see <http://usmayors.org/urbanwater/media/2013/0529-report-WaterAffordability.pdf>.

For more information, contact the department's Water Protection Program at 573-751-1300, to speak with a permit writer in the domestic wastewater unit.

This completed form and any attachments should be submitted to:

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

**Missouri Department of Natural Resources  
Water Protection Program  
Water Pollution Control Branch  
NPDES Permits and Engineering Section**

## **Water Quality and Antidegradation Review**

*For the Protection of Water Quality and Determination of Effluent Limits for  
Discharge to Haldiman Branch*

*by  
Jamestown Wastewater Treatment Facility*



July 2012, revised March 2013

Jamestown WWTF, MO-0058203  
03/07/2013  
Page 2

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## 1. FACILITY INFORMATION

FACILITY NAME: Jamestown WWTF NPDES #: MO-0058203

FACILITY TYPE/DESCRIPTION: The City of Jamestown is proposing to replace two existing one-cell lagoons with a moving bed biological reactor (MBBR) that can be operated as an Integrated Fixed Film Activated Sludge (IFAS) system and ultraviolet disinfection. The South Lagoon (MO-0058203) is currently permitted for 22,000 gpd and the North Lagoon (MO-0057410) is permitted for 17,200 gpd for a total of 39,200 gpd. The City is proposing a design flow of 40,000 gpd (0.040 mgd) which is a slight increase in overall design flow from the two treatment plants. Along with the new treatment plant, the applicant is proposing to do sewer rehabilitation on their system to reduce inflow and infiltration.

COUNTY: Moniteau UTM COORDINATES: x= 545528; y= 4290391  
12- DIGIT HUC: 10300102-0806 LEGAL DESCRIPTION: NW ¼, NW ¼, Section 09, T 46N, R14W  
EDU\*: Ozark/Moreau/Loutre ECOREGION: Ozark Border/ Outer Ozark Border  
\* - Ecological Drainage Unit

## 2. WATER QUALITY INFORMATION

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, a facility is required to use *Missouri's Antidegradation Rule and Implementation Procedure (AIP)* for new and expanded wastewater discharges.

### 2.1. WATER QUALITY HISTORY:

Haldiman Branch and Factory Creek have been classified as losing streams at the existing lagoon discharge locations. Jamestown is electing to construct a new discharge, combining the two discharge locations and moving the discharge, but still in the losing stream setting. UAA's were conducted on Haldiman Branch in 2005, 2006 and 2007 by Tetra Tech and SES; however no recommendation has been made to the Clean Water Commission on removing Whole Body Contact from Haldiman Branch.

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | RECEIVING WATERBODY          | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|-------------------|-----------------|------------------------------|-------------------------------------|
| 001     | 0.062             | Secondary       | Tributary to Haldiman Branch | ~3                                  |

## 3. RECEIVING WATERBODY INFORMATION

| WATERBODY NAME               | CLASS | WBID | LOW-FLOW VALUES (CFS) |      |       | DESIGNATED USES** |
|------------------------------|-------|------|-----------------------|------|-------|-------------------|
|                              |       |      | 1Q10                  | 7Q10 | 30Q10 |                   |
| Tributary to Haldiman Branch | U     | --   | 0.0                   | 0.0  | 0.0   | General Criteria  |
| Haldiman Branch              | U     | --   | 0.0                   | 0.0  | 0.0   | General Criteria  |
| Haldiman Branch              | C     | 0807 | 0.0                   | 0.0  | 0.01  | AQL, LWW, WBC(B)* |

\* UAAs conducted in 2005-2007 with no recommendation presented to the Commission. WBC(B) remains.

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

### RECEIVING WATER BODY SEGMENT #1: Haldiman Branch

Upper end segment\* UTM coordinates: x= 545528; y= 4290391 (Outfall)

Lower end segment\* UTM coordinates: x= 548313; y= 4288890 (meets classified)

\*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

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#### 4. GENERAL COMMENTS

Bartlett and West prepared, on behalf of Jamestown a preliminary engineering report and Antidegradation Report dated May 2012. The receiving stream, Tributary to Haldiman Branch is losing for discharge purposes (Appendix A: Map). Applicant elected to assume that all pollutants of concern (POC) are degrading the receiving stream in the absence of existing water quality. An alternative analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix B was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and no endangered species were found to be impacted by the discharge.

#### 5. ANTIDEGRADATION REVIEW INFORMATION

The following is a review of the *Antidegradation Report* dated June 2012 and revised February 2013.

##### 5.1. TIER DETERMINATION

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

Table 1: Pollutants of Concern and Tier Determination

| POLLUTANTS OF CONCERN        | TIER* | DEGRADATION  | COMMENT               |
|------------------------------|-------|--------------|-----------------------|
| BOD <sub>5</sub> /DO         | 2     | Nondegrading | Permit limits applied |
| Total Suspended Solids (TSS) | **    | Nondegrading | Permit limits applied |
| Ammonia                      | 2     | Nondegrading |                       |
| pH                           | ***   | Nondegrading | Permit limits applied |
| Oil and Grease               | 2     | Nondegrading | Permit limits applied |
| <i>E. coli</i>               | 2     | Nondegrading | Disinfection required |

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

##### 5.2. EXISTING WATER QUALITY

At the existing South Lagoon, the stream was determined to be losing (Appendix A: Map). The receiving stream for the North Lagoon is also losing at the location of discharge. The proposed upgrade and expansion eliminates a discharge to Factory Creek. The upgrade and expansion will reduce concentration and loading to the streams. The new discharge will be located on a losing segment of Haldiman Branch.

Table 2: Overall Change in Jamestown Loading

| Parameters   | Current              |                | Proposed             |                | % Change in Loading |
|--------------|----------------------|----------------|----------------------|----------------|---------------------|
|              | Concentration (mg/L) | Load (lbs/day) | Concentration (mg/L) | Load (lbs/day) |                     |
| BOD          | 45                   | 14.7           | 10                   | 3.34           | -77%                |
| TSS          | 80                   | 26.2           | 15                   | 5.0            | -81%                |
| Ammonia (s)* | 10.6                 | 3.5            | 1.4                  | 0.47           | -87%                |

\* Facilities have ammonia monitoring only, current loading is based on average summer concentrations reported

Table 3: Loading at the South Lagoon

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| Parameters   | Current              |                | Proposed             |                | % Change in Loading |
|--------------|----------------------|----------------|----------------------|----------------|---------------------|
|              | Concentration (mg/L) | Load (lbs/day) | Concentration (mg/L) | Load (lbs/day) |                     |
| BOD          | 45                   | 8.3            | 10                   | 3.34           | -60%                |
| TSS          | 80                   | 14.7           | 15                   | 5.0            | -66%                |
| Ammonia (s)* | 13.7                 | 2.5            | 1.4                  | 0.47           | -81%                |

\* Facility has ammonia monitoring only, current loading is based on average summer concentration reported at S. Lagoon

### 5.3. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Five alternatives from non-degrading to less degrading to degrading alternatives were evaluated. This analysis showed that the return on environmental benefits with increasing cost of treatment did not justify more expenditure beyond the base case treatment alternative (see Appendix D, Attachment A).

Bartlett and West recommended completing a sewer system rehabilitation and flow study prior to designing and construction a new wastewater treatment facility; however that was not financially feasible so the alternatives selected are based on wet weather flow conditions anticipated to exist. All alternatives evaluated include work to the collection system and closure of the existing lagoons. Two lift stations need to be replaced, plus two new lift stations are needed to replace the North lagoon and to connect an unsewered area.

The first alternative evaluated was a seasonal discharging lagoon with sprinkler irrigation. Bartlett and West determined this alternative was not practical due to the severe collapse potential in most areas around Jamestown and the potential for future more restrictive effluent limits, such as ammonia and nutrients.

The second alternative evaluated was a recirculating filter with soil absorption. Recirculating filters have been widely used for wastewater treatment in Missouri. There is concern of recirculating filters meeting ammonia effluent limits without additional treatment. Low pressure soil absorption is an option following the recirculating filter to meet ammonia limits. To meet the soil absorption requirements, it is estimated that 120 to 240 acres would be necessary due to the peak flow loading potential in Jamestown.

The third alternative evaluated was an aerated lagoon with a recirculating filter. The aerated lagoon will work as primary treatment and help control peak flows by providing long detention time. The aerated lagoon design includes an insulated cover to maintain the temperature of the system as warm as practical. The recirculating filter will act as a secondary treatment, further reducing biochemical oxygen demand, total suspended solids and ammonia. Alternative three discharge limits are based on building the treatment plant downstream of the losing stream segment.

The fourth alternative evaluated is the preferred alternative is a moving bed biological reactor (MBBR) that can be operated as an Integrated Fixed Film Activated Sludge (IFAS) system and ultraviolet disinfection to allow modification in the future. Advantages of the system includes small footprint, high effluent treatment, better settling, less sludge production and better performance during cold weather. With the high inflow and infiltration Jamestown experiences, the MBBR system has the advantage to handle high peak flows.

The fifth alternative evaluated was a MBBR with additional filtration. This alternative was evaluated to improve nutrient removal and additional solids removal. This alternative can achieve a better quality effluent, but Bartlett and West concluded that the City cannot afford the initial costs of the system.

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Table 4: Alternatives Analysis Comparison

|                | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|----------------|---------------|---------------|---------------|---------------|---------------|
| BOD            | 30            | NA            | 30            | 10            | 10            |
| TSS            | 30            | NA            | 30            | 15            | 10            |
| Ammonia        | 3.0           | NA            | 1.5           | 1.5           | 1.5           |
| Initial Cost   | \$2,986,408   | \$3,134,114   | \$2,496,889   | \$2,338,824   | \$2,701,824   |
| O& M Costs     | \$508,454     | \$537,121     | \$572,015     | \$624,357     | \$643,050     |
| Present Worth* | \$4,402,198   | \$3,671,236   | \$3,068,905   | \$2,963,181   | \$4,936,756   |
| Economical     | Yes           | No            | Yes           | Yes           | No            |
| Practical      | No            | Yes           | Yes           | Yes           | Yes           |
| Affordable     | No            | No            | Yes           | Yes           | No            |
| Ratio          | 1.48          | 1.23          | 1.04          | Base          | 1.66          |

\*Present worth cost at 20 year design life and 5.0% interest

The applicant first identified the community that will be affected by the proposed degradation of water quality. The affected community is likely within an 8-mile radius from the discharge site, which includes all of Jamestown. Benefits to the community are work on the collection system, removal of two lagoons that are at the end of their lifespan, potential for growth. The environmental benefits include removal of existing lagoons, removal of failing onsite systems being connected to a municipal plant, removal of discharges located in a losing setting, disinfection of the effluent and higher treatment.

#### 5.3.1. REGIONALIZATION ALTERNATIVE

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional wastewater collection system is mentioned. There is not a regional authority, Jamestown is a municipality. The City of Jefferson is approximately 30 miles away and the City of Columbia's treatment plant is 12 miles away. There is not a continuing authority waiver to be obtained. NEEDS A WAIVER TO PREVENT CONFLICT WITH AREA WIDE MANAGEMENT PLAN APPROVED UNDER SECTION 208 OF THE CLEAN WATER ACT AND/OR UNDER 10 CSR 20-6.010(3) (B) 1 OR 2 CONTINUING AUTHORITIES? (Y OR N) N

#### 5.3.2. ANTIDegradation AFFORDABILITY

Bartlett and West concluded that alternatives 2 and 5, while practical solutions, they are not financially feasible solutions for the City. All alternatives evaluated include work to the collection system and closure of the existing lagoons. These alternatives include the same collection system upgrades of replacing two lift stations and construction of two new lift stations as the other alternatives. The initial cost of the alternatives is \$2.7 to \$3.1 million, which Bartlett and West concluded that these alternatives are not feasible. In Appendix C: Appendix C: Affordability Analysis of Chosen Alternative, the chosen alternative places the community's wastewater rates at 2.0% of the median household income. Alternatives 2 and 5, while being more protective would increase rates to above the proposed \$51 a month. Appendix C provides the department's affordability analysis required in Section 644.145 RSMo.

### 6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).

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4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

## 7. MIXING CONSIDERATIONS

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

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

## 8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION  
STUDY CONDUCTED: No USE ATTAINABILITY ANALYSIS CONDUCTED: Yes\* WHOLE BODY CONTACT USE RETAINED: Yes  
\* UAAs conducted in 2005-2007 with no recommendation presented to the Commission. WBC (B) remains.

WET TEST (Y OR N): Y FREQUENCY: ONCE/PERMIT CYCLE AEC: 100% METHOD: MULTIPLE

TABLE 5: EFFLUENT LIMITS

| PARAMETER                                  | UNITS         | DAILY<br>MAXIMUM | WEEKLY<br>AVERAGE | MONTHLY<br>AVERAGE | BASIS FOR<br>LIMIT (NOTE 2) | MONITORING<br>FREQUENCY |
|--|---------------|------------------|-------------------|--------------------|-----------------------------|-------------------------|
| FLOW                                       | MGD           | *                |                   | *                  | FSR                         | ONCE/MONTH              |
| BIOCHEMICAL OXYGEN DEMAND <sub>5</sub> *** | MG/L          |                  | 15                | 10                 | MDEL/WQBEL                  | ONCE/MONTH              |
| TOTAL SUSPENDED SOLIDS                     | MG/L          |                  | 20                | 15                 | MDEL/WQBEL                  | ONCE/MONTH              |
| pH   | SU            | 6.5–9.0          |                   | 6.5–9.0            | FSR                         | ONCE/MONTH              |
| OIL AND GREASE                             | MG/L          | 15               |                   | 10                 | FSR                         | ONCE/MONTH              |
| AMMONIA AS N (APR 1 – SEPT 30)             | MG/L          | 3.7              |                   | 1.4                | MDEL/WQBEL                  | ONCE/MONTH              |
| AMMONIA AS N (OCT 1 – MAR 31)              | MG/L          | 7.5              |                   | 2.9                | MDEL/WQBEL                  | ONCE/MONTH              |
| ESCHERICHIA COLIFORM (E. COLI)             | NOTE 1        | 126              |                   | 126                | FSR                         | ONCE/MONTH              |
| WET TEST                                   | %<br>SURVIVAL |                  |                   |                    | FSR                         |                         |

NOTE 1 – COLONIES/100 mL

NOTE 2 – WATER QUALITY-BASED EFFLUENT LIMITATION --WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT--MDEL; OR PREFERRED ALTERNATIVE EFFLUENT LIMIT--PEL; TECHNOLOGY-BASED EFFLUENT LIMIT--TBEL; OR NO DEGRADATION EFFLUENT LIMIT--NDEL; OR FSR -- FEDERAL/STATE REGULATION; OR N/A--NOT APPLICABLE. ALSO, PLEASE SEE THE GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.

\* - Monitoring requirements only.

\*\* - The Monthly Average for E. coli shall be reported as a Geometric Mean.

\*\*\*This facility is required to meet a removal efficiency of 85% or more for BOD<sub>5</sub> and TSS. Influent BOD<sub>5</sub> and TSS data should be reported to ensure removal efficiency requirements are met.

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## 9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

## 10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

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

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

Where C = downstream concentration  
C<sub>s</sub> = upstream concentration  
Q<sub>s</sub> = upstream flow  
C<sub>e</sub> = effluent concentration  
Q<sub>e</sub> = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration). Water quality-based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD<sub>5</sub> and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD<sub>5</sub> and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD<sub>5</sub> and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

### 10.1. OUTFALL #001 – MAIN FACILITY OUTFALL LIMIT DERIVATION

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to

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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<sub>5</sub>).** BOD<sub>5</sub> limits of 10 mg/L monthly average, 15 mg/L average weekly limits were proposed. This is a reduction in loading on Haldiman Branch and an overall reduction in loading by the City of Jamestown. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **Total Suspended Solids (TSS).** Applicant proposed water quality standard effluent limits of 15 mg/L monthly average, 20 mg/L average weekly. This is a reduction in loading on Haldiman Branch and an overall reduction in loading by the City of Jamestown. The influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **pH.** pH shall be maintained in the range from 6.5 to nine (6.5– 9.0) standard units [10 CSR 20-7.015 (8)(A)2.].
- **Total Ammonia Nitrogen.** The City of Jamestown has been monitoring ammonia during this previous permit cycle, with the majority of their samples being above water quality standards. The City elected to assume water quality based effluent limits would be minimally degrading. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

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

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

#### Summer

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

$$\text{Chronic WLA: } C_e = ((0.062 + 0.0)1.5 - (0.0 * 0.01)) / 0.062$$

$$C_e = 1.5 \text{ mg/L}$$

$$\text{Acute WLA: } C_e = ((0.062 + 0.0)12.1 - (0.0 * 0.01)) / 0.062$$

$$C_e = 12.1 \text{ mg/L}$$

$$LTA_c = 1.5 \text{ mg/L } (0.780) = 1.2 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile, 30 day avg.}]$$

$$LTA_a = 12.1 \text{ mg/L } (0.321) = 3.88 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 1.2 \text{ mg/L } (3.11) = 3.7 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 1.2 \text{ mg/L } (1.19) = 1.4 \text{ mg/L}$$

$$[CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

#### Winter

$$\text{Chronic WLA: } C_e = ((0.062 + 0.0)3.1 - (0.0 * 0.01)) / 0.062$$

$$C_e = 3.1 \text{ mg/L}$$

$$\text{Acute WLA: } C_e = ((0.062 + 0.0)12.1 - (0.0 * 0.01)) / 0.062$$

$$C_e = 12.1 \text{ mg/L}$$

$$LTA_c = 3.1 \text{ mg/L } (0.780) = 2.4 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile, 30 day avg.}]$$

$$LTA_a = 12.1 \text{ mg/L } (0.321) = 3.9 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 2.4 \text{ mg/L } (3.11) = 7.5 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 2.4 \text{ mg/L } (1.19) = 2.9 \text{ mg/L}$$

$$[CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30]$$

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| Season | Maximum Daily Limit (mg/l) | Average Monthly Limit (mg/l) |
|--------|----------------------------|------------------------------|
| Summer | 3.7                        | 1.4                          |
| Winter | 7.5                        | 2.9                          |

- **E. coli.** UAAs were conducted on the receiving stream; however there was no recommendation to the Clean Water Commission for removal of use and the whole body contact use remains on Haldiman Branch. Effluent limitations for losing stream are 126 colonies per 100 ml monthly average and 126 colonies per 100 ml daily maximum [10 CSR 20-7.015 (8)(A)4.] and [10 CSR 20-7.031(4)(C), Table A]. For facilities less than 100,000 gpd: Per the Clean Water Commission Directive in January 2011, the *E. Coli* sampling/monitoring frequency shall be set to match the monitoring frequency of other parameters in the permit with compliance to be determined by calculating the geometric mean of all samples collected during the reporting period (samples collected during the calendar month for the monthly average). Further, the limit may change depending on the outcome of future state effluent regulation revision. Please see **GENERAL ASSUMPTIONS OF THE WQAR #7**. Facility is planning to use ultraviolet disinfection to meet *E. coli* effluent limits.
- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow
  - ☒ Acute
  - ☒ No less than **ONCE/PERMIT CYCLE:**
  - ☒ Municipality or domestic facility with a design flow  $\geq 22,500$  gpd, but less than 1.0 MGD.


#### 11. ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION

The proposed new facility discharge, Jamestown WWTF, 0.040 MGD will result in minimal degradation of the segment identified in Haldiman Branch. A moving bed biological reactor (MBBR) with disinfection was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations. The cost effectiveness of the other technologies were evaluated, and an the MBBR was found to be cost effective and was determined to be the preferred alternative.

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

Reviewer: Leasue Meyers 

Date: 07/02/2012, 03/07/2013

Unit Chief: John Rustige, P.E. 

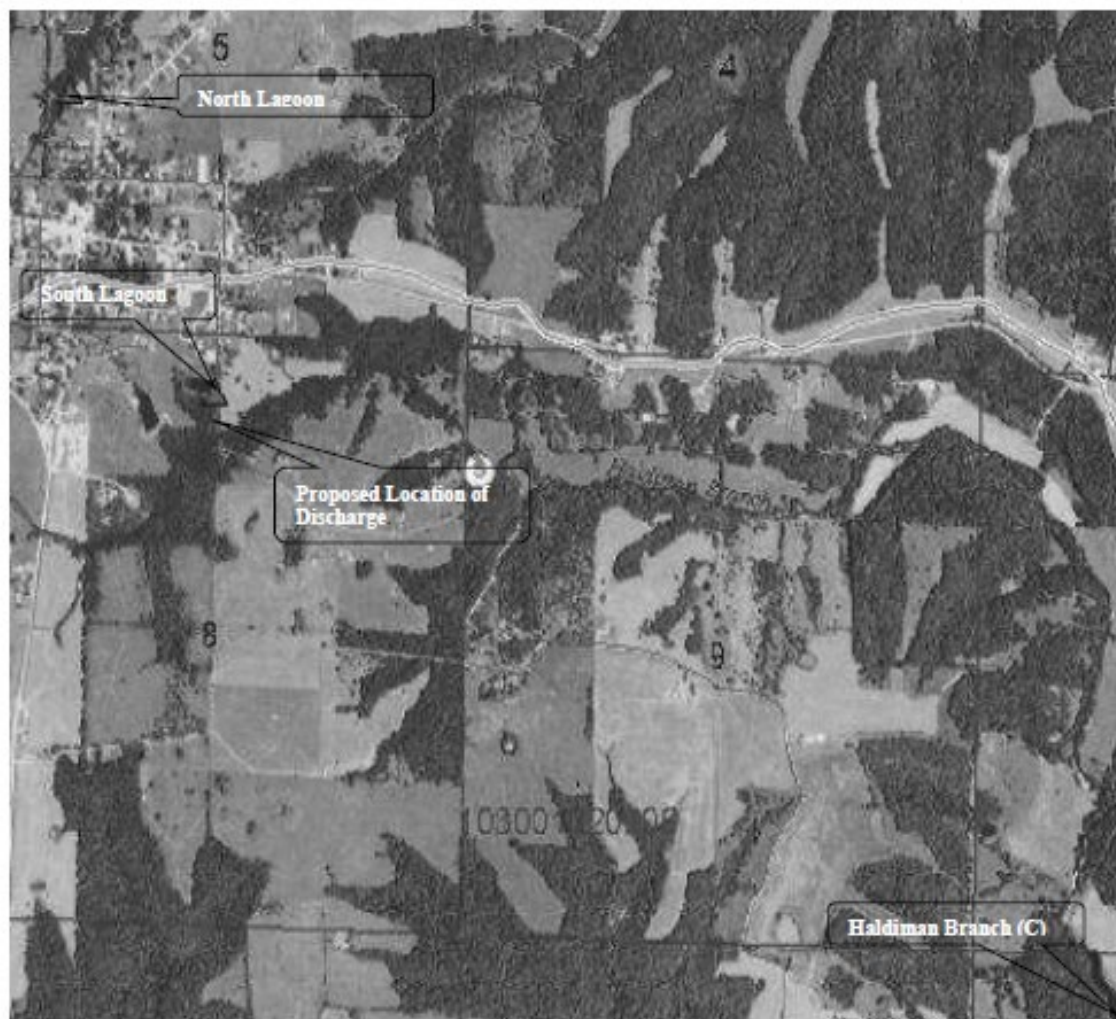


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Appendix A: Map of Discharge Location

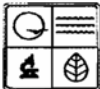


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## Appendix B: Antidegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, City of Jamestown:

- 1) Tier Determination and Effluent Limit Summary Sheet: Outfall location moved to losing stream segment and design flow increased to 40,000 gpd; however remains minimally degrading.



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
**ANTIDEGRADATION REVIEW SUMMARY**  
**TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY**

|   |  |   |             |
|---|--|---|-------------|
| <b>1. FACILITY</b>  |  |   |             |
| NAME<br>Jamestown Wastewater Treatment Facility   |  | TELEPHONE NUMBER WITH AREA CODE<br>(573) 849-2339 |             |
| ADDRESS (PHYSICAL)<br>103 East Row, PO Box 207  |  | CITY<br>Jamestown                                 | STATE<br>MO |
|   |  | ZIP CODE<br>65046                                 |             |
| <b>2. RECEIVING WATER BODY SEGMENT #1</b>   |  |   |             |
| NAME<br>Haldiman Branch   |  |   |             |
| 2.1 UPPER END OF SEGMENT (Location of discharge)<br>UTM _____ OR Lat _____ Long _____   |  |   |             |
| 2.2 LOWER END OF SEGMENT<br>UTM _____ OR Lat _____ Long _____   |  |   |             |
| Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."  |  |   |             |
| <b>3. WATER BODY SEGMENT #2 (IF APPLICABLE)</b>   |  |   |             |
| NAME  |  |   |             |
| 3.1 UPPER END OF SEGMENT<br>UTM _____ OR Lat _____ Long _____   |  |   |             |
| 3.2 LOWER END OF SEGMENT<br>UTM _____ OR Lat _____ Long _____   |  |   |             |
| <b>4. WATER BODY SEGMENT #3 (IF APPLICABLE)</b>   |  |   |             |
| NAME  |  |   |             |
| 4.1 UPPER END OF SEGMENT<br>UTM _____ OR Lat _____ Long _____   |  |   |             |
| 4.2 LOWER END OF SEGMENT<br>UTM _____ OR Lat _____ Long _____   |  |   |             |
| <b>5. PROJECT INFORMATION</b>   |  |   |             |
| Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |  |   |             |
| In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1.B.3., "any degradation of water quality is prohibited in these waters unless the discharge only results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied. |  |   |             |
| Will the proposed discharge of all pollutants of concern, or POCs, result in no net increase in the ambient water quality concentration of the receiving water after mixing?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |  |   |             |
| If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.  |  |   |             |
| Will the discharge result in temporary degradation?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |  |   |             |
| If yes, complete Attachment C.  |  |   |             |
| Has the project been determined as non-degrading?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |  |   |             |
| If yes, complete No Degradation Evaluation - Conclusion of Antidegradation Review form.   |  |   |             |
| Submit with the appropriate Construction Permit Application as no antidegradation review is required.   |  |   |             |
| If yes to one of the above questions, skip to Section 8 - Wet Weather.  |  |   |             |
| Please see the Engineering Report for details.  |  |   |             |

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#### 9. SUMMARY OF THE PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS

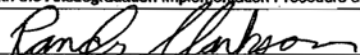
What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

| Pollutant of Concern | Units | Wasteload Allocation | Average Monthly Limit | Daily Maximum Limit |
|----------------------|-------|----------------------|-----------------------|---------------------|
| BOD5                 |       |                      |                       |                     |
| TSS                  |       |                      |                       |                     |
| Dissolved Oxygen     |       |                      |                       |                     |
| Ammonia              |       |                      |                       |                     |
| Bacteria (E. Coli)   |       |                      |                       |                     |
|                      |       |                      |                       |                     |
|                      |       |                      |                       |                     |
|                      |       |                      |                       |                     |
|                      |       |                      |                       |                     |
|                      |       |                      |                       |                     |

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

Attach the Antidegradation Review report and all supporting documentation.

**CONSULTANT:** I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulation.

SIGNATURE  DATE 6/26/12

NAME AND OFFICIAL TITLES  
Randy Clarkson, P.E., Project Manager

COMPANY NAME  
Bartlett & West, Inc.

ADDRESS 1719 Southridge Drive, Suite 100 CITY Jefferson City STATE MO ZIP CODE 65109

TELEPHONE NUMBER WITH AREA CODE (573) 634-3181 E-MAIL ADDRESS randy.clarkson@bartwest.com

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

SIGNATURE  DATE 6/2/12

NAME AND OFFICIAL TITLES  
Jon Imhoff, Mayor

ADDRESS 103 East Row, PO Box 207 CITY Jamestown STATE MO ZIP CODE 65046

TELEPHONE NUMBER WITH AREA CODE (573) 846-2399 E-MAIL ADDRESS jimhoff@shelterinsurance.com

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### Appendix C: Affordability Analysis of Chosen Alternative

Section 644.145 RSMo requires DNR to make a "finding of affordability" when "issuing permits under" or "enforcing provisions of" state or federal clean water laws "pertaining to any portion of a combined or separate sanitary sewer system or publicly-owned treatment works."

Jamestown has two lagoons currently, with a total of 176 connections. Jamestown is planning on constructing a new treatment plant to replace the existing lagoons. Establishment of a new treatment plant, which would result in closure of two existing lagoons located currently located in losing stream settings. Also upgrades for the facility to meet new ammonia and E. coli effluent limits.

1. *A community's financial capability and ability to raise or secure necessary funding*

The current user rate for 5,000 gallons is \$27.95 a month. Jamestown is planning on increasing rates, along with Rural Development grants, loans and a Community Development Block Grant to construct the new treatment plant and to perform work on the collection system. The Rural Development Grant is for \$1.02 million, the CDBG grant is for \$500,000 and a rural development loan is for \$780,000 for a total of \$2,300,000.

2. *Affordability of pollution control options for the individuals or households of the community*

|   |                                  |
|---|----------------------------------|
| Current user rate:  | <u>\$27.95 for 5,000 gallons</u> |
| Estimated capital cost of pollution control options:            | <u>\$2,338,824</u>               |
| Annual cost of additional (operating costs and debt service):   | <u>\$50,100</u>                  |
| Estimated resulting user rate:                                  | <u>\$51.00</u>                   |
| Median Household Income   | <u>\$30,480</u>                  |
| Usage Rates as a percent of Median Household Income (Rate/MHI): | <u>2.00%</u>                     |

| Check Appropriate Box               | Financial Impact | Residential Indicator (Usage Rate as a percent of Median Household Income) |
|-------------------------------------|------------------|--|
| <input type="checkbox"/>            | Low              | Less than 1% MHI   |
| <input checked="" type="checkbox"/> | Medium           | Between 1% and 2% MHI  |
| <input type="checkbox"/>            | High             | Greater than 2% MHI  |

3. *An evaluation of the overall costs and environmental benefits of the control technologies;*

The construction of the new treatment plant will close two existing single cell lagoons. The new treatment plant will provide better treatment and disinfection than currently received. The new treatment plant will not be located in a losing stream setting, such as the existing plants currently are. Along with the new treatment plant, the City of Jamestown is planning on doing some work in their collection system to reduce some of the inflow and infiltration currently received and to connect houses currently on onsite systems. Other benefits will be the closure of two lagoons in town, which also will be an environmental and safety benefit.

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

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations; and

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- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained;

Table 1: Potentially Distressed Populations

|  |          |
|--|----------|
| Unemployment <sup>1</sup> for [Moniteau Co.]                   | 8.2%     |
| Median Household Income <sup>2</sup> [Jamestown, Moniteau Co.] | \$30,480 |
| Percent Population Growth/Decline <sup>3</sup> (1990-2010)     | +1.0%    |
| Percent of Households in Poverty <sup>4</sup>                  | 10.5%    |

The new treatment plant, disinfection, and implementation of ammonia effluent limits is being required. Opportunities for cost savings or cost avoidance are not available. The new treatment plant is being undertaken by the City as a result of upcoming permit requirements at permit renewal for the losing stream effluent limits, addition of disinfection and meeting of ammonia effluent limits.

5. *An assessment of other community investments relating to environmental improvements;*  
Besides the new treatment plant, the City of Jamestown will be connecting currently unsewered areas to the new plant, which is an environmental benefit. Other benefits will be the closure of two lagoons in town, which also will be an environmental and safety benefit.
6. *An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards; See Section (2) of this analysis for the residential indicator as outlined in the above-referenced EPA guidance.*

<sup>1</sup> Unemployment data from Missouri Department of Economic Development (February 2012) – <http://www.missourieconomy.org/pdfs/urel1202.pdf>

<sup>2</sup> Median Household Income data from American Community Survey – Median income in the past 12 months – <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

<sup>3</sup> 2010 Census Population Data - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>  
2000 Census Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls>  
1990 Census Population Data – <http://www.census.gov/prod/cen1990/cpl/cp-1-27.pdf>

<sup>4</sup> Poverty data – American Community Survey - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

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Table 2: Socioeconomic, Debt and Financial Indicators

| Indicators   | Strong<br>(3 points)             | Mid-Range<br>(2 points)          | Weak<br>(1 point)                    | Score           |
|--|----------------------------------|----------------------------------|--------------------------------------|-----------------|
| Bond rating indicator                                      | Above BBB or Baa                 | BBB or Baa                       | Below BBB or Baa                     | NA <sup>5</sup> |
| Overall net debt as a % of full market property value      | Below 2%                         | 2% - 5%                          | Above 5%                             | NA <sup>5</sup> |
| Unemployment Rate (8.2%)                                   | >1% below Missouri average       | ± 1% of Missouri average (8.4%)  | >1% above Missouri average           | 2               |
| Median household income (\$30,480)                         | More than 25% above Missouri MHI | ± 25% of Missouri MHI (\$46,262) | More than 25% below Missouri average | 1               |
| Property tax revenues as a % of full market property value | Below 2%                         | 2% - 4%                          | Above 4%                             | NA <sup>5</sup> |
| Property tax collection rate                               | Above 98%                        | 94% - 98%                        | Below 94%                            | NA <sup>5</sup> |

Average Score for Financial Capability Matrix: 1.5  
Residential Indicator (from Criteria #2 above): Medium

Table 3: Financial Capability Matrix

| Financial Capability Indicators Score from above ↓ | Residential Indicator (User rate as a % of MHI) |                                      |                      |
|--|---|--------------------------------------|----------------------|
|  | Low<br>(Below 1%)                               | Mid-Range<br>(Between 1.0% and 2.0%) | High<br>(Above 2.0%) |
| Weak (below 1.5)                                   | Medium Burden                                   | High Burden                          | High Burden          |
| Mid-Range (1.5 – 2.5)                              | Low Burden                                      | Medium Burden                        | High Burden          |
| Strong (above 2.5)                                 | Low Burden                                      | Low Burden                           | Medium Burden        |

Estimated Financial Burden: Medium

7. *An assessment of any other relevant local community economic condition.*

Jamestown is a small community located in Moniteau County. The community's population is 384, which represents a 1% growth rate. The community has an unemployment rate that reflects the average unemployment for the state at over 8%. Jamestown's median household income is more than \$16,000 less than the state's median household income, with over 10% of the population living below the poverty line.

**Affordability Conclusion and Finding**

As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in a medium burden with regard to the community's overall financial capability and a medium financial impact for most individual customers/households .

<sup>5</sup> Information on Jamestown's bond rating, overall net debt, property tax revenues and property tax collection rate information was not found on the internet or in the information provided in the facility plan. If during the Construction permitting process , additional information is provided, Table 6 will be reevaluated.





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.



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

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

## Section C – Bypass/Upset Requirements

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

## Section D – Administrative Requirements

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





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



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



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

**1. Definitions**

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

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

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

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

**2. Identification of Industrial Discharges**

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

**3. Application Information**

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

**4. Notice to the Department**

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

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

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

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

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**August 1, 2019**

**PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES**

**SECTION A – GENERAL REQUIREMENTS**

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

## **SECTION B – DEFINITIONS**

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food, feed or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR Part 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with 40 CFR Part 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limited to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
14. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

## **SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES**

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

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

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

## **SECTION E – INCINERATION OF SLUDGE**

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or, if the ash is determined to be hazardous, with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

## **SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS**

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or sludge must be removed to maintain adequate storage capacity in the facility.
  - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
  - b. Permittee shall close the lagoon in accordance with Section I.

## **SECTION G – LAND APPLICATION OF BIOSOLIDS**

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

**TABLE 1**

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

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

**TABLE 2**

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

- e. Annual pollutant loading rate.

**Table 3**

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

- f. Cumulative pollutant loading rates.

**Table 4**

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

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
- Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
  - Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
  - The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

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

- i. PAN can be determined as follows:  
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor<sup>1</sup>).  
<sup>1</sup> Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis.
- ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.
- iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.
- d. Buffer zones are as follows:
  - i. 300 feet of a water supply well, sinkhole, water supply reservoir or water supply intake in a stream;
  - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
  - iii. 150 feet of dwellings or public use areas;
  - iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);
  - v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.
  - vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.
- e. Slope limitation for application sites are as follows:
  - i. For slopes less than or equal to 6 percent, no rate limitation;
  - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;
  - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
  - iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.
- f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:
  - i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
  - ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
  - iii. Other best management practices approved by the Department.



## SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

## SECTION I– CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all sludges and/or biosolids. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6.010 and 10 CSR 20 – 6.015.
3. Biosolids or sludge that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
  - a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
  - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
  - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre. Alternative, site-specific application rates may be included in the closure plan for department consideration.
    - i. PAN can be determined as follows:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$
<sup>1</sup> Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis.
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are “similar treatment works” under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:
  - a. Testing for metals or fecal coliform is not required.
  - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
  - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain  $\geq 70\%$  vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200.
7. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
  - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain  $\geq 70\%$  vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

- surface water drainage without creating erosion.
- b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.
  - c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill, reclamation, or other beneficial use. Other solid wastes must be removed.
8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR Part 503, Subpart C.

## SECTION J – MONITORING FREQUENCY

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

**TABLE 5**

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

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

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

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit.
4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

## SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

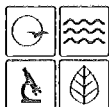
1. The permittee shall maintain records on file at the facility for at least five years for the items listed in Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper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

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

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

5. Annual report contents. The annual report shall include the following:
  - a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
  - b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
  - c. Gallons and % solids data used to calculate the dry ton amounts.
  - d. Description of any unusual operating conditions.
  - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
    - i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
    - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
  - f. Contract Hauler Activities:

If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
  - g. Land Application Sites:
    - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
    - ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
    - iii. Report the method used for compliance with pathogen and vector attraction requirements.
    - iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
**FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY**

RECEIVED

OCT 29 2019

33909

| FOR AGENCY USE ONLY            |               |
|--------------------------------|---------------|
| CHECK NUMBER                   |               |
| DATE RECEIVED                  | FEE SUBMITTED |
| 10-29-19                       |               |
| JETDAY CONCERNATIONSHIP LEADER |               |

**READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM**

**1. THIS APPLICATION IS FOR:**

- ☐ An operating permit for a new or unpermitted facility. Construction Permit # \_\_\_\_\_  
(Include completed antidegradation review or request for antidegradation review, see instructions)
- ☒ A new site-specific operating permit formerly general permit #MOG 0658203
- ☐ A site-specific operating permit renewal: Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_
- ☐ A site-specific operating permit modification: Permit #MO- \_\_\_\_\_ Reason: \_\_\_\_\_
- ☐ General permit (NON-POTWs) (MOGD -discharging < 50,000 GPD or MOG823 - Land Application of Domestic Wastewater):  
Permit #MO- \_\_\_\_\_ Expiration Date \_\_\_\_\_

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

**2. FACILITY**

|                    |                |       |          |                                 |
|--------------------|----------------|-------|----------|---------------------------------|
| NAME               | Jamestown WWTP |       |          | TELEPHONE NUMBER WITH AREA CODE |
| ADDRESS (PHYSICAL) | CITY           | STATE | ZIP CODE |                                 |
| 226 School Rd      | Jamestown      | MO    | 65046    |                                 |

2.1 Legal description NE 1/4 Sec. 8, T46N, R14W County Moniteau

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: Haldiman Branch

2.4 Number of outfalls: 1 Wastewater outfalls: 1 Stormwater outfalls: \_\_\_\_\_ Instream monitoring sites: \_\_\_\_\_

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

|                   |                              |                                 |
|-------------------|------------------------------|---------------------------------|
| NAME              | EMAIL ADDRESS                | TELEPHONE NUMBER WITH AREA CODE |
| <u>Larry Bost</u> | <u>City of Jamestown, MO</u> | <u>573-338-1748</u>             |
| ADDRESS           | CITY                         | STATE ZIP CODE                  |
| <u>PO Box 207</u> | <u>JAMESTOWN</u>             | <u>MO 65046</u>                 |

3.1 Request review of draft permit prior to public notice? ☒ YES ☐ NO

3.2 Are you a publicly owned treatment works? ☒ YES ☐ NO

If yes, please attach the Financial Questionnaire.

See: <https://dnr.mo.gov/forms/780-2511-f.pdf>

3.3 Are you a privately owned treatment works? ☐ YES ☒ NO

3.4 Are you a privately owned treatment facility regulated by the Public Service Commission? ☐ YES ☒ NO

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

|                   |                              |                                 |
|-------------------|------------------------------|---------------------------------|
| NAME              | EMAIL ADDRESS                | TELEPHONE NUMBER WITH AREA CODE |
| <u>Larry Bost</u> | <u>City of Jamestown, MO</u> | <u>573-338-1748</u>             |
| ADDRESS           | CITY                         | STATE ZIP CODE                  |
| <u>PO Box 207</u> | <u>JAMESTOWN</u>             | <u>MO 65046</u>                 |

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**

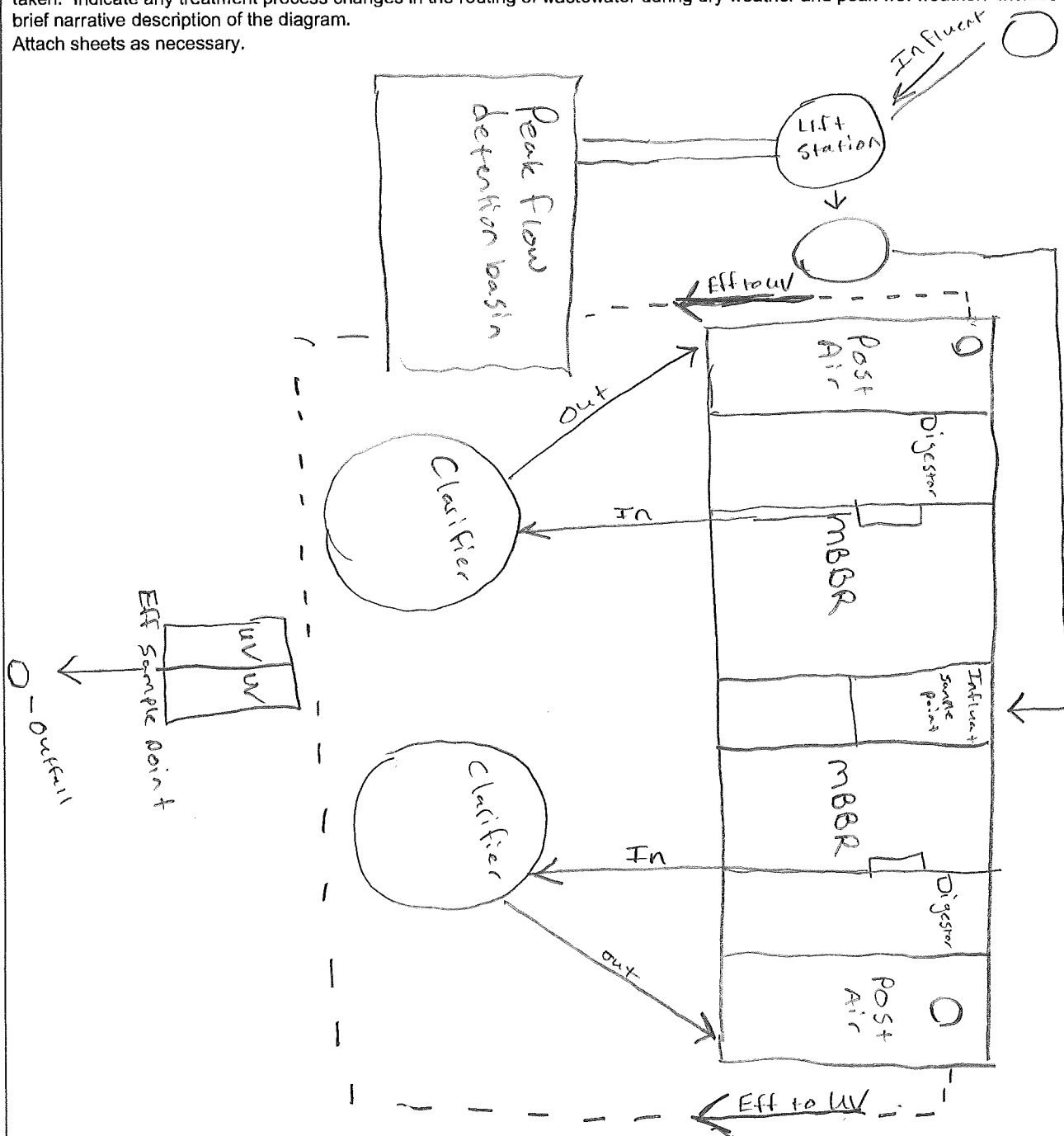
|                                   |                                 |                    |
|-----------------------------------|---------------------------------|--------------------|
| NAME                              | TITLE                           | CERTIFICATE NUMBER |
| <u>Derek McCubbin</u>             | <u>Chief operator</u>           | <u>12418</u>       |
| EMAIL ADDRESS                     | TELEPHONE NUMBER WITH AREA CODE |                    |
| <u>derek.k.mccubbin@gmail.com</u> | <u>573-286-2727</u>             |                    |

**6. FACILITY CONTACT**

|                                   |                       |                                 |
|-----------------------------------|-----------------------|---------------------------------|
| NAME                              | TITLE                 | TELEPHONE NUMBER WITH AREA CODE |
| <u>Derek McCubbin</u>             | <u>Chief Operator</u> | <u>573-286-2727</u>             |
| EMAIL ADDRESS                     | STATE ZIP CODE        |                                 |
| <u>derek.k.mccubbin@gmail.com</u> | <u>MO 65048</u>       |                                 |
| ADDRESS                           | CITY                  |                                 |
| <u>31379 Mockingbird Rd</u>       | <u>California</u>     |                                 |

## 7. DESCRIPTION OF FACILITY

**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.



**7.2** Attach an aerial photograph or USGS topographic map showing the location of the facility and outfall.

Please see the following website:

<https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce>

| 8. ADDITIONAL FACILITY INFORMATION   |  |                                  |
|--|--|----------------------------------|
| 8.1  | Facility SIC code: <u>4952</u> Discharge SIC code: <u>4952</u>   | Design P.E. <u>526</u>           |
| 8.2  | Number of people presently connected or population equivalent (P.E.)   |                                  |
| 8.3  | Connections to the facility:<br>Number of units presently connected:<br>Residential: <u>156</u> Commercial: <u>12</u> Industrial: <u>4</u>   |                                  |
| 8.4  | Design flow: <u>40000 GPD</u>  | Actual flow: <u>33700 GPD</u>    |
| 8.5  | Will discharge be continuous through the year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Discharge will occur during the following months: <u>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</u><br>How many days of the week will discharge occur? <u>7</u> |                                  |
| 8.6  | Is industrial wastewater discharged to the facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, attach a list of the industries that discharge to your facility  |                                  |
| 8.7  | Does the facility accept or process leachate from landfills? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |                                  |
| 8.8  | Is wastewater land applied? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, attach Form I. See: <a href="https://dnr.mo.gov/forms/780-1686-f.pdf">https://dnr.mo.gov/forms/780-1686-f.pdf</a>   |                                  |
| 8.9  | Does the facility discharge to a losing stream or sinkhole? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |                                  |
| 8.10   | Has a wasteload allocation study been completed for this facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |                                  |
| 9. LABORATORY CONTROL INFORMATION  |  |                                  |
| LABORATORY WORK CONDUCTED BY PLANT PERSONNEL   |  |                                  |
| Lab work conducted outside of plant. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>  |  |                                  |
| Push-button or visual methods for simple test such as pH, settleable solids. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>  |  |                                  |
| Additional procedures such as dissolved oxygen, chemical oxygen demand, biological oxygen demand, titrations, solids, volatile content. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>   |  |                                  |
| More advanced determinations such as BOD seeding procedures, fecal coliform/E. coli, nutrients (including Ammonia), Oil & Grease, \ total oils, phenols, etc. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>   |  |                                  |
| Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph. <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>  |  |                                  |
| 10. COLLECTION SYSTEM  |  |                                  |
| 10.1 Are there any municipal satellite collection systems connected to this facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If yes, please list all connected to this facility, contact phone number and length of each collection system   |  |                                  |
| FACILITY NAME  | CONTACT PHONE NUMBER   | LENGTH OF SYSTEM (FEET OR MILES) |
|  |  |                                  |
|  |  |                                  |
|  |  |                                  |
|  |  |                                  |
| 10.2 Length of pipe in the sewer collection system? (If available, include totals from satellite collection systems)<br><u>20000</u> Feet, or _____ Miles (either unit is appropriate)   |  |                                  |
| 10.3 Does significant infiltration occur in the collection system? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:<br><u>Smoke testing was conducted. Issues with clean out caps were corrected.</u> |  |                                  |

**11. BYPASSING**Does any bypassing occur in the collection system or at the treatment facility? ☒ Yes ☐ NoIf yes, explain: Peak Flow rates, and mechanical pump failures have caused the peak flow detention basin to overflow**12. SLUDGE HANDLING, USE AND DISPOSAL****12.1** Is the sludge a hazardous waste as defined by 10 CSR 25? ☐ Yes ☒ No**12.2** Sludge production, including sludge received from others: 9 Design dry tons/year \_\_\_\_\_ Actual dry tons/year**12.3** Capacity of sludge holding structures:Sludge storage provided: 760 cubic feet; \_\_\_\_\_ days of storage; \_\_\_\_\_ average percent solids of sludge;☐ No sludge storage is provided. ☐ Sludge is stored in lagoon.**12.4** Type of Storage: ☒ Holding tank ☐ Building  
☐ Basin ☐ Lagoon  
☐ Concrete Pad ☐ Other (Describe) \_\_\_\_\_**12.5** Sludge Treatment:  
☐ Anaerobic Digester ☐ Lagoon ☐ Composting  
☐ Storage Tank ☒ Aerobic Digester ☐ Other (Attach description)  
☐ Lime Stabilization ☐ Air or Heat Drying**12.6** Sludge Use or Disposal:☐ Land Application ☐ Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)  
☒ Contract Hauler ☐ Hauled to Another treatment facility  
☐ Incineration ☐ Sludge Retained in Wastewater treatment lagoon  
☐ Solid waste landfill**12.7** Person responsible for hauling sludge to disposal facility:☐ By applicant ☒ By others (complete below)

|   |  |   |                          |
|---|--|---|--------------------------|
| NAME<br><u>Allclear Pumping &amp; Sewer</u> |  | EMAIL ADDRESS<br><u>shawna@allclearmo.com</u> |                          |
| ADDRESS<br><u>P.O. Box 823</u>              | CITY<br><u>Jefferson City</u>                          | STATE<br><u>MO</u>                            | ZIP CODE<br><u>65201</u> |
| CONTACT PERSON<br><u>Shawn</u>              | TELEPHONE NUMBER WITH AREA CODE<br><u>573-443-2660</u> | PERMIT NO.<br>MO-                             |                          |

**12.8** Sludge use or disposal facility☐ By applicant ☐ By others (Complete below.)

|   |  |   |                          |
|---|--|---|--------------------------|
| NAME<br><u>Allclear Pumping &amp; Sewer</u> |  | EMAIL ADDRESS<br><u>shawna@allclearmo.com</u> |                          |
| ADDRESS<br><u>P.O. Box 823</u>              | CITY<br><u>Jefferson City</u>                          | STATE<br><u>MO</u>                            | ZIP CODE<br><u>65201</u> |
| CONTACT PERSON<br><u>Shawn</u>              | TELEPHONE NUMBER WITH AREA CODE<br><u>573-443-2660</u> | PERMIT NO.<br>MO-                             |                          |

**12.9** Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?☒ Yes ☐ No (Explain)

**13. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM**

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please complete the eDMR Registration by clicking on the following link: <https://dnr.mo.gov/forms/780-2204-f.pdf>.

- ☒ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.
- ☐ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.
- ☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

**14. JETPAY**

Permit fees may be paid online by credit card or eCheck through a system called JetPay. Use the URL provided to access JetPay and make an online payment.

New Site Specific Permit: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/>

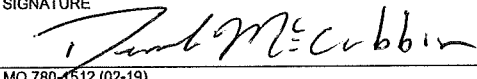
Construction Permits: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/>

Modification Fee: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/>

New General Domestic WW: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/772/>

**15. CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

|  |                |                                 |
|--|----------------|---------------------------------|
| NAME (TYPE OR PRINT)   | OFFICIAL TITLE | TELEPHONE NUMBER WITH AREA CODE |
| McCubbin, Derek  | WWTP Operator  | 573-286-2727                    |
| SIGNATURE  |                | DATE SIGNED                     |
|  |                | 10-21-2019                      |



**INSTRUCTIONS FOR COMPLETING FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES  
THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW  
LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY  
(Facilities over 100,000 gallons per day of domestic waste must use FORM B2)  
(Facilities that receive wastes other than domestic contact the department)**

1. Check the appropriate box. **Do not check more than one item.** Operating permit refers to a permit 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](http://dnr.mo.gov/forms/780-1893-f.pdf).
- 1.1 **Fees Information:**

**DOMESTIC OPERATING PERMIT FEES – PRIVATE**

Annual operating permit fees are based on flow.

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

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

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

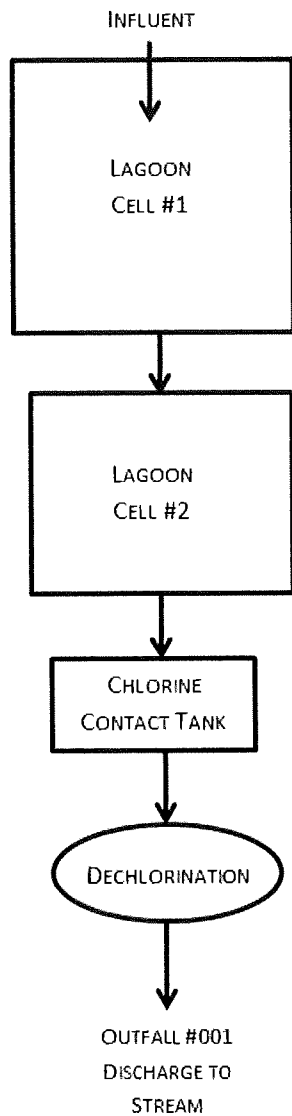
**PUBLIC SEWER SYSTEM OPERATING PERMIT FEES** (city, public sewer district, public water district, or other publicly owned treatment works). Annual fee is based on number of service connections. Fees listings are found in 10 CSR 20-6.011 which is available at <http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf>.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

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

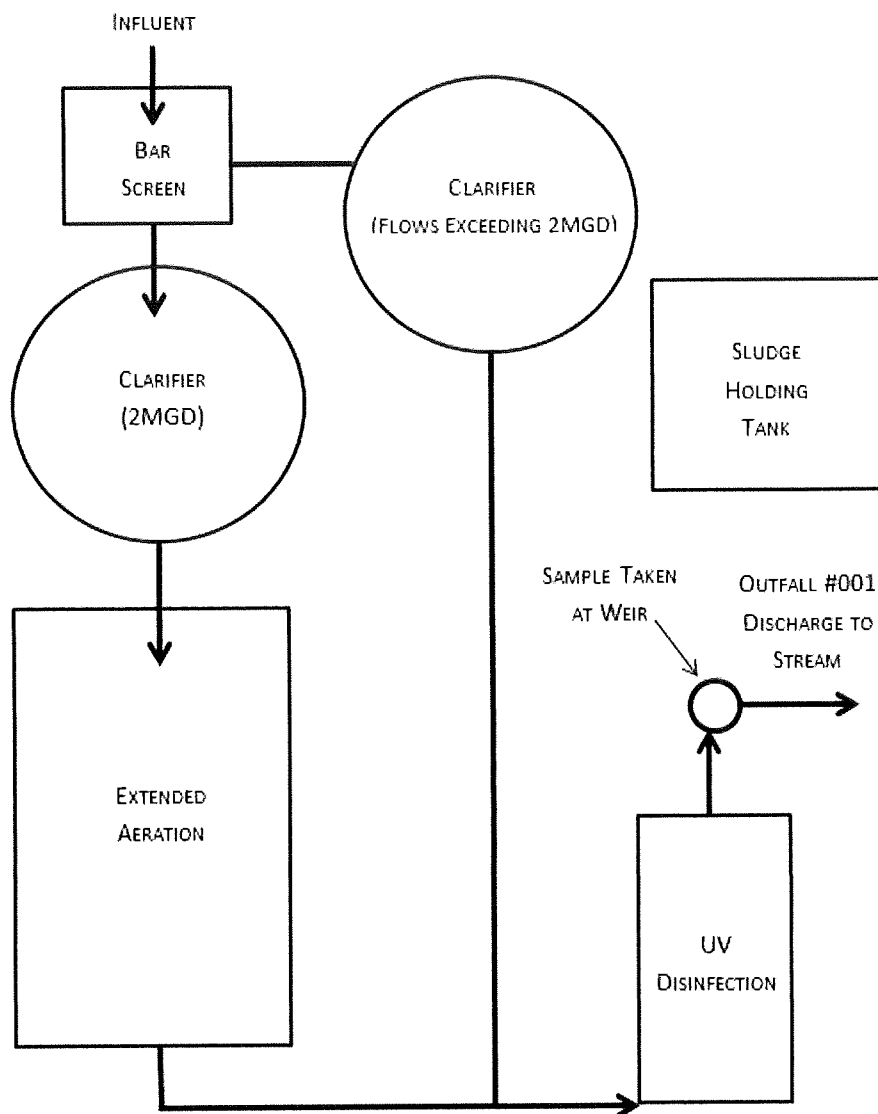
  - a. Publicly Owned Treatment Works (POTWs) - \$200 each.
  - b. Non-POTWs – \$100 each for a minor modification (name changes, address changes, other non-substantive changes) or a fee equal to 25% of the facility's annual operating fee for a major modification.
2. Name of Facility – Include the name 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 at the outfall pipe 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 <https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce>.
- 2.3-2.4 Self-explanatory
3. Owner – Provide the legal name, mailing address, phone number, and email address of the owner. The owner identified in this section and subsequently reflected on the certificate page of the operating permit, is the owner of the regulated activity/discharge being applied for and is not necessarily the owner of the real property on which the activity or discharge is occurring.
- Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 10 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. The Financial Questionnaire is available at: <https://dnr.mo.gov/forms/780-2511-f.pdf>
4. Continuing Authority - A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit <https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf>. If the continuing authority is not an individual(s), government, or otherwise required to register with the Missouri Secretary of State (SoS), then the business name must be listed exactly as it appears on the SoS's webpage: <https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0>
5. Operator – Provide the name, certificate number, title, mailing address, primary phone number, and e-mail address of the operator of the facility.
6. Provide the name, title, mailing address, primary phone number, and e-mail address of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department.

## 7.1 Process Flow Diagram Examples

### WASTEWATER TREATMENT LAGOON



### WASTEWATER TREATMENT FACILITY



- 7.2 A topographic map is available on the Web at <https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce> or from the Department of Natural Resources' Geological Survey Division in Rolla at 573-368-2125.
- 8.1 For Standard Industrial Codes visit [www.osha.gov/pls/imis/sicsearch.html](http://www.osha.gov/pls/imis/sicsearch.html) or contact the Department of Natural Resources' Water Protection Program. For example, a family style restaurant has a Facility SIC code of 5812.
- 8.2-8.7 Self-explanatory.
- 8.8 If wastewater is land applied submit for Form I: [www.dnr.mo.gov/forms/780-1686-f.pdf](http://www.dnr.mo.gov/forms/780-1686-f.pdf).
- 8.9-8.10 Self-explanatory

**INSTRUCTIONS FOR COMPLETING FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES  
THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW  
LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY (continued)**

9. Self-explanatory.
- 10.1 Self-explanatory.
- 10.2 Self-explanatory.
- 10.3 If Inflow and Infiltration (I&I) is a problem at the facility, list possible actions to be taken to repair the collection and treatment facility.
11. Include overflows of combined sewers and lift stations or bypassing of the wastewater treatment facility. Provide a detailed description of the circumstances that sewage bypassing occurs and the frequency of occurrence.
12. A copy of 10 CSR 25 is available on the Web at [www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25](http://www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25).
- 12.1-12.8 Self-explanatory.
- 12.9 Refer to University of Missouri Extension Environmental Quality publications about biosolids (WQ420-WQ426). The documents are available at [extension.missouri.edu/main/DisplayCategory.aspx?C=74](http://extension.missouri.edu/main/DisplayCategory.aspx?C=74). In addition, the federal sludge regulations are available through the U.S. Government Printing Office at <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>.
13. Electronic Discharge Monitoring Report (eDMR) Submission System – Visit the eDMR site at <https://dnr.mo.gov/env/wpp/edmr.htm> and click on the "Facility Participation Package" link. The eDMR Permit Holder and Certifier Registration Form and information about the eDMR system can be found in the Facility Participation Package. Waivers to electronic reporting may be granted by the Department per 40 CFR 127.15 under certain, special circumstances. A written request must be submitted to the Department for approval. Waivers may be granted to facilities owned or operated by:
- a. members of religious communities that choose not to use certain technologies or
  - b. permittees located in areas with limited broadband access. The National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC) have created a broadband internet availability map: <https://broadbandmap.fcc.gov/#/>. Please contact the Department if you need assistance.
14. **JETPAY**  
Applicants can pay fees online by credit card or eCheck through a system called JetPay.
- a. Per Section 37.001, RSMo, a transaction fee will be included. The transaction fee is paid to the third party vendor JetPay, not the Department of Natural Resources.
  - b. Be sure to select the correct fee type and corresponding URL to ensure your payment is applied appropriately. If you are unsure what type of fee to pay, please contact the Water Protection Program's Budget, Fees, and Grants Management Unit by phone at (573) 522-1485 for assistance.
  - c. Upon successful completion of your payment, JetPay provides a payment confirmation. Submit this form with a copy of the payment confirmation if requesting a new permit or a permit modification. For permit renewals of active permits, the Department will invoice fees annually in a separate request.
  - d. If you are unable to make your payment online, but want to pay with credit card, you may email your name, phone number, and invoice number, if applicable, to [WPPFees@dnr.mo.gov](mailto:WPPFees@dnr.mo.gov). The Budget, Fees, and Grants Management Unit will contact you to assist with the credit card payment. **Please do not include your credit card information in the email.**
  - e. Applicants can find fee rates in 10 CSR 20-6.011 (<https://dnr.mo.gov/pubs/pub2564.htm>).
15. **CERTIFICATION**  
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.

**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

Map of regional offices with addresses and phone numbers are available on the Web at <https://dnr.mo.gov/regions/>. If there are any questions concerning this form, contact the appropriate regional office or the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-522-4502.

Google Maps Jamestown WWTP 226 school rd Jamestown MO 65046



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- Mazingo Lake Recreation Park Liberty Road, Maryville, ...
- 1700 East 1st Street Maryville, MO

Home  
California, MO

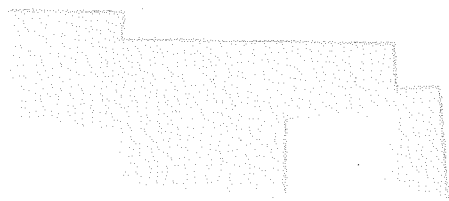
Work  
Set location

Light traffic in this area  
No delays nearby >

Search this area 61°

- Restaurants
- Hotels
- Bars
- Coffee
- More

IS TOCHS  
100



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Source: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri 10/21/2019, 1:53:54 PM 1:54:02 PM CDT



MISSOURI  
DEPARTMENT OF  
NATURAL RESOURCES

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