Exhibit No.:	
Issues:	Eureka Acquisition
Witness:	Brian W. Eisenloeffel
Exhibit Type:	Direct
Sponsoring Party:	Missouri-American Water Company
Case No.:	WA-2021-0376
Date:	November 5, 2021

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WA-2021-0376

DIRECT TESTIMONY

OF

BRIAN W. EISENLOEFFEL

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

AFFIDAVIT

I, Brian Eisenloeffel, under penalty of perjury, and pursuant to Section 509.030, RSMo, state that I am Director of Operations for Missouri-American Water Company, that the accompanying testimony has been prepared by me or under my direction and supervision; that if inquiries were made as to the facts in said testimony, I would respond as therein set forth; and that the aforesaid testimony is true and correct to the best of my knowledge and belief.

Brian Eisenloeffel

November 5, 2021
Dated

DIRECT TESTIMONY
BRIAN W. EISENLOEFFEL
MISSOURI AMERICAN WATER COMPANY
CASE NO.: WA-2021-0376

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DIRECT TESTIMONY

BRIAN W. EISENLOEFFEL

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Brian W. Eisenloeffel, and my business address is 727 Craig Rd, St. Louis, MO 63141.

Q. By whom are you employed and in what capacity?

A. I am employed by Missouri-American Water Company ("MAWC", "Missouri-American" or the "Company") as the Senior Director of Operations for our St. Louis region.

Q. Please summarize your educational background and business experience.

A. I received my Bachelor of Science in Civil Engineering from the University of Texas at San Antonio. I have been employed at MAWC for 19 years. I began as an engineer working on improvement projects throughout the state of Missouri. After that I became a supervisor in our St. Louis operation at our production plants. I have had various responsibilities as manager of our water main replacement program, manager of our St. Louis transmission and distribution maintenance, and then as the manager of field operations for our East Central Division.

Q. What are your current employment responsibilities?

A. I am currently responsible for all field operations in the St. Louis area for Missouri American Water. I oversee the St. Louis County water system and the Arnold wastewater system as well as several small wastewater systems in St. Louis and Jefferson County.

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my Direct Testimony is to support MAWC's Application for certificates of

convenience and necessity associated with the acquisition of the water and wastewater assets of the City of Eureka.

II. EUREKA SYSTEM

Q. How does MAWC plan to provide service to the Eureka area?

A. MAWC proposes to purchase substantially all of the water and wastewater assets of the currently unregulated systems of the City of Eureka, Missouri ("Eureka").

Q. Has MAWC agreed to a Purchase Agreement with Eureka?

A. Yes. On November 17, 2020, MAWC entered into a Purchase Agreement with Eureka. A copy of the Purchase Agreement is attached as **Schedule BWE-1**.

Q. Please generally describe the Eureka water system.

A. The City of Eureka water system serves approximately 4,100 water customers. The water system includes six (6) wells, eight (8) booster pump stations, seven (7) storage tanks, and the water distribution system. The water distribution system includes approximately 58.8 miles of water main ranging in size from 2-inch to 12-inch, 642 fire hydrants, and associated valves and fittings.

Q. Please generally describe the Eureka wastewater system.

A. The City of Eureka wastewater system serves approximately 4,100 wastewater customers. The wastewater treatment plant is a three-cell aerated lagoon plant with a design flow of 2.8 million gallons per day, according to the Missouri Department of Natural Resources (MDNR) Operating Permit. The permit is attached as **Schedule BWE-2**. The wastewater collection system includes ten (10) sewer lift stations, approximately 62.5 miles of sewer main ranging in size from 4-inch to 48-inch, and 1,452 manholes.

Q. What MDNR compliance issues exist with regard to the Eureka system?

A. The wastewater plant is not currently meeting effluent limit parameters. Specifically, removal efficiency related to biochemical oxygen demand (BOD). The current operating permit for the wastewater plant attached as **Schedule BWE-2** includes new ammonia limits that will go into effect October 1, 2022. As a condition of this permit Eureka has entered a Schedule of Compliance (SOC). The permit outlines conditions and timeline for new treatment to attain compliance prior to the expiration. The timeline by the MDNR in the permit suggests that improvements should already be under construction. Eureka has not begun the multi-year process to design, permit and construct any plant modifications to meet new ammonia limits with less than a year left on their permit. MAWC witness Jeffery Kaiser addresses MAWC plans for the wastewater plant.

Q. Does MAWC plan any investments in regard to the Eureka water and wastewater systems?

A. Yes. Those will be addressed by MAWC witness Jeffrey Kaiser.

III. MAWC QUALIFICATIONS

Q. Please describe MAWC.

A. MAWC is a Missouri corporation, active and in good standing with the Missouri Secretary of State, with its principal office and place of business at 727 Craig Road, St. Louis, Missouri 63141.

Q. Does MAWC currently provide water and/or sewer service in Missouri?

A. Yes. MAWC currently provides water service to approximately 470,000 customers and sewer service to approximately 15,000 customers in the State of Missouri. MAWC is a "water corporation," a "sewer corporation" and a "public utility" as those terms are defined in Section 386.020 and is subject to the jurisdiction and supervision of the Commission.

Q. Do you have any examples of the quality of service provided by MAWC?

A. In 2020, MAWC was ranked the second highest in the Midwest for customer service among water utilities by J. D. Power. MAWC's parent, American Water Works Company, consistently ranks in the top quartile of independent customer service surveys when compared to other utilities. Our four St. Louis water plants have participated in the Partnership for Safe Water for 18 years or longer. This program is sponsored by the American Water Works Association (AWWA) and the United States Environmental Protection Agency (EPA) as well as other organizations to recognize commitment to superior water quality. Less than 2% of surface water systems participate in the Partnership program.

IV. CERTIFICATE OF CONVENIENCE AND NECESSITY ("CCN")

Q. For what area does MAWC seek CCNs in this case?

A. A map of the area sought to be certificated is attached as **Schedule BWE-3**. A copy of the description of the area is attached as **Schedule BWE-4**. By this description, MAWC intends to cover the city limits of Eureka (within St. Louis County) and any customers currently provided service by Eureka. MAWC will receive a franchise from Eureka as called for by the Purchase Agreement.

Q. Has MAWC performed a feasibility study associated with the Eureka systems?

A. Yes. Attached hereto are **Schedule BWE-5_C**, a feasibility study for the Eureka water system, and **Schedule BWE-6_C**, a feasibility study for the Eureka sewer system. No external financing is anticipated. **Schedule BWE-5_C** and **Schedule BWE-6_C** have been identified as "Confidential" in accordance with Commission Rule 20 CSR 4240-2.135(2)(A)(3) and (6) as they contain market specific information and information

representing strategies employed in contract negotiations.

VI. SERVICE

Q. What business office will be used to provide service to Eureka?

A. Eureka customers will be temporarily served from MAWC operations located at the Eureka Wastewater Plant on Truitt Drive until a permanent office is located, with hours from 8:00 am-4:30 pm, Monday thru Friday. The same customer service team that takes care of existing MAWC customers will also take care of Eureka customers. Customer service hours are 7:00 am-7:00 pm, Monday thru Friday and 24/7 coverage for emergencies.

Q. How would customers in the Eureka service area contact the Company during non-business hours?

A. The same customer service team that takes care of existing MAWC customers will also take care of Eureka customers. Customer service hours are 7:00 am-7:00 pm, Monday thru Friday and 24/7 coverage for emergencies.

Q. What payment options will be available to Eureka customers?

A. MAWC currently accepts and will offer to Eureka customers payment options of check, credit/debit cards and electronic funds transfer (EFT). Eureka customers will also have the option to make MAWC payments online via check or credit/debit cards.

Q. Does MAWC have a process for integrating the Eureka customers into its system?

A. Yes. Attached hereto and marked as **Schedule BWE-7** is an Integration Appendix which includes information relevant to the integration process of this proposed acquisition

Q. What benefits are associated with MAWC's purchase of the Eureka systems and MAWC's provision of water and sewer service to the Eureka area?

A. The grant of the requested CCNs (and approval of the underlying transaction) will result in the provision of regulated water and sewer service to the current and future residents of the service area. The water and sewer assets of Eureka would be acquired by MAWC, a Missouri public utility, and be subject to the jurisdiction of the Commission. MAWC has considerable expertise and experience in providing water and sewer utility services to residents of the State of Missouri and is fully qualified, in all respects, to own, operate and improve the water and sewer systems currently being operated in and around the City of Eureka. Moreover, MAWC has the experience and resources to address the new permit limits that will impact the Eureka wastewater plant when the current permit expires and to address the aesthetic issues identified by residents.

VIII. APPRAISAL

Q. Was an appraisal process of the Eureka systems conducted?

A. Yes. Details about the appraisal may be found in the Direct Testimony of Company witness Joseph E. Batis.

IX. CONCLUSION

Q. Please summarize your testimony?

A. The City of Eureka and its citizens have shown their desire to sell the water and sewer systems to MAWC. The Company has expertise in providing both water and sewer services. The citizens of Eureka voted to sell to MAWC and we can efficiently and affordably provide critical water and wastewater services. Because MAWC is regionalized, particularly in St. Louis County, it can provide economies of scale and a high level of efficiency. In fact, Eureka is one of only two communities in St. Louis County that is not currently operated by MAWC. The Company's nationwide affiliations and mass

purchasing power gives it the ability to gain significant savings on necessary equipment. MAWC has the workforce resources available to improve and maintain the Eureka water and sewer systems and provide quality customer service. The Commission should approve MAWC's application for CCNs.

Q. Does this conclude your direct testimony?

A. Yes.

Agreement for the Purchase of Eureka, Missouri's Water and Wastewater Systems

This **Agreement for Purchase of Water and Wastewater System** (the "Agreement") is made and entered into on the 17th day of November, 2020 by and between **Missouri-American Water Company**, a Missouri corporation ("Missouri-American"), and the **City of Eureka, Missouri** ("Seller"). Hereinafter, Missouri-American and Seller may be referred to individually as a "Party" or together as the "Parties".

RECITALS:

A. Seller currently owns and operates a water treatment facility and distribution system and sewer treatment and collection system with approximately 4,000 water connections and 3,900 sewer connections (collectively, the "System") in or near Eureka, Missouri.

B. Seller desires to sell substantially all of the assets that constitute or are used in furtherance of the System to Missouri-American pursuant to the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the foregoing recitals, and the representations, warranties, and covenants contained herein, and in exchange for other consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

ARTICLE 1
Definitions and Related Matters

For purposes of this Agreement, the capitalized terms used herein shall have the meanings assigned to them herein or in the attached Exhibit 1 and, for purposes of this Agreement and all other documents executed in connection herewith, the rules of construction set forth in Exhibit 1 shall govern.

ARTICLE 2
Purchase and Sale of Assets; Closing

2.1 Transfer of Assets. On and subject to the terms and conditions of this Agreement, at the Closing on the Closing Date and effective as of the Effective Time, Missouri-American shall purchase, acquire and accept from Seller, and Seller shall sell, convey, transfer, assign and deliver to Missouri-American, free and clear of all Encumbrances, the Acquired Assets. Notwithstanding anything to the contrary contained in this Section 2.1 or elsewhere in this Agreement, the Excluded Assets are not part of the sale and purchase contemplated hereunder, are excluded from the Acquired Assets, and shall remain the exclusive property of Seller subsequent to the Closing.

2.2 Consideration.

(a) The consideration for the System and the Acquired Assets shall consist of the Purchase Price. At Closing, Missouri-American shall pay to the Seller and such other payees set forth on Schedule 2.2, in accordance with wire transfer instructions to be provided by the Seller to Missouri-American at least three Business Days prior to the Closing Date, in immediately available funds, an aggregate amount equal to the Purchase Price.

(b) Missouri-American shall prepare the Allocation, which Allocation shall be binding upon Seller. The Parties shall report, act, and file Tax Returns in all respects and for all Tax purposes consistent with the Allocation. No Party shall take any Tax position (whether in audits, Tax Returns, or otherwise) that is inconsistent with or contrary to the Allocation. In the event that the Allocation is disputed by any Governmental Authority, the Party receiving notice of such dispute will promptly notify the other Party, and

the Parties will consult in good faith as to how to resolve such dispute in a manner consistent with the Allocation.

2.3 No Assumption of Liabilities. Any and all Liabilities of Seller, whether or not incurred in connection with the operation of the System, shall remain the sole responsibility of and shall be retained, paid, performed and discharged solely by Seller. Notwithstanding anything to the contrary contained in this Agreement, Missouri-American will not assume or be deemed to assume, and shall have no liability or obligation with respect to, any Liability of Seller, none of which Liabilities are part of the Contemplated Transactions.

2.4 Closing. Unless this Agreement is first terminated pursuant to Article 8 hereof, and subject to the satisfaction or, if permissible, waiver of each of the conditions set forth in Article 5 hereof, the Closing will take place at the Eureka City Hall or such other place or by such other means (e.g., facsimile and overnight delivery of original execution documents) as is agreed to by the Parties at 10:00 A.M., Central time, on (a) such date as is three (3) Business Days after the date on which all of the conditions set forth in Article 5 hereof shall have been satisfied or (to the extent permissible) waived (other than those conditions which, by their nature are to be satisfied or waived at Closing but subject to their satisfaction or waiver at Closing) or, if Missouri-American shall so elect, the final day of Seller's billing period of which such date is a part or (b) such other date as the Parties hereto may agree upon in writing. In any event, the Closing shall be effective as of the Effective Time.

2.5 Closing Obligations.

In addition to any other documents to be delivered under other provisions of this Agreement, at Closing:

(a) Seller shall deliver or cause to be delivered to Missouri-American, together with funds sufficient to pay all Taxes necessary for the transfer, filing or recording thereof (if any), the following documents:

(i) the Bill of Sale, duly executed by Seller;

(ii) the Intangible Assignments, duly executed by Seller;

(iii) the Franchise Agreement, duly executed by Seller;

(iv) all Consents and approvals from Governmental Authorities, and third parties under Contracts, necessary to ensure that Missouri-American will continue to have the same full rights with respect to the Acquired Assets as Seller had immediately prior to the consummation of the Contemplated Transactions, including the written Consents, in form and substance acceptable to Missouri-American, of the Governmental Authorities and third parties set forth in Schedule 2.5(a)(iv);

(v) a payoff letter from each lender from which Seller has incurred indebtedness for borrowed money which is outstanding, if any, and from each person or entity listed on Schedule 2.2, and a release of all Encumbrances relating to the Acquired Assets executed, filed and/or recorded by the holder of or parties to each such Encumbrance (including without limitation any violations cited by the Missouri Department of Natural Resources or any other Governmental Authority with authority over the System or the Acquired Assets, whether or not listed on Schedule 3.14), if any, in each case in substance and form reasonably satisfactory to Missouri-American and its counsel;

(vi) an affidavit, as provided in Section 1445(b)(2) of the Code, stating under penalties of perjury that Seller is not a foreign person within the meaning of Section 1445(f)(3) of the Code;

(vii) for each interest in Real Property and each easement and/or right-of-way affecting any Real Property or Acquired Asset, whether or not identified on Schedule 3.4, a recordable warranty deed or such other appropriate document or instrument of transfer or approval, as the case may require, each in form and substance reasonably satisfactory to Missouri-American;

(viii) such other deeds, bills of sale, assignments, certificates of title, documents and other instruments of transfer and conveyance as may reasonably be requested by Missouri-American, each in form and substance reasonably satisfactory to Missouri-American;

(ix) a copy of each permit, license, easement, land-right and other necessary authority for the operation of the System and the Acquired Assets, in each case validly issued in the name of the Seller and in full force and effect;

(x) a copy of Tax clearance certificates indicating Seller has no Tax due and dated within 30 days of Closing from any jurisdictions for which Seller may be subject to Tax, including, without limitation, Missouri;

(xi) the certificate contemplated by Section 5.1(d);

(xii) a legal opinion of Seller's legal counsel, affirmatively opining to such matters as Missouri-American or its legal counsel may reasonably request, including but not limited to the due authorization and execution of this Agreement by Seller and the enforceability thereof;

(xiii) a copy, certified by the Clerk of the City of Eureka to be true, complete and correct as of the Closing Date, of the resolutions of the Eureka Board of Aldermen approving the Contemplated Transactions and as to the incumbency and signatures of the officers of Seller executing this Agreement or any of the Transaction Documents on behalf of Seller;

(xiv) to the extent such transfer is requested by Missouri-American, evidence satisfactory to Missouri-American of the transfer of all utilities with respect to the System from Seller to Missouri-American; and

(xv) all other documents, instruments and writings required or reasonably requested by Missouri-American to be delivered at or prior to the Closing pursuant to this Agreement or otherwise required in connection herewith.

(b) At or prior to the Closing, Missouri-American shall deliver the following:

(i) to the Seller and such other payees set forth on Schedule 2.2, in accordance with wire transfer instructions to be provided by the Seller to Missouri-American at least three Business Days prior to the Closing Date, in immediately available funds, an aggregate amount equal to the Purchase Price;

(ii) to the Seller, the Intangible Assignments, duly executed by Missouri-American; and

(iii) to the Seller, the Franchise Agreement, duly executed by Missouri-American;

(iv) to the Seller, all other documents, instruments and writings required or reasonably requested by Seller to be delivered at or prior to the Closing pursuant to this Agreement or otherwise required in connection herewith.

ARTICLE 3
Representations and Warranties of Seller

Seller hereby makes the following representations and warranties to Missouri-American, each of which is true and correct on the date hereof, will be true and correct at Closing and shall survive the Closing and the Contemplated Transactions hereby to the extent set forth herein:

3.1 Organization of Seller. Seller is a duly organized muncipality organized and in good standing under the Laws of the State of Missouri, with full power and authority to conduct the Business and the System as they are now being conducted and to own, lease and operate the System and the Acquired Assets.

3.2 Enforcement; Authority; No Conflict.

(a) This Agreement constitutes the legal, valid and binding obligation of Seller, enforceable against Seller in accordance with its terms except as such enforcement may be limited by bankruptcy, insolvency or other similar Laws affecting the rights of creditors generally and by general principles of equity. Seller has the absolute and unrestricted right, power and authority to execute and deliver this Agreement and the Transaction Documents and to consummate the Contemplated Transactions. The Eureka Board of Aldermen has duly authorized the execution, delivery, and performance of this Agreement by Seller and no other proceeding on the part of Seller is necessary to authorize the execution, delivery and performance of this Agreement.

(b) This Agreement has been, and the Transaction Documents will be, duly executed and delivered by Seller.

(c) Neither the execution, delivery or performance by Seller of this Agreement or the Transaction Documents nor the consummation by it of the Contemplated Transactions will (i) contravene, conflict with or result in a violation of any provisions of the municipal code or other governing documents of Seller, (ii) contravene, conflict with or result in a violation of or give any Governmental Authority or other Person the right to challenge any of the Contemplated Transactions or to exercise any remedy or obtain any relief under any Laws or any Order to which Seller or any of the Acquired Assets may be subject, (iii) contravene, conflict with or result in a violation of any of the terms or requirements of or give any Governmental Authority the right to revoke, withdraw, suspend, cancel, terminate or modify any Permit or other authorization by a Governmental Authority that is held by Seller or that otherwise relates to the System or any of the Acquired Assets, (iv) contravene, conflict with or result in a violation or breach of any provision of, require the Consent of any Person under, or give any Person the right to declare a default or exercise any remedy under or to accelerate the maturity or performance of or to cancel, terminate or modify any Contract, indenture, mortgage, note, lease or other instrument or document to which Seller is a party or by which any of the Acquired Assets are bound or (v) result in the imposition or creation of any Encumbrance upon or with respect to any of the Acquired Assets.

(d) No filings or registrations with, notifications to, or authorizations, Consents or approvals of, a Governmental Authority or third party are required to be obtained or made by Seller in connection with the execution, delivery or performance by Seller of this Agreement or the Transaction Documents or the consummation by Seller of the Contemplated Transactions except related to the MoPSC approval. Neither the Contemplated Transactions nor the Transaction Documents will result in the creation of any Encumbrance against any of the Acquired Assets.

3.3 Assets. Except as set forth on Schedule 3.3, Seller has clear, good, and marketable title to, or a valid leasehold interest in, all of the Acquired Assets, free and clear of all Encumbrances. Except as set forth on Schedule 3.3, none of the Acquired Assets are leased or on loan by Seller to any third party. The Acquired Assets constitute all of the assets and property that, together with the rights granted or conveyed under the Transaction Documents, are necessary for the operation of the System, the Business and the Acquired Assets as conducted as of the date hereof. Upon the Closing, Missouri-American shall be vested

with good title or a valid leasehold interest in the System and all of the Acquired Assets, and all of the Acquired Assets will be free and clear of all Encumbrances. The Business constitutes all of the business conducted by any Person in connection with the System.

3.4 Real Property; Easements.

(a) Seller owns and has good and marketable title to the Real Property, free and clear of all options, leases, covenants, conditions, easements, agreements, claims, and other Encumbrances of every kind and there exists no restriction on the use or transfer of such property, in each case except as set forth on Schedule 3.4(b)(i), Schedule 3.4(b)(ii), Schedule 3.4(b)(iii) or Schedule 3.4(b)(vi). Set forth on Schedule 3.4(a) is a complete and accurate listing of all Real Property. Seller is not the lessor or lessee of any real property, and there are no outstanding options, rights of first refusal or rights of first offer to purchase any of the Real Property or any portion thereof or interest therein. Seller has made available to Missouri-American copies of all title reports, surveys, title policies and appraisals relating to the Real Property. At and after the Closing, Missouri-American shall have the right to maintain or use the Real Property, including the space, facilities or appurtenances outside the building lines, whether on, over or under the ground, and to conduct such activities thereon as maintained, used or conducted by Seller on the date hereof and such right is not subject to revocation. At and after the Closing, Missouri-American shall have all rights, easements and agreements necessary for the use and maintenance of water, sewer or other utility pipelines, poles, wires, conduits or other like facilities, and appurtenances thereto, over, across and under the Real Property.

(b) Except as set forth on Schedule 3.4(b)(i), the Real Property is properly classified under applicable zoning Laws, ordinances, and regulations for the current and continued operation of the System on the Real Property. No Proceeding is pending or threatened which could adversely affect the zoning classification of the Real Property. There are sufficient parking spaces, loading docks and other facilities at such Real Property to comply with such zoning Laws, ordinances, and regulations and Seller's use or occupancy of the Real Property is not dependent on any permitted non-conforming use or similar variance, exemption, or approval from any Governmental Authority. Except as set forth on Schedule 3.4(b)(ii), Seller's current use and occupancy of the Real Property and its operation of the System thereon does not violate any easement, covenant, condition, restriction or similar provision in any instrument of record or other unrecorded agreement affecting such Real Property. The present use and operation of the Real Property does not constitute a non-conforming use and is not subject to a variance. Except as set forth on Schedule 3.4(b)(iii), Seller has not received any notice of violation of any easements, covenants, restrictions or similar instruments and there is no basis for the issuance of any such notice or the taking of any action for such violation. Prior to Closing, Seller will provide to Missouri-American a true, correct and complete list of all easements relating to the Real Property or the Acquired Assets. All of such easements are valid and will be transferred to Missouri-American and remain in full force as of the Closing. Set forth on Schedule 3.4(b)(iv) hereto is a true, correct and complete list of all rights of way relating to the Real Property or the Acquired Assets. All of such rights of way are valid and will be transferred to Missouri-American and remain in full force as of the Closing. Except as set forth on Schedule 3.4(b)(v), all Improvements located on, and the use presently being made of, the Real Property comply with all applicable zoning and building codes, ordinances and regulations and all applicable fire, environmental, occupational safety and health standards and similar standards established by Law and the same use thereof by Missouri-American following Closing will not result in any violation of any such code, ordinance, regulation or standard. There is no proposed, pending or threatened change in any such code, ordinance, regulation or standard which would adversely affect the Business, the System or the Acquired Assets.

(c) Except as set forth on Schedule 3.4(c), no Improvements encroach on any land that is not included in the Real Property or on any easements affecting such Real Property, or violate any building lines or set-back lines, and there are no encroachments onto the Real Property, or any portion thereof, which would interfere with the use or occupancy of such Real Property or the continued operation of the System as currently conducted.

(d) There is no unpaid property Tax, levy or assessment against the Real Property (except for Encumbrances relating to Taxes not yet due and payable), nor is there pending or threatened any condemnation Proceeding against the Real Property or any portion thereof.

(e) Except as set forth in Schedule 3.4(e), there is no condition affecting the Real Property or the Improvements located thereon which requires repair or correction to restore the same to reasonable operating condition.

3.5 Personal Property. Set forth on Schedule 3.5(a) is a complete and accurate listing of all Acquired Assets which are personal property, if any. Except as set forth in Schedule 3.5(b): (i) no Acquired Asset which is personal property is in the possession of others (other than immaterial items temporarily in the possession of others for maintenance or repair), (ii) neither Seller nor any of its Affiliates holds any such property on consignment, and (iii) each item of such Acquired Assets has been maintained in accordance with normal industry practice, is in good operating condition and repair (subject to normal wear and tear) and is suitable for the purposes for which it is presently used.

3.6 Subsidiaries; No Undisclosed Liabilities. Seller does not have any subsidiaries and does not directly or indirectly own or have any capital stock or other equity interest in any Person. Except (a) to the extent and for the amount reflected as a Liability on the balance sheet included in the Unaudited Financial Statements, (b) Liabilities incurred in the Ordinary Course of Business since the date of the balance sheet included in the Unaudited Financial Statements (none of which will or may reasonably be expected to have an adverse effect upon the Business), or (c) as set forth on Schedule 3.6, Seller does not have any Liabilities whatsoever, known or unknown, asserted or unasserted, liquidated or unliquidated, accrued, absolute, contingent, or otherwise, there is no basis for any claim against Seller, the System or any of the Acquired Assets for any such Liability and there is no basis for any such Liability to become the Liability of Missouri-American from and after the Closing.

3.7 Tax Matters.

(a) Seller has timely and properly filed all Tax Returns that it was required to file. All such Tax Returns were complete and correct in all respects and were prepared in compliance with all applicable Laws. All Taxes owed by Seller have been paid. Seller is not the beneficiary of any extensions of time within which to file any Tax Return. No claim has ever been made by an authority in a jurisdiction where Seller does not file Tax Returns that Seller is or may be subject to taxation by that jurisdiction. There are no Encumbrances on any of the Acquired Assets that arose in connection with any failure (or alleged failure) to pay any Tax.

(b) Seller has withheld and paid all Taxes required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, member, stockholder, or other third party. Forms W-2 and 1099 required with respect thereto have been properly completed and timely filed.

(c) There are no audits or examinations of any Tax Returns pending or threatened that relate to Seller's operation of the System or the Acquired Assets. Seller is not a party to any action or Proceeding by any Governmental Authority for the assessment or collection of Taxes relating to the operation of the System or Acquired Assets, nor has such event been asserted or threatened. There is no waiver or tolling of any statute of limitations in effect with respect to any Tax Returns relating to Seller's operation of the System or the Acquired Assets.

(d) None of the Acquired Assets (i) has been or could be treated as a partnership or corporation for United States federal income Tax purposes or (ii) is property that is required to be treated for Tax purposes as being owned by any other Person (other than those Acquired Assets that are leased).

(e) None of the Acquired Assets represent property or obligations of Seller, including but not limited to uncashed checks to vendors, customers or employees, non-refunded overpayments or unclaimed subscription balances, that is escheatable to any Governmental Authority under any applicable escheatment Laws as of the date hereof or that may at any time after the date hereof become escheatable to any Governmental Authority under any applicable escheatment Law.

3.8 Contracts. Set forth on Schedule 3.8 is a complete and correct list of all Contracts related to the System to which Seller is a party or is otherwise bound. Seller has delivered or caused to be delivered to Missouri-American correct and complete copies of each such Contract (including any and all amendments), a description of the terms of each such Contract which is not in writing, if any, and all documents affecting the rights or obligations of any party thereto.

3.9 Environmental Matters.

(a) Except as set forth on Schedule 3.9(a), Seller is and at all times has been in full compliance with and has not been and is not in violation of or liable under any applicable Environmental Law. Except as set forth on Schedule 3.9(a), Seller has no basis to expect nor has it received any actual or threatened Order, notice or other communication from any Governmental Authority or other Person of any actual or potential violation or failure to comply with any Environmental Law or of any actual or threatened obligation to undertake or bear the cost of any Environmental, Health and Safety Liabilities with respect to the Real Property or any other properties or assets (whether real, personal or mixed) in which Seller has or has had an interest or with respect to the Real Property or any other real property at or to which Hazardous Materials were generated, manufactured, refined, transferred, imported, used or processed by Seller or any other Person for whose conduct it is or may be held responsible, or from which Hazardous Materials have been transported, treated, stored, handled, transferred, disposed, recycled or received.

(b) There are no pending or threatened claims, Encumbrances or other restrictions of any nature, resulting from any Environmental, Health and Safety Liabilities or arising under or pursuant to any Environmental Law with respect to or affecting the Real Property or any other properties and assets (whether real, personal or mixed) in which Seller has or had an interest.

(c) Neither Seller nor any other Person for whose conduct it is or may be held to be responsible has any Environmental, Health and Safety Liabilities with respect to the Real Property or with respect to any other properties and assets (whether real, personal or mixed) in which Seller (or any predecessor) has or has had an interest or at any property geologically or hydrologically adjoining the Real Property or any such other property or assets that could reasonably be expected to have a material adverse effect thereon.

(d) There are no Hazardous Materials, except those used in connection with the operation of the System and set forth in the list on Schedule 3.9(d), present on or in the Environment at the Real Property or at any geologically or hydrologically adjoining property, including any Hazardous Materials contained in barrels, above or underground storage tanks, landfills, land deposits, dumps, equipment (whether moveable or fixed) or other containers, either temporary or permanent and deposited or located in land, water, sumps or any other part of the Real Property or such adjoining property or incorporated into any structure therein or thereon. Neither Seller nor any other Person for whose conduct it is or may be held to be responsible has permitted or conducted, or is aware of, any Hazardous Activity conducted with respect to the Real Property or any other properties or assets (whether real, personal or mixed) in which Seller has or has had an interest except in material compliance with all applicable Environmental Laws. There has been no Release or threat of Release, of any Hazardous Materials at or from the Real Property or from or by any other properties and assets (whether real, personal or mixed) in which Seller has or has had an interest, or any geologically or hydrologically adjoining property, whether by Seller or any other Person.

(e) Except as set forth in Schedule 3.9(e), none of the following exists at the System or on the Real Property: (1) underground storage tanks; (2) asbestos-containing material in any form; (3) materials or equipment containing polychlorinated biphenyl; (4) groundwater monitoring wells; or (5) landfills, surface impoundments, or disposal areas.

(f) Except as set forth in Schedule 3.9(f) neither Seller nor any of its Affiliates is obligated to provide financial assurance in consideration of the System under Environmental Law.

(g) Seller has delivered to Missouri-American true and complete copies and results of any reports, studies, analyses, tests or monitoring possessed or initiated by Seller or its predecessors pertaining to Hazardous Materials or Hazardous Activities in, on or under the Real Property, or concerning compliance by Seller, its predecessors, or any other Person for whose conduct Seller is or may be held to be responsible, with Environmental Laws, said reports, studies, etc. to include without limitation, any and all Phase I environmental reports now or hereafter in the possession or control of Seller.

3.10 Permits. Set forth on Schedule 3.10 is a complete and correct list of all Permits used by Seller in the continuing operation of the System. Such Permits constitute all those necessary for the continuing operation of the System and are all valid and subsisting and in full force and effect. No fact or circumstance exists which is reasonably likely to cause any such Permit to be revoked or materially altered subsequent to the execution of this Agreement and the Closing Date. Neither the execution of this Agreement nor the Closing do or will constitute or result in a default under or violation of any such Permit.

3.11 Insurance. Seller maintains and has maintained appropriate insurance necessary for the full protection of all of its assets, properties, the System, operations, products and services. All such policies are in full force and effect and Seller will use commercially reasonable efforts to cause such policies to be outstanding and in full force and effect as of Closing and immediately following the execution of this Agreement and the consummation of the Contemplated Transactions. There are no pending Proceedings arising out of, based upon or with respect to any of such policies of insurance and, to Seller's Knowledge, no basis for any such Proceedings exists. Seller is not in default with respect to any provisions contained in any such insurance policies and no insurance provider is in default with respect to such insurance policies. Set forth in Schedule 3.11 is a true and accurate list of all such insurance policies Seller maintains, and the premiums therefor have been paid in full as they have become due and payable.

3.12 Absence of Certain Changes. There has not been any occurrence or event which, individually or in the aggregate, has had or is reasonably expected to have any Material Adverse Effect. Seller has continually operated the System and the Business only in the Ordinary Course of Business. Without limitation of the foregoing, Seller has not entered into, amended, terminated or received notice of termination of any Permit necessary for the continued operation of the System. In addition, Seller has not taken any action in connection with the System or the Business which, if taken on or after the date hereof, would have required the prior written Consent of Missouri-American pursuant to Section 6.6 hereof.

3.13 Litigation and Proceedings. Except as set forth on Schedule 3.13, there are no Proceedings, either pending or threatened, anticipated or contemplated, against Seller or involving the operation of the System, any of the Acquired Assets, or any of Seller's members, shareholders, directors, officers, agents or other personnel in their capacity as such, which could directly affect any of the Acquired Assets or the System. Seller has not been charged with, nor is it under investigation with respect to, any charge which has not been resolved to its favor concerning any violation of any applicable Law with respect to any of the Acquired Assets or the System and there is no valid basis for any such charge or investigation. Neither Seller nor any of its Affiliates has been subject to or threatened to be subject to any Proceeding or Order relating to personal injury, death or property or economic damage arising from products sold, licensed or leased and services performed by Seller or any of its Affiliates with respect to the System or the Business. No judgment, Order, writ, injunction, decree, assessment or other command of any Governmental Authority

affecting Seller or any of the Acquired Assets or the System has been entered which is presently in effect. Except as set forth on Schedule 3.13, there is no Proceeding pending or, to Seller's Knowledge, threatened which challenges the validity of this Agreement or the Contemplated Transactions or otherwise seeks to prevent, directly or indirectly, the consummation of the Contemplated Transactions, nor is there any valid basis for any such Proceeding.

3.14 Compliance with Laws. Seller is in compliance with all Laws, Permits, Orders, ordinances, rules and regulations, whether civil or criminal, of any federal, state, local or foreign governmental authority applicable to the System or the Business and has not committed any violation of any Law or any provision of its governing documents applicable to the Acquired Assets and/or the operation of the System. Except as set forth in Schedule 3.14 neither Seller nor any of its Affiliates has received any notice alleging such default, breach or violation.

3.15 Financial Statements. Attached as Schedule 3.15 are the Financial Statements. The Financial Statements have been prepared in accordance with GAAP and the Accounting Methodologies, subject in the case of the Unaudited Financial Statements to normal year-end adjustments and the absence of footnotes. The Financial Statements were derived from the books and records of Seller, are true, correct and complete in all material respects and present fairly in all material respects the financial condition, operating results and cash flows of Seller as of the dates and during the periods indicated therein (subject, in the case of the Unaudited Financial Statements, to normal year-end adjustments and the absence of footnotes).

3.16 Transactions with Related Parties. Except as set forth on Schedule 3.16, no city employee or elected official of Seller has any financial interest, direct or indirect, in any supplier or customer of, or other business which has any transactions or other business relationship with, Seller. Without limiting the generality of the foregoing, neither Seller nor any of its Affiliates nor any executive officer of Seller, any of its Affiliates or the Business owns, directly or indirectly, any interest in or is an owner, sole proprietor, member, stockholder, partner, director, officer, employee, consultant or agent of any Person which is a lessor, lessee, customer, licensee, or supplier of the Business and none of the employees of or servicing the Business owns, directly or indirectly, in whole or in part, any tangible property, patent, trademark, service mark, trade name, copyright, franchise, invention, Permit or license which was developed by or is used and necessary for the operation of the Business.

3.17 Customer Advances. Set forth on Schedule 3.17 is a complete and accurate list of all unexpired Extension Deposit Agreements (or similar agreements) to which Seller is a party (each an "Extension Deposit Agreement") and which contain unexpired obligations of Seller to provide for the payment of periodic refunds to parties making advances for the construction of facilities for water service. Seller will provide to Missouri-American within 15 days of the execution of this Agreement (to be updated at Closing), true and complete copies of each such Extension Deposit Agreement. All records of Seller relating to each Extension Deposit Agreement is complete and accurate in all material respects and, together with the relevant Extension Deposit Agreement, is all the information reasonably required to determine Seller's, and, consequently, Missouri-American's obligations to each party to the Extension Deposit Agreements; and there are no disputes or disagreements with any party to an Extension Deposit Agreement relating to the amount due under that agreement or the method of calculating that amount. Schedule 3.17 may be updated at Closing only with the mutual consent of the parties.

3.18 Accounts Receivable. Set forth on Schedule 3.18 is a list of all the accounts receivable of Seller with respect to the System and an aging schedule related thereto, as of September 30, 2020. Such accounts receivable, together with any such accounts receivable arising between such date and the Closing Date (collectively, the "Accounts Receivable"), are (to the extent not yet paid in full) valid, genuine and existing and arose or will have arisen from bona fide sales of products or services actually made in the Ordinary Course of Business. The Accounts Receivable are not subject to, and Seller has received no notice of, any counterclaim, set-off, defense or Encumbrance with respect to the Accounts Receivable. Except to

the extent paid prior to Closing, the Accounts Receivable are and will be current and fully collectible. No agreement for deduction, free goods, discount or deferred price or quantity adjustment has been made with respect to any Accounts Receivable.

3.19 Brokers, Finders. Except as set forth in Schedule 3.19, no finder, broker, agent or other intermediary, acting on behalf of Seller or any of Seller's Affiliates, is entitled to a commission, fee or other compensation in connection with the negotiation or consummation of this Agreement or any of the transactions contemplated hereby.

ARTICLE 4
Representations and Warranties of Missouri-American

Missouri-American hereby makes the following representations and warranties to Seller:

4.1 Organization. Missouri-American is a duly organized and validly existing corporation in good standing under the Laws of Missouri and has the power and authority to own, lease and operate its assets and properties and to conduct the business of the System as now being conducted.

4.2 Enforcement; Authority; No Conflict.

(a) This Agreement constitutes the legal, valid and binding obligation of Missouri-American and is enforceable against Missouri-American in accordance with its terms, except as such enforcement may be limited by bankruptcy, insolvency or other similar Laws affecting the rights of creditors generally and by general principles of equity. Missouri-American has the absolute and unrestricted right, power and authority to execute and deliver this Agreement and the Transaction Documents to which it is a party and to perform its obligations hereunder and thereunder.

(b) Neither the execution or delivery of this Agreement nor the consummation of the Contemplated Transactions shall result in: (i) a violation of or a conflict with any provision of the articles of incorporation or the bylaws of Missouri-American; (ii) a material breach of or default under any term, condition or provision of any Contract to which Missouri-American is a party, or an event which, with the giving of notice, lapse of time, or both, would result in any such breach or default; or (iii) a material violation of any applicable Law, Order, judgment, writ, injunction, decree or award or any event which, with the giving of notice, lapse of time, or both, would result in any such violation.

ARTICLE 5
Conditions Precedent to Closing

5.1 Conditions Precedent to the Obligations of Missouri-American. Missouri-American's obligations to consummate the Contemplated Transactions are subject to the satisfaction in full, unless expressly waived in writing by Missouri-American, of each of the following conditions:

(a) Authorization of Contemplated Transactions. Missouri-American shall have obtained all necessary corporate approvals to consummate the Contemplated Transactions, including, but not limited to the approval of its Board of Directors;

(b) Representations and Warranties. Each of the representations and warranties of Seller contained in this Agreement or in any Transaction Document shall have been true, correct and accurate in all respects on and as of the date hereof and shall also be true, correct and accurate in all material respects (other than Section 3.5 and representations and warranties qualified as to materiality, which shall have been true, correct and accurate in all respects) on and as of the Closing Date with the same force and effect as though made by Seller on and as of the Closing Date (except to the extent that any such representation or

warranty is made solely as of the date hereof or as of another date earlier than the Closing Date, which shall be accurate as of such date);

(c) Covenants. Seller shall have performed, observed and complied in all material respects with all of its obligations, covenants, undertakings and agreements contained in this Agreement or any Transaction Document and required to be performed, observed or complied with by Seller prior to or at the Closing;

(d) Certificates. Seller shall have delivered to Missouri-American a certificate, dated as of the Closing Date and executed by an officer of Seller, to the effect that the conditions set forth in Sections 5.1(b), (c) and (i) have been satisfied;

(e) Proceedings. No provision of any Law or Order shall be in effect, and no Proceeding by any Person shall be threatened or pending before any Governmental Authority, or before any arbitrator, which would: (i) prevent consummation of the Contemplated Transactions; (ii) have a likelihood of causing the Contemplated Transactions to be rescinded following consummation; (iii) adversely affect the right of Missouri-American to own any of the Acquired Assets; or (iv) adversely affect the System prospects or the value or condition of any of the Acquired Assets or the System;

(f) Closing Deliveries. Seller shall have delivered or caused to be delivered to Missouri-American each of the items set forth in Section 2.5(a);

(g) Governmental and Third Party Approvals. (i) Missouri-American shall have obtained a certificate of convenience and necessity and all necessary regulatory approvals by the MoPSC, or any other applicable regulatory body, and all other applicable Consents and approvals from Governmental Authorities and other third parties which are required in connection with the Contemplated Transactions, each in form and substance (including without limitation with respect to the terms and conditions contained in any such approval) acceptable to Missouri-American in its sole and absolute discretion, (ii) Missouri-American shall have obtained approval by the MoPSC to the adoption by Missouri-American as of Closing of the rates to be used by Seller as of immediately prior to Closing (as agreed in writing by Missouri-American and Seller as of the date hereof) and (iii) any waiting periods under existing Laws, and all extensions thereof, the passing of which is necessary to consummate the Contemplated Transactions, shall have expired;

(h) Due Diligence. Missouri-American shall have completed and be satisfied, in its sole and absolute discretion, with the results of its due diligence review of the Acquired Assets and Seller, including without limitation, with the results of any Phase I Environmental Site Assessment or other environmental assessment performed with respect to the Real Property or the Acquired Assets or chain of title search, all easements related to or necessary for access to or use of the System, all material contracts and operating permits and licenses of the System, and the Seller's operations, contracts, employment practices, compliance, accounting and other items as Missouri-American deems necessary, as each of the foregoing items relate to the System or the Acquired Assets; and

(i) No Material Adverse Effect. Missouri-American shall have determined that there shall not have occurred any event or circumstance which, individually or in the aggregate, has had or could reasonably be expected to have a Material Adverse Effect.

(j) Good Faith Discussions Regarding New Agreements. Each of the parties listed on Schedule 5.1(j) shall have entered into good faith discussions with Missouri-American regarding an agreement for water and/or wastewater (as applicable) services from the System reflecting terms which are acceptable to Missouri-American.

5.2 Conditions Precedent to Obligations of Seller. Seller's obligation to consummate the Contemplated Transactions is subject to the satisfaction in full, unless expressly waived in writing by Seller, of each of the following conditions:

(a) Representations and Warranties. Each of the representations and warranties of Missouri-American contained in this Agreement or in any Transaction Document shall have been true, correct and accurate in all respects on and as of the date hereof and shall also be true, correct and accurate in all material respects (other than representations and warranties qualified as to materiality, which shall have been true, correct and accurate in all respects) on and as of the Closing Date with the same force and effect as though made by Missouri-American on and as of the Closing Date (except to the extent that any such representation or warranty is made solely as of the date hereof or as of another date earlier than the Closing Date, which shall be accurate as of such date);

(b) Covenants. Missouri-American shall have performed, observed and complied in all material respects with all of its obligations, covenants, undertakings and agreements contained in this Agreement or any Transaction Document and required to be performed, observed or complied with by Missouri-American prior to or at the Closing;

(c) Proceedings. No provision of any Law or Order shall be in effect which would prevent consummation of the Contemplated Transactions; and

(d) Closing Deliveries. Missouri-American shall have delivered or caused to be delivered to Seller each of the items set forth in Section 2.5(b).

(e) MoPSC Approval of Rates. Missouri-American shall have obtained approval by the MoPSC to the adoption by Missouri-American as of Closing of the rates to be used by Seller as of immediately prior to Closing (as agreed in writing by Missouri-American and Seller as of the date hereof)

ARTICLE 6
Covenants and Special Agreements

6.1 Access to Information; Confidentiality

(a) Access. Between the date of this Agreement and the Closing Date, Missouri-American may, directly and through its representatives, make such confirmatory investigation of the System and the Acquired Assets as each deems necessary or advisable. In furtherance of the foregoing, Missouri-American and its representatives shall have reasonable access, upon reasonable notice during normal business hours, to all employees, properties, books, Contracts, customer lists, commitments and records of the Business, and Seller shall furnish and cause to be furnished to Missouri-American and its representatives such financial and operating data and other information as may from time to time be reasonably requested relating to the System, shall permit Missouri-American or its representatives to conduct such physical inspections and environmental audits of the Real Property as requested by Missouri-American and shall permit Missouri-American or its representatives to conduct interviews of employees of or servicing the Business. Seller and the management, employees, accountants and attorneys of or servicing the Business shall cooperate fully with Missouri-American and its representatives in connection with such investigation.

(b) Confidentiality.

(i) Prior to Closing (and, in the case of Seller, following Closing), each Party shall ensure that all Confidential Information which such Party or any of its respective officers, directors, employees, counsel, agents, or accountants may have obtained, or may hereafter obtain, from the other Party (or create using any such information) relating to the financial condition, results of operations, System,

properties, assets, Liabilities or future prospects of the other Party, any Related Person of the other Party or any customer or supplier of such other Party or any such Related Person shall not be published, disclosed or made accessible by any of them to any other Person at any time or used by any of them, in each case without the prior written Consent of the other Party; provided, however, that the restrictions of this sentence shall not apply (i) as may otherwise be required by Law, (ii) to the extent such Confidential Information shall have otherwise become publicly available, and (iii) as to Missouri-American, to disclosure by or on its behalf to regulatory authorities or other third parties whose Consent or approval may be required to consummate the Contemplated Transactions and to its lenders and professionals for the purpose of obtaining financing of such transactions.

(ii) In the event of termination of negotiations or failure of the Contemplated Transactions to close for any reason whatsoever, each Party promptly will destroy or deliver to the other Party and will not retain any documents, work papers and other material (and any reproductions thereof) obtained by each Party or on its behalf from such other Party or its subsidiaries as a result of this proposal or in connection therewith, whether so obtained before or after the execution hereof, and will not use any information so obtained and will cause any information so obtained to be kept confidential and not used in any way detrimental to such other Party.

6.2 Publicity; Announcements. Until after the Closing, no press release or other public statement concerning this Agreement or the transactions contemplated hereby shall be issued or made without the prior approval of the parties hereto, except as required by applicable law. After the Closing, no press release or other public statement concerning this Agreement or the transactions contemplated hereby shall be issued or made by Seller without the prior approval of Missouri-American, except as required by applicable law.

6.3 Cooperation. Subject to the terms and conditions of this Agreement, the Parties shall cooperate fully with each other and their respective counsel and accountants in connection with, and take or cause to be taken and do or cause to be done, any actions required to be taken under applicable Law to make effective the Contemplated Transactions as promptly as practicable. Prior to the Closing, the parties shall proceed expeditiously and in good faith to make such filings and take such other actions as may be reasonably necessary to satisfy the conditions to Closing set forth in Section 5.1(g). Any and all filing fees in respect of such filings shall be paid by Missouri-American. From and after the Closing, the parties shall do such acts and execute such documents and instruments as may be reasonably required to make effective the transactions contemplated hereby. On or after the Closing Date, the parties shall, on request, cooperate with one another by furnishing any additional information, executing and delivering any additional documents and instruments, including contract assignments, and doing any and all such other things as may be reasonably required by the parties or their counsel to consummate or otherwise implement the transactions contemplated by this Agreement. Should Seller, in its reasonable discretion, determine after the Closing that books, records or other materials constituting Acquired Assets are still in the possession of Seller, Seller shall promptly deliver them to Missouri-American at no cost to Missouri-American. Seller hereby agrees to cooperate with Missouri-American to ensure a proper transition of all customers with respect to billing and customer service activities. Missouri-American shall take the lead in obtaining MoPSC approval with respect to the Contemplated Transactions. Seller will cause to be provided to Missouri-American copies of all easements related to the System which are in the possession of Seller, will execute a blanket easement assignment in form and substance reasonably acceptable to Missouri-American in connection with or following the Closing as requested by Missouri-American and will use commercially reasonable efforts to assist Missouri-American in obtaining any easements related to the System which are not transferred from Seller to Missouri-American and/or which are necessary in connection with the operation of the System.

6.4 Exclusivity. Seller will not and will not permit its affiliates, officers, directors, employees or other agents or representatives to, at any time prior to the termination of this Agreement, directly or indirectly, (i) take any action to solicit, initiate or encourage the making of any Acquisition Proposal, or (ii)

discuss or engage in negotiations concerning any Acquisition Proposal with, or further disclose any non-public information relating to Seller to, any person or entity in connection with an Acquisition Proposal, in each case, other than Missouri-American and its representatives.

6.5 **No Inconsistent Action.** Prior to the Closing Date, no Party shall take any action, and each Party will use its commercially reasonable efforts to prevent the occurrence of any event (but excluding events which occur in the Ordinary Course of Business and events over which such Party has no control), which would result in any of its representations, warranties or covenants contained in this Agreement or in any Transaction Document not to be true and correct, or not to be performed as contemplated, at and as of the time immediately after the occurrence of such action or event. If at any time prior to the Closing Date, a Party obtains knowledge of any facts, circumstances or situation which constitutes a breach, or will with the passage of time or the giving of notice constitute a breach, of any representation, warranty or covenant of such Party under this Agreement or any Transaction Document or will result in the failure of any of the conditions contained in Article 5 to be satisfied, such Party shall give the other Party prompt written notice thereof; provided, however, that no such notice shall cure any breach of any representation, warranty or covenant contained herein or therein or will relieve any such Party of any obligations hereunder or thereunder unless specifically agreed to in writing by the other Party.

6.6 **Conduct of Business.** Between the date of this Agreement and the Closing Date, Seller shall carry on the operation of the System, the Business and the Acquired Assets in the Ordinary Course of Business and in compliance with Law, not introduce any materially new method of management or operation, use reasonable best efforts to preserve the System, the Business and the Acquired Assets, conserve the goodwill and relationships of its customers, suppliers, Governmental Authorities and others having business relations with it, maintain in full force and effect all policies of insurance now in effect for the benefit of Seller, maintain supplies at a level which is sufficient to operate the System in accordance with past practice and maintain the Acquired Assets in substantially the condition currently existing, normal wear and tear excepted. By way of illustration and not limitation, Seller will not, between the date hereof and the Closing Date, directly or indirectly do, or prepare to do, any of the following without the prior written Consent of Missouri-American, (a) sell, lease, transfer or otherwise dispose of, or license, mortgage or otherwise encumber, or give a security interest in or subject to any Encumbrances, any of the Acquired Assets, (b) merge or consolidate with or acquire, or agree to merge or consolidate with or acquire (by merging or consolidating with, or by purchasing a substantial portion of the stock or assets of, or by any other manner), any business or corporation, partnership, joint venture, association or other business organization or division thereof or otherwise change the overall character of the Business in any material way, (c) enter into any Contract other than in the Ordinary Course of Business, (d) abandon, sell, license, transfer, convey, assign, fail to maintain or otherwise dispose of any item of the transferred intellectual property, (e) make any change in any of its present accounting methods and practices, (f) make any new Tax election, or change or revoke any existing Tax election, or settle or compromise any Tax liability or file any income Tax Return prior to the last day (including extensions) prescribed by Law, in the case of any of the foregoing, material to the business, financial condition or results of operations of Seller, (g) engage in any transactions with any Related Person which would survive Closing, (h) pay, discharge, settle or satisfy any material claims or Liabilities (absolute, accrued, asserted or unasserted, contingent or otherwise), other than the payment, discharge or satisfaction, in the Ordinary Course of Business or in accordance with their terms, of Liabilities reflected or reserved against in the Financial Statements (or the notes thereto), or not required by GAAP to be so reflected or reserved, or incurred in the Ordinary Course of Business, or waive any material benefits of, or agree to modify any material confidentiality, standstill, non-solicitation or similar agreement with respect to the Business to which Seller or any of its Affiliates is a party, (i) engage in any activity with the purpose or intent of (A) accelerating the collection of accounts receivable or (B) delaying the payment of the accounts payable, (j) enter into commitments for new capital expenditures in excess of $25,000 in the aggregate, (k) create or issue or grant an option or other right to subscribe, purchase or redeem any of its securities or other equity interests (other than with Missouri-American), (l) adopt a plan of complete or partial liquidation or resolutions providing for

or authorizing such a liquidation or dissolution, merger, consolidation, restructuring, recapitalization or reorganization or (m) enter into any agreement (conditional or otherwise) to do any of the foregoing.

6.7 No Transfer at Odds with Law. Notwithstanding anything to the contrary contained herein, nothing in this Agreement shall be deemed to require the conveyance, assignment or transfer of any Acquired Asset that by operation of applicable Law cannot be conveyed, assigned, transferred or assumed. Each Party shall continue to use reasonable best efforts to obtain at the earliest practicable date all unobtained Consents or approvals required to be obtained by it in connection with the transfer of the Acquired Assets or performance of any Transaction Document. If and when any such Consents or approvals shall be obtained, then Seller shall promptly, and hereby does, assign its rights thereunder to Missouri-American without payment of consideration and Missouri-American shall, and hereby does, without the payment of any consideration therefor, (i) assume such rights or (ii) perform (or agree to perform) under such Transaction Document, as applicable. Each Party shall execute such good and sufficient instruments as may be necessary to evidence such assignment and assumption. The entire beneficial interest in and to, and the risk of loss with respect to, the Acquired Assets shall, regardless of when legal title thereto shall be transferred to Missouri-American, pass to Missouri-American at Closing as of the Effective Time, and Seller shall, without consideration therefor, pay, assign and remit to Missouri-American all monies, rights and other consideration received in respect of such performance. To the extent permitted by Law, Seller shall exercise or exploit its rights in respect of such Acquired Assets only as directed by Missouri-American.

6.8 Release of Encumbrances. Seller promptly shall take such actions as shall be requested by Missouri-American to secure the release of all Encumbrances relating to the Acquired Assets, in each case in substance and form reasonably satisfactory to Missouri-American and its counsel.

6.9 Retention of Records. Subject to applicable Law and, subject to any applicable restrictions as to confidentiality (as to which Missouri-American does not provide indemnification, or the waiver of which Seller shall not have obtained after using reasonable best efforts), Seller shall preserve any books and records relating to the System or the Business that are not delivered to Missouri-American hereunder for a period no less than seven (7) years after the Closing Date (or such longer period as shall be required by applicable Law), and Seller shall make available such books and records for review and copying to Missouri-American and its authorized representatives following the Closing at Missouri-American's expense upon reasonable notice during normal business hours. During such period, Seller shall permit, to the extent permitted by applicable Law and upon request of Missouri-American, Missouri-American and any of its agents, representatives, advisors or consultants reasonable access to employees of or servicing the Business for information related to periods up to and including the Closing.

6.10 Tax Covenants.

(a) Seller shall pay all Taxes of Seller, the System and the Acquired Assets for any Tax year or period (or portion thereof) ending at or before the Closing. For the purposes of this Section 6.10(a), the portion of such personal property or similar ad valorem Tax that relates to the Tax period ending as of the Closing shall be deemed to be the amount of such Tax for the entire Tax period multiplied by a fraction, the numerator of which is the number of days in the Tax period ending as of the Closing and the denominator of which is the number of days in the entire Tax period. For purpose of this Section 6.10(a), the portion of all other Taxes that relates to the Tax period ending as of the Closing shall be determined on the basis of an interim closing of the books.

(b) Each Party agrees to furnish or cause to be furnished to the other Party, upon request, as promptly as practical, such information (including reasonable access to books and records, Tax Returns and Tax filings) and assistance as is reasonably necessary for the filing of any Tax Return, the conduct of any Tax audit, and for the prosecution or defense of any claim, suit or Proceeding relating to any Tax matter. The Parties shall cooperate with each other in the conduct of any Tax audit or other Tax Proceedings and each

shall execute and deliver such powers of attorney and other documents as are necessary to carry out the intent of this Section 6.10(b).

(c) Seller shall pay all Taxes necessary for the transfer of the Acquired Assets, or the filing or recording of such transfer.

6.11 Capital Investment by Missouri-American. Missouri-American agrees to make significant investments (as determined by Missouri-American in good faith) in the System in the first ten years following the Closing Date, which will include, but not be limited to, internal pipelines and mains to connect the System to Seller's existing St. Louis County water system (anticipated to be completed within 18 months of Closing absent force majeure or other events beyond the reasonable control of Missouri-American), as well as significant capital (as determined by Missouri-American in good faith) to upgrade the sewer system to ensure it is compliant in all material respects with all applicable new regulations, as well as a service center/office to be located in Eureka, Missouri.

6.12 Hiring of Employees. Missouri-American agrees to offer employment on terms materially consistent with other similarly situated Missouri-American employees to certain existing Eureka public works employees as determined by Missouri-American in good faith, provided they pass the necessary background checks that are required for all Missouri-American Water employees.

6.13 Replacement of Meters. In the event that any residential or commercial customer of Missouri-American which is connected to the System requests, at any time following the Closing, to switch to a smaller water meter and Missouri-American agrees to make such change, such change shall be made at the cost and expense of Missouri-American.

6.14 Treatment of Customers in Drought or Water Shortage. In the event of a drought or water shortage impacting customers of Missouri-American which are connected to the System following the Closing, Missouri-American shall treat such customers in a manner which is generally consistent with the treatment provided by Missouri-American to other customers.

6.15 Response Times. Missouri-American will use commercially reasonable efforts to respond to each service and repair made by customers of Missouri-American which are connected to the System following the Closing as promptly as reasonably practicable.

6.16 Ammonia Discharge. Missouri-American will use commercially reasonable efforts to develop and implement a compliance plan for the System in compliance with the applicable regulations of the Missouri Department of Natural Resources with regard to any ammonia discharge reduction required to be implemented with respect to the System.

ARTICLE 7
Indemnification

7.1 Survival of Representations and Warranties and Covenants.

(a) All of the representations and warranties made by Seller in this Agreement, its Schedules, or any certificates or documents delivered hereunder shall survive the Closing Date and consummation of the Contemplated Transactions for a period of three (3) years; provided, however, that the representations and warranties contained in Sections 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 3.9 and 3.19 shall survive indefinitely.

7.2 Indemnification and Payment of Damages by Seller. Subject to the terms of this Article 7, Seller hereby agrees to fully pay, protect, defend, indemnify and hold harmless the Indemnified Persons from any and all Damages arising out of, resulting from, relating to or caused by: (i) any inaccuracy in or

breach of (or any claim by any third party alleging or constituting an inaccuracy or breach of) any representation or warranty of, or any failure to perform or nonfulfillment of any provision or covenant contained in this Agreement or any other Transaction Document by, Seller; (ii) all Liabilities and/or duties of Seller, whether accruing prior to or after the Closing Date, and any Encumbrance affecting the Acquired Assets; (iii) assessments, charges and other similar claims due or owing, directly or indirectly, by Seller or otherwise as a result of or on account of the Acquired Assets or the System at any time prior to the Closing Date; (iv) the ownership and/or operation of any of the Acquired Assets or the System prior to Closing; (v) any Proceeding now existing or hereafter arising and relating to the Acquired Assets or the System and arising from events or matters occurring prior to the Closing Date; (vi) any Excluded Assets; (vii) any and all Taxes imposed on or arising from the transfer of the Acquired Assets; (viii) intercompany accounts payable and accounts receivable by and among Seller and/or its Affiliates; (ix) transaction costs and expenses incurred by or on behalf of Seller in connection with this Agreement or the Contemplated Transactions; (x) any claim related to the System by any Person listed on Schedule 3.13; or (xi) any matters described on Schedule 7.2.

7.3 Indemnification By Missouri-American. Missouri-American hereby agrees to fully pay, protect, defend, indemnify and hold harmless Seller and its respective successors and assigns, from any and all Damages incurred by any of them arising out of, resulting from, relating to or caused by (i) any inaccuracy in or breach of any representation or warranty of, or any failure to perform or nonfulfillment of any provision or covenant contained in this Agreement or any other Transaction Document by, Missouri-American or (ii) transaction costs and expenses incurred by or on behalf of Missouri-American in connection with this Agreement or the Contemplated Transactions.

7.4 Notice of Claim. In the event that either party seeks indemnification on behalf of an Indemnified Person, such party seeking indemnification (the "Indemnified Party") shall give reasonably prompt written notice to the indemnifying party (the "Indemnifying Party") specifying the facts constituting the basis for such claim and the amount, to the extent known, of the claim asserted; provided, however, that the right of a person or entity to be indemnified hereunder shall not be adversely affected by a failure to give such notice unless, and then only to the extent that, an Indemnifying Party is actually irrevocably and materially prejudiced thereby. Subject to the terms hereof, the Indemnifying Party shall pay the amount of any valid claim not more than 10 days after the Indemnified Party provides notice to the Indemnifying Party of such amount.

7.5 Right to Contest Claims of Third Persons. If an Indemnified Party is entitled to indemnification hereunder because of a claim asserted by any Third Person, the Indemnified Party shall give the Indemnifying Party reasonably prompt notice thereof after such assertion is actually known to the Indemnified Party; provided, however, that the right of a Person to be indemnified hereunder in respect of claims made by a Third Person shall not be adversely affected by a failure to give such notice unless, and then only to the extent that, an Indemnifying Party is actually irrevocably and materially prejudiced thereby. Missouri-American shall have the right, upon written notice to Seller, to investigate, contest or settle the Third Person Claim. Seller may thereafter participate in (but not control) the defense of any such Third Person Claim with its own counsel at its own expense. If Seller thereafter seeks to question the manner in which Missouri-American defended such Third Person Claim or the amount or nature of any such settlement, Seller shall have the burden to prove by clear and convincing evidence that conduct of Missouri-American in the defense and/or settlement of such Third Person Claim constituted gross negligence or willful misconduct. The Parties shall make available to each other all relevant information in their possession relating to any such Third Person Claim and shall cooperate in the defense thereof, provided that Missouri-American shall control the defense thereof. Promptly (and in any event within 10 days) following the resolution of any Third Person Claim, Seller shall pay to Missouri-American any amount to which Missouri-American is entitled pursuant to this Article 7 with respect to such Third Person Claim.

7.6 Certain Indemnification Matters.

(a) Notwithstanding anything contained herein or elsewhere to the contrary, all "material" and "Material Adverse Effect" or similar materiality type qualifications contained in the representations and warranties set forth in this Agreement shall be ignored and not given any effect for purposes of the indemnification provisions hereof, including, without limitation, for purposes of determining whether or not a breach of a representation or warranty has occurred and/or determining the amount of any Damages.

(b) No information or knowledge acquired, or investigations conducted, by Missouri-American or its representatives, of Seller or the System or otherwise shall in any way limit, or constitute a waiver of, or a defense to, any claim for indemnification by any Indemnified Persons under this Agreement.

ARTICLE 8
Termination

8.1 Termination. This Agreement may be terminated at any time prior to the Closing only (a) by mutual written Consent of Seller and Missouri-American, (b) by Seller or Missouri-American upon written notice to the other, if the Closing shall not have occurred on or prior to the earlier of (i) July 1, 2021 and (ii) the date which is 60 days after the date as of which all approvals required to be obtained from the MoPSC with respect to this Agreement and/or the transactions contemplated hereby have been obtained, provided, however, that the right to terminate this Agreement under this Section 8.1(b) shall not be available to any Party whose breach under this Agreement has caused or resulted in the failure of the Closing to occur on or before such date, (c) by Missouri-American, if Missouri-American is not in material breach of any of its representations, warranties, covenants and agreements under this Agreement and there has been a material breach of any representation, warranty, covenant or agreement contained in this Agreement on the part of Seller and Seller has not cured such breach within five (5) Business Days after receipt of notice of such breach (provided, however, that, no cure period shall be required for a breach which by its nature cannot be cured), (d) by Missouri-American, if, at any time before Closing, Missouri-American is not satisfied with the results of its due diligence review of the System and the Acquired Assets, (e) by Seller if Seller is not in material breach of any of its representations, warranties, covenants and agreements under this Agreement and there has been a material breach of any representation, warranty, covenant or agreement contained in this Agreement on the part of Missouri-American and Missouri-American has not cured such breach within five (5) Business Days after receipt of notice of such breach (provided, however, that, no cure period shall be required for a breach which by its nature cannot be cured), (f) by Seller or Missouri-American upon written notice to the other, if any court of competent jurisdiction or other competent Governmental Entity shall have issued a statute, rule, regulation, Order, decree or injunction or taken any other action permanently restraining, enjoining or otherwise prohibiting the Contemplated Transactions, and such statute, rule, regulation, Order, decree or injunction or other action shall have become final and non-appealable, (g) by Missouri-American, if all necessary regulatory approvals (including rate treatment, refunds and setting of rate base and all approvals described in Section 5.1(g)) contemplated hereby or otherwise necessary to close the Contemplated Transactions have not been obtained within 270 days of the date hereof, or (h) by Missouri-American if any Material Adverse Effect shall have occurred or, in the reasonable judgment of Missouri-American, shall be reasonably likely to occur.

8.2 Effect of Termination. The right of each Party to terminate this Agreement under Section 8.1 is in addition to any other rights such Party may have under this Agreement or otherwise, and the exercise of a right of termination will not be an election of remedies. If this Agreement is terminated pursuant to Section 8.1, all further obligations of the Parties under this Agreement will terminate, except that the obligations set forth in the Confidentiality Agreement, Section 6.1(b) ("Confidentiality"), Section 6.2 ("Publicity; Announcements"), this Section 8.2 ("Effect of Termination") or Article 9 ("General Provisions") will survive; provided, however, that if this Agreement is terminated by a Party because of the breach of the Agreement by another Party or because one or more of the conditions to the terminating Party's obligations under this Agreement is not satisfied as a result of the other Party's failure to comply with its obligations

under this Agreement, the terminating Party's right to pursue all legal remedies will survive such termination unimpaired.

ARTICLE 9
General Provisions

9.1 Amendment and Modification. No amendment, modification or supplement of any provision of this Agreement will be effective unless the same is in writing and is signed by the Parties.

9.2 Assignments. Seller may not assign or transfer any of its rights or obligations under this Agreement to any other Person without the prior written Consent of Missouri-American. Missouri-American may not assign its rights and obligations under this Agreement to any third party, without the prior written Consent of Seller, but may assign its rights and obligations under this Agreement to any Related Person or successor in interest without the Consent of Seller. Subject to this Section 9.2, all provisions of this Agreement are binding upon, inure to the benefit of and are enforceable by or against the Parties hereto and their respective heirs, executors, administrators or other legal representatives and permitted successors and assigns.

9.3 Captions; Construction. Captions contained in this Agreement and any table of contents preceding this Agreement have been inserted herein only as a matter of convenience and in no way define, limit, extend or describe the scope of this Agreement or the intent of any provision hereof. In the event of an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any provisions of this Agreement.

9.4 Counterparts; Facsimile. This Agreement may be executed by the Parties hereto on any number of separate counterparts, and all such counterparts so executed constitute one agreement binding on all the Parties hereto notwithstanding that all the Parties hereto are not signatories to the same counterpart. For purposes of this Agreement, a document (or signature page thereto) signed and transmitted by e-mail, facsimile machine or telecopier is to be treated as an original document.

9.5 Entire Agreement. This Agreement and the other Transaction Documents constitute the entire agreement among the Parties hereto pertaining to the subject matter hereof and supersede all prior agreements, letters of intent, understandings, negotiations and discussions of the Parties hereto, whether oral or written, executed by the Parties pertaining to the subject matter hereof. All of the Exhibits and Schedules attached to this Agreement are deemed incorporated herein by reference.

9.6 Governing Law. This Agreement and the rights and obligations of the Parties hereunder are to be governed by and construed and interpreted in accordance with the Laws of the State of Missouri applicable to Contracts made and to be performed wholly within Missouri, without regard to choice or conflict of laws rules.

9.7 Legal Fees, Costs. Except as provided herein, all legal, consulting and advisory fees and other costs and expenses incurred in connection with this Agreement and the Contemplated Transactions are to be paid by the Party incurring such costs and expenses.

9.8 Notices. All notices, Consents, requests, demands and other communications hereunder are to be in writing and are deemed to have been duly given, made or delivered: (i) when delivered in person or by e-mail, (ii) three (3) Business Days after deposited in the United States mail, first class postage prepaid, or (iii) in the case of telegraph or overnight courier services, one (1) Business Day after delivery to the telegraph company or overnight courier service with payment provided, in each case addressed as follows:

(a) if to Seller, (i) to the City of Eureka, Attn: Mayor, 100 City Hall Dr., P.O. Box 125, Eureka, MO 63025 (sflower@eureka.mo.us) and (ii) with a copy to Kathy Butler, Eureka City Attorney, 123 South Central Avenue, P.O. Box 286, Eureka, Missouri 63025 (klblaw@sbcglobal.net) or

(b) if to Missouri-American, (i) to Missouri-American Water Company, 727 Craig Road, St. Louis, Missouri 63141, Attn: Deborah Dewey, President, (ii) with a copy to Missouri-American Water Company, 727 Craig Road, St. Louis, Missouri 63141, Attn: Timothy Luft (tim.luft@amwater.com) and a copy to Bryan Cave Leighton Paisner LLP, 211 N. Broadway, Suite 3600, St. Louis, MO 63102, Attn: Ryan Davis (rsdavis@bclplaw.com), or to such other address as any Party hereto may designate by notice to the other Parties in accordance with the terms of this Section.

9.9 Severability. This Agreement shall be deemed severable; the invalidity or unenforceability of any term or provision of this Agreement shall not affect the validity or enforceability of this Agreement or of any other term hereof, which shall remain in full force and effect, for so long as the economic or legal substance of the Contemplated Transactions is not affected in any manner materially adverse to any Party.

9.10 Specific Performance and Injunctive Relief; Remedies. The Parties hereto recognize that if any or all of them fail to perform, observe or discharge any of their respective obligations under this Agreement, a remedy at law may not provide adequate relief to the other Parties hereto. Therefore, in addition to any other remedy provided for in this Agreement or under applicable Law, any Party hereto may demand specific performance of this Agreement, and such Party shall be entitled to temporary and permanent injunctive relief, in a court of competent jurisdiction at any time when any of the other Parties hereto fail to comply with any of the provisions of this Agreement applicable to such Party. To the extent permitted by applicable Law, all Parties hereto hereby irrevocably waive any defense based on the adequacy of a remedy at law which might be asserted as a bar to such Party's remedy of specific performance or injunctive relief. Except as otherwise provided herein, all rights and remedies of the parties under this Agreement are cumulative and without prejudice to any other rights or remedies under Law. Nothing contained herein shall be construed as limiting the Parties' rights to redress for fraud.

9.11 No Third-Party Beneficiary. This Agreement is solely for the benefit of the Parties hereto and their respective successors and permitted assigns (and those Persons entitled to recover under the indemnity provisions hereof), and no other Person (other than those Persons entitled to recover under the indemnity provisions hereof) has any right, title, priority or interest under this Agreement or the existence of this Agreement.

9.12 Waiver of Compliance; Consents. Any failure of a Party to comply with any obligation, covenant, agreement or condition herein may be waived by the other Party only by a written instrument signed by the Party granting such waiver, but such waiver or failure to insist upon strict compliance with such obligation, covenant, agreement or condition shall not operate as a waiver of, or estoppel with respect to, any subsequent or other failure. Whenever this Agreement requires or permits Consent by or on behalf of any Party hereto, such Consent shall be given in writing in a manner consistent with the requirements for a waiver of compliance as set forth in this Section 9.12.

9.13 Jurisdiction; Venue; Consent to Service of Process. Each of the Parties irrevocably and unconditionally submits to the non-exclusive jurisdiction of the St. Louis County Court in St. Louis, Missouri or, if such court will not accept jurisdiction, the Supreme Court of the State of Missouri or any court of competent civil jurisdiction sitting in St. Louis, Missouri. In any action, suit or other Proceeding, each of the Parties irrevocably and unconditionally waives and agrees not to assert by way of motion, as a defense or otherwise any claims that it is not subject to the jurisdiction of the above courts, that such action or suit is brought in an inconvenient forum or that the venue of such action, suit or other Proceeding is improper. Each of the Parties also hereby agrees that any final and unappealable judgment against a Party in connection with any action, suit or other Proceeding shall be conclusive and binding on such Party and that such award

or judgment may be enforced in any court of competent jurisdiction, either within or outside of the United States. Each Party irrevocably consents to service of process in the manner provided for the giving of notices pursuant to Section 9.8. Nothing in this Section 9.13 shall affect the right of any Party to serve process in any other manner permitted under applicable Law.

[Remainder of page intentionally left blank; signature page attached.]

IN WITNESS WHEREOF, the Parties have executed this Asset Purchase Agreement as of the date first set forth above:

Missouri-American Water Company, a Missouri Corporation

By: _____
Deborah Dewey, President

Attest:

_____

City of Eureka, Missouri

By: _____
Sean M. Flower, Mayor

Attest:

_____
Tracy Campisc, Asst. City Clerk

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

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

Permit No.	MO-0039659
Owner:	City of Eureka
Address:	P.O. Box 125, Eureka, MO 63025
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Eureka Wastewater Treatment Facility
Facility Address:	Truitt Drive, Eureka, MO 63025
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

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

FACILITY DESCRIPTION

See Page 2

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

June 1, 2018
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

September 30, 2022
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #004 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified C Operator.
Influent lift station / bar screen / three-cell aerated lagoon with fine-bubble air diffusers, Aquamats®, and recirculation pumps / ultraviolet disinfection / effluent pump station / sludge retained in lagoon / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater
Design population equivalent is 27,500.
Design flow is 2.8 MGD.
Actual flow is 1.6 MGD.
Design sludge production is 400 dry tons/year.

Legal Description:	Sec. 31, T44N, R4E, St. Louis County
UTM Coordinates:	X= 708568, Y= 4265832
Receiving Stream:	Meramec River (P)
First Classified Stream and ID:	Meramec River (P) (2185) 303(d) List
USGS Basin & Sub-watershed No.:	(07140102-1001)

Permitted Feature #SM1 – Instream Monitoring
Instream monitoring location – Upstream – See Special Condition #24

Classified Stream and ID:	Meramec River (P) (2185) 303(d) List
USGS Basin & Sub-watershed No.:	(07140102-1001)

Permitted Feature #SM2 – Instream Monitoring
Instream monitoring location – Downstream – See Special Condition #24

Classified Stream and ID:	Meramec River (P) (2185) 303(d) List
USGS Basin & Sub-watershed No.:	(07140102-1001)

OUTFALL #004

TABLE A-1.
INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **June 1, 2018** and remain in effect through **September 30, 2022**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/week	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		45	30	once/week	composite**
Total Suspended Solids	mg/L		45	30	once/week	composite**
E. coli (Note 1, Page 5)	#/100mL		630	126	once/week	grab
Ammonia as N	mg/L	*		*	once/week	grab
Oil & Grease	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JULY 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Total Phosphorus	mg/L	*		*	once/quarter****	grab
Total Nitrogen	mg/L	*		*	once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter****	grab
Chromium III, Total Recoverable	µg/L	*		*	once/quarter****	grab
Chromium VI, Total Dissolved	µg/L	*		*	once/quarter****	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter****	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter****	grab
Nickel, Total Recoverable	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2018.						
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ***	SU	6.0		9.0	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JULY 28, 2018.						
INFLUENT PARAMETER(S)			UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand$_5$ – Percent Removal (Note 2, Page 5)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (Note 2, Page 5)			%	85	once/month	calculated
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE JULY 28, 2018.						

* Monitoring requirement only.
** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.
*** pH is measured in pH units and is not to be averaged.
**** See table on Page 5 for quarterly sampling requirements.

OUTFALL #004

TABLE A-2.
FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **October 1, 2022** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/week	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		45	30	once/week	composite**
Total Suspended Solids	mg/L		45	30	once/week	composite**
E. coli (Note 1, Page 5)	#/100mL		630	126	once/week	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	* 36.6		* 9.3	once/week	grab
Oil & Grease	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE NOVEMBER 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Total Phosphorus	mg/L	*		*	once/quarter****	grab
Total Nitrogen	mg/L	*		*	once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter****	grab
Chromium III, Total Recoverable	µg/L	*		*	once/quarter****	grab
Chromium VI, Total Dissolved	µg/L	*		*	once/quarter****	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter****	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter****	grab
Nickel, Total Recoverable	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2023.						

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ***	SU	6.0		9.0	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE NOVEMBER 28, 2022.						

INFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand$_5$ – Percent Removal (Note 2, Page 5)	%	85	once/month	calculated
Total Suspended Solids – Percent Removal (Note 2, Page 5)	%	85	once/month	calculated
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE NOVEMBER 28, 2022.				

* Monitoring requirement only.
** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.
*** pH is measured in pH units and is not to be averaged.
**** See table on Page 5 for quarterly sampling requirements.

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

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

Note 2 – Influent sampling is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Percent Removal is calculated by the following formula: [(Average Influent –Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

OUTFALL #004	**TABLE A-3. WHOLE EFFLUENT TOXICITY FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **June 1, 2018** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Acute Whole Effluent Toxicity (Note 3)	TU_a	*			once/year	composite**
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE MAY 28, 2019.						
Chronic Whole Effluent Toxicity (Note 4)	TU_c	*			once/permit cycle	composite**
WET TEST REPORTS SHALL BE SUBMITTED ONCE EVERY 5 YEARS; THE FIRST REPORT IS DUE MAY 28, 2021.						

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

Note 3 – The Acute WET test shall be conducted once per year during the 1st, 2nd, and 4th year of the permit cycle. See Special Condition #22 for additional requirements.

Note 4 –The Chronic WET test shall be conducted during the 3rd year of the permit cycle. See Special Condition #23 for additional requirements.

PERMITTED FEATURE SM1***	TABLE B-1. INSTREAM MONITORING REQUIREMENTS UPSTREAM

The monitoring requirements shall become effective on **June 1, 2018** and remain in effect until expiration of the permit. The stream shall be monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*		*	once/quarter**	grab
Total Nitrogen	mg/L	*		*	once/quarter**	grab

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

PERMITTED FEATURE SM2***	TABLE B-2. INSTREAM MONITORING REQUIREMENTS DOWNSTREAM

The monitoring requirements shall become effective on **June 1, 2018** and remain in effect until expiration of the permit. The stream shall be monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Hardness, Total	mg/L	*		*	once/quarter**	grab

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

* Monitoring requirement only.
** See table below for quarterly sampling
*** See Special Condition #24 for additional requirements.

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

C. SCHEDULE OF COMPLIANCE

The permit for this facility issued on October 1, 2016 included new effluent limitations for ammonia, and a 5 year schedule to attain compliance with those final effluent limitations. The City plans to construct a new treatment facility and requested a time extension to the existing schedule; therefore, the schedule of compliance has been established at 6 years. Compliance must be achieved by October 1, 2022.

1. The permittee shall submit an interim progress report detailing progress made and attaining compliance with final effluent every 12 months from October 1, 2016.
2. Compliance with all final effluent limits must be achieved by October 1, 2022.

Please submit progress reports to the Missouri Department of Natural Resources via the Electronic Discharge Monitoring Report (eDMR) Submission System.

D. STANDARD CONDITIONS

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

E. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System.
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Collection System Maintenance Annual Reports;
      (2) Schedule of Compliance Progress Reports;
      (3) Sludge/Biosolids Annual Reports;
         i. In addition to the annual Sludge/Biosolids report submitted to the Department, the permittee must submit Sludge/Biosolids Annual Reports electronically using EPA's NPDES Electronic Reporting Tool ("NeT") (https://cdx.epa.gov/).
      (4) Any additional report required by the permit excluding bypass reporting.
      After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
      (1) Notices of Termination (NOTs);
      (2) No Exposure Certifications (NOEs); and
      (3) Bypass reporting, See Special Condition #11 for 24-hr. bypass reporting requirements.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.
2. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
   (a) To comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) To incorporate an approved pretreatment program pursuant to 40 CFR 403.8(a).

3. All outfalls must be clearly marked in the field. This does not include instream monitoring locations.

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

5. Report as no-discharge when a discharge does not occur during the report period. For instream samples, report as "no flow" if no stream flow occurs during the report period.

E. SPECIAL CONDITIONS (continued)

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

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

7. 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 reporting limit of the test. Reporting as "Non Detect" without also including the reporting 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 reporting limit (e.g. <10).
   (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
   (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
   (f) When calculating monthly averages, one-half of the method reporting limit (MRL) should be used instead of a zero. Where all data are below the MRL, the "<MRL" shall be reported as indicated in item (c).

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

9. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. To request a modification of the operational control testing requirements listed in 10 CSR 20-9, the permittee shall submit a permit modification application and fee to the Department requesting a deviation from the operational control monitoring requirements. If the request is approved, the Department will modify the permit.

10. 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) or the Departments' CMOM Model located at http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at http://dnr.mo.gov/pubs/pub2574.htm.

    The permittee shall also submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually, by January 28th, for the previous calendar year. The report shall contain the following information:
    (a) A summary of the efforts to locate and eliminate sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
    (b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
    (c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.

11. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the St. Louis Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: http://dnr.mo.gov/modnrcag/ or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.

E. SPECIAL CONDITIONS (continued)

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

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

14. 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.

15. 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.

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

17. 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.

18. If the permittee is planning to remove sludge from the lagoon, the permittee shall receive approval from the Department for the method of sludge disposal prior to its removal

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

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

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

22. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
        - The fathead minnow, *Oncorhynchus mykiss* (Acute Toxicity EPA Test Method 2000.0).
        - The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
    (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
    (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
    (d) The Allowable Effluent Concentration (AEC) for this facility is 32% with the dilution series being: 100%, 66%, 32%, 16%, and 8%.
    (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

E. SPECIAL CONDITIONS (continued)

23. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013; Table IA, 40 CFR Part 136).* The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
        - The fathead minnow, *Oncorhynchus mykiss* (Survival and Growth Test Method 1000.0).
        - The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
    (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
    (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
    (d) The Allowable Effluent Concentration (AEC) is 4.5%, the dilution series is: 36%, 18%, 9%, 4.5%, and 2.25%.
    (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

24. Receiving Water Monitoring Conditions
    (a) In the event that a safe, accessible location is not present at the location(s) listed, a suitable location can be negotiated with the Department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface if possible. The upstream receiving water sample should be collected at a point upstream from any influence of the effluent, where the water is visibly flowing down stream.
    (b) When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) from where the sample was collected. These observations shall be submitted with the sample results.
    (c) Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
        - If turbidity in the stream increases notably; or
        - If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hours
    (d) Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0039659
EUREKA WASTEWATER TREATMENT FACILITY

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major.

Part I – Facility Information

Facility Description:
Outfall #004 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified C Operator.
Influent lift station / bar screen / three-cell aerated lagoon with fine-bubble air diffusers, Aquamats®, and recirculation pumps / ultraviolet disinfection / effluent pump station / sludge retained in lagoon / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater
Design population equivalent is 27,500.
Design flow is 2.8 MGD.
Actual flow is 1.6 MGD.
Design sludge production is 400 dry tons/year.

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

Application Date: 11/21/2017
Expiration Date: 09/30/2017

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	4.34	Secondary	Domestic

Facility Performance History:
This facility was last inspected on September 20, 2017. The inspection showed the following unsatisfactory features:

- Failed to submit an application for renewal of the operating permit at least 180 days before the expiration of the permit
- Failed to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) or apply for No Exposure Certification
- Failure to submit annual report detailing efforts to locate and eliminate sources or excessive inflow and infiltration into the collection system for the previous calendar year by January 28th
- Failure to follow notification of unanticipated bypasses with five day report in accordance with 10 CSR 20-7.015(9)(G)2.B. The end dates of sanitary sewer overflow events which began on April 28, 2017 and December 30, 2015 were not reported.
- Failure to develop and implement a program for the repair and maintenance of the collection system

Comments:
Special conditions were updated to remove the SWPPP special condition as the facility submitted a No Exposure Certification form. Due to comments received by the City on April 4, 2018, special condition #7 has been updated to require "reporting limits" instead of "detection limits". Also, the City plans to construct a new treatment facility and requested a time extension to the existing schedule; therefore, the schedule of compliance has been established at 6 years.

Part II – Operator Certification Requirements

☒ - This facility is required to have a certified operator.

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

Owned or operated by or for a

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

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

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

Operator's Name: David W. Ricks
Certification Number: 10232
Certification Level: B

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 Control Testing Requirements

Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publically owned treatment works and privately owned facilities regulated by the Public Service Commission to conduct internal operational control monitoring to further ensure proper operation of the facility and to be a safeguard or early warning for potential plant upsets that could affect effluent quality. This requirement is only applicable if the publically owned treatment works and privately owned facilities regulated by the Public Service Commission has a Population Equivalent greater than two hundred (200) or twenty five (25) or more service connections.

10 CSR 20-9.010(3) allows the Department to modify the monitoring frequency required in the rule based upon the Department' judgement of monitoring needs for process control at the specified facility

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

Part IV – Receiving Stream Information

RECEIVING STREAM(S) TABLE: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Meramec River 303(d) List	P	2185	AQL, CLF, DWS, HHP, IND, IRR, LWW, SCR, WBC-A	07140102-1001	Direct Discharge

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

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

10 CSR 20-7.031(1)(C)1.:
AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; **CDF** = Cold-water fishery (Current narrative use is cold-water habitat.); **CLF** = Cool-water fishery (Current narrative use is cool-water habitat); EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = Whole body contact recreation that supports swimming uses and has public access;
WBC-B = Whole body contact recreation that supports swimming;
SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:
HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation for use on crops utilized for human or livestock consumption;
LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply;
IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)
WSA = Storm- and flood-water storage and attenuation; WHP = Habitat for resident and migratory wildlife species;
WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = Hydrologic cycle maintenance.

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

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (P)	LOW-FLOW VALUES (CFS)*		
	1Q10	7Q10	30Q10
Meramec River	351.9	368.3	425.3

* - Data from USGS Gauge Station #07019000 located on the Meramec River near Eureka, MO.

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
87.98	92.08	106.33	8.798	9.208	N/A

RECEIVING STREAM MONITORING REQUIREMENTS:

Permitted Feature SM1 – Upstream
Facilities with a design flow greater than 100,000 gallons per day are required to sample their effluent quarterly for Total Phosphorus and Total Nitrogen per 10 CSR 20-7.015(9)(D)7. Upstream monitoring for these parameters is necessary to determine background concentrations in order to complete calculations related to future effluent limit derivation where necessary or appropriate.

Permitted Feature SM2 – Downstream
This permit includes downstream hardness monitoring in order to develop a site-specific hardness for determining reasonable potential and calculating hardness-dependent metals limits.

Receiving Water Body's Water Quality
Currently, no stream survey has been conducted by the Department. When a stream survey is conducted, more information may be available about the receiving stream.

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

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

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

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

☒ - Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

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

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

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

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

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

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

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

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

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

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

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

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

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:
The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online. In an effort to aid facilities in the reporting of applicable information electronically, the Department has created several new forms including operational control monitoring forms and an I&I location and reduction form. These forms are for optional use and can be found on the Department's website at the following locations:

Operational Monitoring Lagoon: http://dnr.mo.gov/forms/780-2801-f.pdf
Operational Monitoring Mechanical: http://dnr.mo.gov/forms/780-2800-f.pdf
I&I Report: http://dnr.mo.gov/forms/780-2690-f.pdf

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

☒ - The permittee/facility is currently using the eDMR data reporting system.

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

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

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:
- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

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

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

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

☒ - 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. Please see **APPENDIX – RPA RESULTS.**

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

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

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

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

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

☒ - At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at http://dnr.mo.gov/pubs/pub2574.htm. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

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

A SOC is not allowed:

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

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

☒ - The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia. The permit for this facility issued on October 1, 2016 included new effluent limitations for ammonia, and a 5 year schedule to attain compliance with those final effluent limitations. The City plans to construct a new treatment facility and requested a time extension to the existing schedule; therefore, the schedule of compliance has been established at 6 years. Compliance must be achieved by October 1, 2022. Information provided by the City suggested the cost for the new treatment facility will be approximately $4,000,000. This is significantly less than the estimated cost for upgrades in the previous cost analysis; therefore, the previous cost analysis remains adequate. Please see the Cost Analysis for Compliance attached as an appendix to the permit for further detail on how the socio-economic status of the community has impacted this SOC.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:

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

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

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee

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

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

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

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

☒ - At this time, the permittee is not required to develop and implement a SWPPP as the facility submitted a No Exposure Certification form.

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

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

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

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

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

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

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

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

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

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

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

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

☒ - 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_5 whether or not its design flow is being exceeded.
☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☒ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

40 CFR 122.41(M) - BYPASSES:
The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from "bypassing" untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

☒ - This facility does not anticipate bypassing.

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

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

☒ - This facility discharges to a 303(d) listed stream. The Meramec River (P) (2183) is listed on the 2016 Missouri 303(d) List for *E. coli* and Lead. Old Lead belt tailings are listed as the source of the lead; however, the source for the *E. coli* impairment is unknown. This facility has the potential to contribute to the *E. coli* impairment. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.

Part VI – Effluent Limits Determination

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

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

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	1/week	monthly	T
BOD_5	mg/L	1		45	30	45/30	1/week	monthly	C
TSS	mg/L	1		45	30	45/30	1/week	monthly	C
Escherichia coli **	#/100mL	1, 3		630	126	630/126	1/week	monthly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	*		*	*/*	1/week	monthly	G
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	36.6		9.3	36.6/9.3	1/week	monthly	G
Oil & Grease	mg/L	1, 3	15		10	15/10	1/month	monthly	G
Total Nitrogen	mg/L	1	*		*	*/*	1/quarter	quarterly	G
Total Phosphorus	mg/L	1	*		*	*/*	1/quarter	quarterly	G
Cadmium, Total Recoverable	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Chromium III, Total Recoverable	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Chromium VI, Total Dissolved	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Copper, Total Recoverable	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Lead, Total Recoverable	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Nickel, Total Recoverable	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Zinc, Total Recoverable	µg/L	1	*		*	*/*	1/quarter	quarterly	G
Acute Whole Effluent Toxicity	TUa	1, 9	*			*	1/year	annually	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			*	1/permit cycle	1/permit cycle	C

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

PARAMETER	Unit	Basis for Limits	Monthly Avg Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
BOD_5 Percent Removal	%	1	85	85	1/month	monthly	M
TSS Percent Removal	%	1	85	85	1/month	monthly	M

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

**** - C = 24-hour composite
G = Grab
T = 24-hr. total
E = 24-hr. estimate
M = Measured/calculated

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

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

- **Biochemical Oxygen Demand (BOD_5).** 45 mg/L as a Weekly Average and 30 mg/L as a Monthly Average. Please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.** The Water Quality Review Sheet from 2004 established a secondary treatment level for the aerated lagoon. Please see **APPENDIX – WATER QUALITY REVIEW SHEET.**

- **Total Suspended Solids (TSS).** 45 mg/L as a Weekly Average and 30 mg/L as a Monthly Average. Please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.** The Water Quality Review Sheet from 2004 established a secondary treatment level for the aerated lagoon. Please see **APPENDIX – WATER QUALITY REVIEW SHEET.**

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 mL as a geometric mean and Weekly Average of 630 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

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

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

Summer: April 1 – September 30
Due to permit synchronization, the previous permit cycle was reduced to a time period of less than 5 years. Therefore, all Reasonable Potential Analysis (RPA) results from the short term permit have been carried over to this permit. The previous permit writer conducted a RPA using past monitoring data submitted by the permittee. It was determined that there is no reasonable potential to cause an excursion of water quality standards for Ammonia in the receiving stream. Therefore monitoring only is required for the summer designated months to collect data over the permit cycle so this determination can be reassessed during the next renewal. Please see **Appendix – RPA Results** for more information.

Winter: October 1 – March 31
Chronic WLA: $C_e = ((4.34 + 106.3)1.5 – (106.3 * 0.01))/4.34$
$C_e = 78.8$ mg/L

Acute WLA: $C_e = ((4.34 + 8.798)12.1 – (8.798 * 0.01))/4.34$
$C_e = 36.6$ mg/L

$LTA_c = 78.8$ mg/L (0.639) = 50.3 mg/L [CV = 1.12, 99^{th} Percentile, 30 day avg.]
$LTA_a = 36.6$ mg/L (0.185) = 6.78 mg/L [CV = 1.12, 99^{th} Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 6.78 mg/L (5.40) = 36.6 mg/L [CV = 1.12, 99^{th} Percentile]
AML = 6.78 mg/L (1.37) = 9.3 mg/L [CV = 1.12, 95^{th} Percentile, n =30]

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

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

- **Cadmium, Total Recoverable**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for cadmium. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Chromium III, Total Recoverable**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for chromium. Further, an established categorical industry has identified themselves which discharges process water from a chromium plating process. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Chromium VI, Total Dissolved**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for chromium. Further, an established categorical industry has identified themselves which discharges process water from a chromium plating process. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Copper, Total Recoverable**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for copper. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Lead, Total Recoverable**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for lead. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Nickel, Total Recoverable**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for nickel. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Zinc, Total Recoverable**. Monitoring only; sample results from expanded effluent testing submitted with the renewal application exceeded the water quality standard for zinc. Quarterly monitoring will allow sufficient data to conduct a reasonable potential analysis and to calculate appropriate effluent limits if applicable.

- **Acute Whole Effluent Toxicity**. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards. Where no mixing is allowed, the acute criterion must be met at the end of the pipe. However, when using an LC50 as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC50 value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration is 100% a limit of 1.0 TUa will apply. If more than 50% of the organisms survive at 100% effluent, the permittee should report TUa <1.

  Classified P with other than default Mixing Considerations, the AEC% is determined as follows:
  Acute AEC% = $(((4.34 + 9.208)/4.34)^{-1})*100 = 32\%$

  The Allowable Effluent Concentration (AEC) is 32% with the dilution series being: 100%, 66%, 32%, 16%, and 8%.

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

  (Classified P with other than default Mixing Considerations, the AEC% is determined as follows:
  Chronic AEC% = $(((4.34 + 92.08)/4.34)^{-1})*100 = 4.5\%$

  The Allowable Effluent Concentration (AEC) is 4.5% with the dilution series being: 36%, 18%, 9%, 4.5%, and 2.25%.

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

- **Biochemical Oxygen Demand (BOD_5) Percent Removal**. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for BOD_5.

- **Total Suspended Solids (TSS) Percent Removal**. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.

Sampling Frequency Justification:

Sampling and Reporting Frequency was retained from previous permit except for Ammonia. Per the request of the permittee, Ammonia sampling frequency was changed to weekly. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)6.A. Sampling for *E. coli* is set at weekly per 10 CSR 20-7.015(9)(D)6.C.

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

Acute Whole Effluent Toxicity

☒ - No less than **ONCE/YEAR:**

☒ -Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.

Chronic Whole Effluent Toxicity

☒ -No less than **ONCE/PERMIT CYCLE:**

☒ -POTW facilities with a design flow of greater than 1.0 million gallons per day, but less than 10 million gallons per day, shall conduct and submit to the Department a chronic WET test no less than once per five years.

Sampling Type Justification:

As per 10 CSR 20-7.015, BOD_5, TSS, and WET test samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, Ammonia as N, *E. coli*, Oil & Grease, metals, and Total Phosphorus. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia and TRC, and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia, Oil & Grease, metals, Total Nitrogen, and Total Phosphorus samples must be immediately preserved, these samples are to be collected as a grab.

PERMITTED FEATURE SM1 – INSTREAM MONITORING (UPSTREAM)

The monitoring requirements established in the below Monitoring Requirements Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including the monitoring requirements listed in this table..

MONITORING REQUIREMENTS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Nitrogen	mg/L	7	*		*	*/*	quarterly	quarterly	G
Total Phosphorus	mg/L	7	*		*	*/*	quarterly	quarterly	G

* - Monitoring requirement only.
*** - Parameter not previously established in previous state operating permit.

**** - C = 24-hour composite
G = Grab
M = Measured /calculated

Basis for Limitations Codes:

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

PERMITTED FEATURE SM1 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

- **Total Phosphorus and Total Nitrogen**. Facilities with a design flow greater than 100,000 gallons per day are required to sample their effluent quarterly for Total Phosphorus and Total Nitrogen per 10 CSR 20-7.015(9)(D)7. Upstream monitoring for these parameters is necessary to determine background stream concentrations in order to complete calculations that determine instream nutrient loading.

Sampling Frequency Justification:
The sampling and reporting frequency for Total Phosphorus and Total Nitrogen has been established to match the required sampling frequency of these parameters in the effluent.

Sampling Type Justification
As Total Phosphorus and Total Nitrogen samples must be immediately preserved; these samples are to be collected as a grab.

PERMITTED FEATURE SM2 – INSTREAM MONITORING (DOWNSTREAM)

The monitoring requirements established in the below Monitoring Requirements Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including the monitoring requirements listed in this table.

MONITORING REQUIREMENTS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Hardness	mg/L	1, 3	*		*	*/*	monthly	monthly	G

* - Monitoring requirement only.
*** - Parameter not previously established in previous state operating permit.

**** - C = 24-hour composite
G = Grab
M = Measured /calculated

Basis for Limitations Codes:

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

PERMITTED FEATURE SM2 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

- **Total Hardness**. Monitoring only requirement as the metals parameters contained in the permit are hardness based. This data will be used in the next permit renewal.

Sampling Frequency Justification:
The sampling and reporting frequency for Total Hardness has been established to match the required sampling frequency of the metals parameters in the effluent.

Sampling Type Justification:
As Total Hardness samples must be immediately preserved; these samples are to be collected as a grab.

OUTFALL #004 – 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 recent Report of Compliance Inspection dated September 20, 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 the secondary treatment technology based effluent limits established in this permit and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

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

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

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for

permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.

(E) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.

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

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

Part VII – Cost Analysis for Compliance

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

☒ - The 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 VIII – Administrative Requirements

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

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. 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 3rd Quarter of calendar year 2022.

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

☒ - The Public Notice period for this operating permit was from March 16, 2018 to April 16, 2018. Due to comments received by the City on April 4, 2018, special condition #7 has been updated to require "reporting limits" instead of "detection limits". Also, the City plans to construct a new treatment facility and requested a time extension to the existing schedule; therefore, the schedule of compliance has been established at 6 years. No other changes were made at this time.

DATE OF FACT SHEET: FEBRUARY 2, 2018

COMPLETED BY:

SAMANTHA OSTMANN, ENVIRONMENTAL SPECIALIST
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WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	3
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	3
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	-
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	-
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
PRELIMINARY TREATMENT – Headworks		
Screening and/or comminution	3	3
Grit removal	3	-
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	-
Combined sedimentation/digestion	5	-
Chemical addition (except chlorine, enzymes)	4	-
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Push – button or visual methods for simple test such as pH, Settleable solids	3	-
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	-
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	-
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	-
Land Disposal – low rate	3	-
High rate	5	-
Overland flow	4	-
Total from page **ONE (1)**	----	20

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	-
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	2
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	-
Raw wastes subject to toxic waste discharge	6	-
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	-
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	-
Stabilization ponds without aeration	5	-
Aerated lagoon	8	8
Advanced Waste Treatment Polishing Pond	2	-
Chemical/physical – without secondary	15	-
Chemical/physical – following secondary	10	-
Biological or chemical/biological	12	-
Carbon regeneration	4	-
DISINFECTION		
Chlorination or comparable	5	-
Dechlorination	2	-
On-site generation of disinfectant (except UV light)	5	-
UV light	4	4
SOLIDS HANDLING – SLUDGE		
Solids Handling Thickening	5	-
Anaerobic digestion	10	-
Aerobic digestion	6	-
Evaporative sludge drying	2	-
Mechanical dewatering	8	-
Solids reduction (incineration, wet oxidation)	12	-
Land application	6	-
Total from page **TWO (2)**	----	14
Total from page **ONE (1)**	---	20
Grand Total	---	34

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

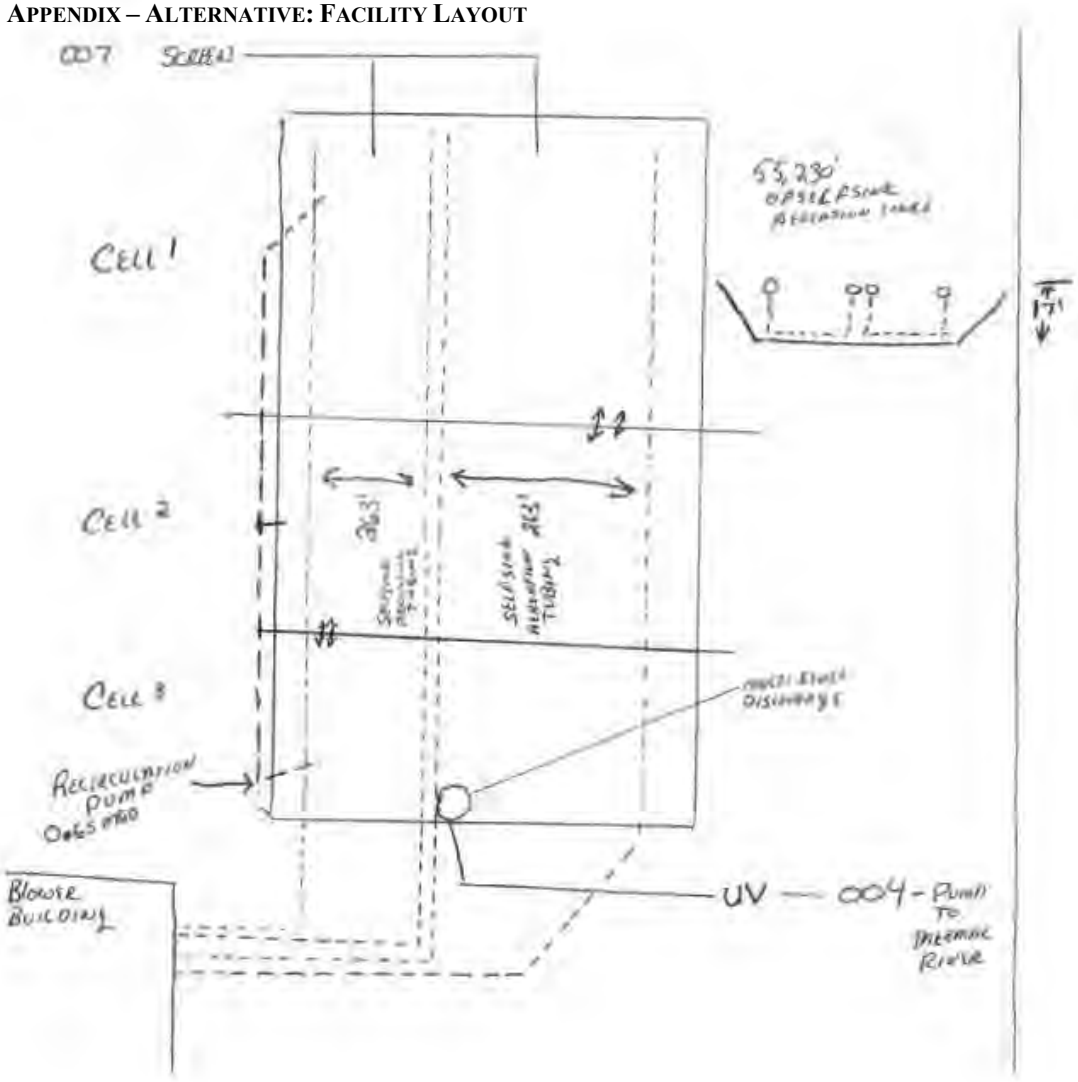
APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	10.28	1.5	1.23	76.00	23/0.25	2.10	1.35	NO
Total Ammonia as Nitrogen (Winter) mg/L	12.1	19.32	3.1	2.30	76.00	33.4/0.25	1.12	1.75	YES

N/A – Not Applicable
* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.
*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.
RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).
n – Is the number of samples.
MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.
RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

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

APPENDIX – ALTERNATIVE: FACILITY LAYOUT



APPENDIX – ALTERNATIVE: FACILITY MAP

APPENDIX – COST ANALYSIS FOR COMPLIANCE:

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

Eureka WWTF, Permit Renewal
City of Eureka
Missouri State Operating Permit #MO-0039659

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."

This cost analysis is based on data available to the Department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City's financial and socioeconomic situation. The financial questionnaire available to permittees on the DNR website (http://dnr.mo.gov/forms/780-2511-f.pdf) should have been submitted with the permit renewal application. If it was not received with the renewal application, the Department sent a request to complete it with the welcome letter. The Department currently uses software to estimate the cost for reconstruction of a treatment plant titled CAPDETWORKS (CapDet). CapDet is a preliminary design and costing software program from Hydromantis[1] for wastewater treatment plants that uses national indices, such as the Marshall and Swift Index and Engineering News Records Cost Index for pricing in development of capital, operating, maintenance, material, and energy costs for each treatment technology. As the program works from national indices and each community is unique in its budget commitments and treatment design, the estimated costs are expected to be higher than actual costs. The cost estimates located within this document are for the construction of a brand new treatment facility or system that is the most practical to facilitate compliance with new requirements. 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 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 table below summarizes the results of this cost analysis for the City of Eureka. The practical result of this analysis is to incorporate a long compliance schedule into the permit in order to mitigate adverse impact to distressed populations resulting from the costs of upgrading the wastewater treatment facility.

Cost Analysis for Compliance Summary Table

Estimated present worth to upgrade to an oxidation ditch	Median Household Income (MHI) for the State of Missouri*	Estimated monthly cost per user as a percent of MHI
$14,219,632	$49,008	0.47%

* Due to the fact that the Median Household Income of the City of Eureka ($88,829) is higher than the State of Missouri's Median Household income, the State of Missouri's Median Household Income of $49,008 has been used to complete this analysis.

Current Facility Description: Influent lift station / bar screen / three-cell aerated lagoon / UV disinfection / sludge is retained in lagoon

Flow evaluated: 2.8 MGD

Residential Connections:	not provided by permittee
Commercial Connections:	not provided by permittee
Industrial Connections:	not provided by permittee
Total Connections for this facility:	3,743*

*Connections obtained from the Department's Fee Tracking System

New Permit Requirements:

The permit requires compliance with new effluent limitations for ammonia, which may require the design, construction and operation of different treatment technology. The cost assumptions in this cost analysis anticipate complete replacement of the existing treatment facility. To calculate the estimated user cost per 5,000 gallons, the Department used the equations currently being used in the Financial Assistance Center's rate calculator. The equations account for replacement of equipment during the life of the treatment facility, debt retirement, capital costs, and an inflation factor. The calculator evaluates multiple technologies through CapDet at a range of flows, then, using a linear interpolation, develops a spreadsheet outlining high and low costs for treatment plants. For this analysis the Department has selected the mechanical treatment technology that could be the most practical solution to meet the new requirements for the community. Because the methods used to derive the analysis estimate costs that are greater than actual costs associated with an upgrade, it reflects a conservative estimate anticipated for a community. An overestimation of costs is due to the fact that it is not possible for the permit writer to determine what existing equipment and structures will be reused in the upgraded facility before an engineer completes a facility design.

The permit also requires compliance with new monitoring requirements for metals, total hardness, total nitrogen, total phosphorus, and chronic WET testing. The permit requires a SWPPP be develop and implemented. BOD_5 and TSS sampling frequencies have been increased from monthly to weekly.

The size of the facility evaluated for upgrades was chosen based on the permitted design flow. If significant population growth is expected in the community, or if a significant portion of the flow is due to I&I, the flows used in the Facility Plan prepared by a consulting engineer may be different than this flow.

Anticipated Costs Associated with Complying with the New Requirements:

Costs associated with mechanical treatment:
The costs estimated in CAPDETWORKS are associated with a complete reconstruction of a new treatment plant. The total present worth for complete replacement of the existing treatment facility in order to meet new ammonia effluent limits is estimated at $14,219,632 (*CAPDETWORKS cost estimator was used*). This cost, if financed through user fees, might cost each household approximately $19.03 per month. The Department has estimated the construction and treatment costs for an oxidation ditch. The treatment type has been set to meet effluent ammonia limits of less than 1.0 mg/L and losing stream criteria for BOD_5 and TSS. Sludge handling and sludge treatment were not included in the capital, operations, maintenance, and present worth cost estimations as there are multiple ways for sludge handling to occur, including reuse of existing sludge equipment. It is the Department's opinion that and oxidation ditch is the most practical mechanical treatment technology for your community based on the current design flow. A more detailed engineering and design report conducted for your specific facility will be completed by your hired engineer. This may reflect a different type of treatment option than what is described within this analysis and may include additional collection system work or additional upgrades at the treatment plant.

Cost associated with new sampling requirements:
The costs estimated for new sampling requirements are as follows:

New effluent parameters:	Estimated annual cost:	New instream parameters:	Estimated annual cost:
Total Phosphorus	$96	Total Phosphorus	$96
Total Nitrogen	$292	Total Nitrogen	$292
Cadmium	$72	Total Hardness	$80
Chromium III	$68		
Chromium VI	$80	Increased sampling:	
Copper	$68	BOD_5	$1,640
Lead	$68	TSS	$640
Nickel	$68		
Zinc	$68	**Total annual cost:**	**$3,628**

The Department estimates the cost of a chronic WET test to be $1,550 or $310 per year over five years. The estimated cost of the development and implementation of a SWPPP is $10,000. That accounts for a $20/hour employee working 500 hours. The cost would be $2,000 annually over five years.

The total costs for these new permit requirements is $5,938 annually. If financed through user fees, it might cost each household an extra $0.13 per month. Due to the minimal cost associated with this new requirement, the Department anticipates an extremely low to no rate increase will be necessary that could impact individuals or households of the community.

This cost analysis does not dictate that a permittee will upgrade their facility, or how they will comply with the new permit requirements. For any questions associated with the *CAPDETWORKS cost estimator*, please contact the Engineering Section at (573) 751-6621.

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

Current User Rates:	$6.50
Rate Capacity or Pay as You Go Option:	not provided by permittee
Municipal Bond Rating (if applicable):	not provided by permittee
Bonding Capacity: *(General Obligation Bond capacity allowed by constitution:* *cities=up to 20% of taxable tangible property* *sewer districts or villages=up to 5% of taxable tangible property)*	not provided by permittee
Current outstanding debt for the City:	not provided by permittee
Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure:	not provided by permittee

Though the Department has made attempts to gather financial information from the City of Eureka; no information has been provided. The Department has relied heavily on readily available data to complete this analysis.

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

A Current Costs

Current operating costs (exclude depreciation):	not provided by permittee
Current user rate:	$6.50

B Estimated Costs for Mechanical Plant Pollution Control Option

Estimated total present worth of pollution control*:	$14,219,632
Estimated capital cost of pollution control**:	$9,646,400
Annual cost of operation and maintenance***:	$366,968
Estimated resulting user cost per household per month****:	$19.03
Estimated resulting user cost per household per month plus the amount within the current user rate used toward payments on outstanding debt:	not provided by permittee
Median household income(MHI)*****[2]:	$88,829
MHI for State of Missouri:	$49,008
Cost per household as a percent of median household income[3]:	0.47%
Estimated cost per household per month plus the amount within the current user rate used toward payments on outstanding debt as a percent of median household income:	not provided by permittee

CAPDET estimates the total present worth to finance a new mechanical treatment facility to be approximately $14,219,632. If financed through user costs, the future user costs have the potential to be estimated at $19.03 per month. These costs assume a 5% interest rate over 20 years for mechanical treatment. It is the Department's opinion that an oxidation ditch is the most practical mechanical treatment option for the design flow of this facility. All treatment technologies were set to meet effluent ammonia limits of less than 1.0 mg/L and losing stream criteria for BOD_5 and TSS. Sludge handling, sludge treatment, and disinfection have not been included in the capital, operations and maintenance, and present worth cost estimations.

* Total Present Worth includes a five percent interest rate to construct and perform annual operation and maintenance of the new treatment plant over the term of the loan.

** Capital Cost includes project costs from CapDet with design, inspection and contingency costs.

*** O&M cost shown in Table B includes operations, maintenance, materials, chemical and electrical costs for the facility on an annual basis. It includes items that are expected to replace during operations, such as pumps. O&M is estimated between 15% and 45% of the user cost.

**** The Estimated User Cost shown in Table B is composed of two factors, Operation & Maintenance (O&M), and Debt Retirement Costs.

***** Due to the fact that the Median Household Income of the City of Eureka is higher than the State of Missouri's Median Household income, the State of Missouri's Median Household Income of $49,008 has been used to complete this analysis. The resulting cost per household as a percent of MHI is 0.47% using the state's MHI. The resulting cost per household as a percent of MHI will be used as the residential indicator in Criteria 7 below.

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

The investment in wastewater treatment will provide several social, environmental and economic benefits. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri's water quality standards fulfill the goals of restoring and maintaining the chemical, physical and biological integrity of the receiving stream; and, where attainable, to achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife and recreation in and on the water.

Total Ammonia Nitrogen Treatment
The technologies evaluated by CapDet are a sequencing batch reactor, extended aeration mechanical plant with triangular basin, and an extended aeration oxidation ditch. All treatment technologies were designed to meet effluent ammonia of less than 1.0 mg/L and losing stream criteria for BOD_5 and TSS of less than 10 mg/L and have demonstrated the capability of meeting the 2013 ammonia criteria when operated and maintained at a proper level. Please see the Water Protection Program fact sheet titled "Changes to the Water Quality Standard for Ammonia" at http://dnr.mo.gov/pubs/pub2481.htm.

Nutrient Monitoring
Nutrients are mineral compounds that are required for organisms to grow and thrive. Of the six (6) elemental macronutrients, Nitrogen and Phosphorus are generally not readily available and limit growth of organisms. Excess nitrogen and phosphorus will cause a shift in the ecosystem's food web. Once excess nitrogen and phosphorous are introduced into a waterbody, some species' populations will dramatically increase, while other populations will not be able to sustain life. Competition and productivity are two factors in which nutrients can alter aquatic ecosystems and the designated uses of a waterbody. For example, designated uses, such as drinking water sources and recreational uses become impaired when algal blooms take over a waterbody. These blooms can cause foul tastes and odors in the drinking water, unsightly appearance, and fish mortality in the waterbody. Some algae also produce toxins that may cause serious adverse health conditions such as liver damage, tumor promotion, paralysis, and kidney damage. The monitoring requirements for Nitrogen and Phosphorus have been added to the permit to provide data regarding the health of the receiving stream's aquatic life. A healthy ecosystem is beneficial as it provides reduced impacts on human and aquatic health as well as recreational opportunities.

Stormwater Pollution Prevention Plan
Stormwater runoff is water from rain or snowmelt that does not immediately infiltrate into the ground and flows over or through natural or man-made storage or conveyance systems. When undeveloped areas are converted to land uses with impervious surfaces such as buildings, parking lots, and roads, the natural hydrology of the land is altered and can result in increased surface runoff rates, volumes, and pollutant loads. Stormwater runoff picks up industrial pollutants and typically discharges them directly into nearby waterbodies or indirectly via storm sewer systems. Runoff from areas where industrial activities occur can contain toxic pollutants (e.g., heavy metals and organic chemicals) and other pollutants such as trash, debris, and oil and grease, when facility practices allow exposure of industrial materials to stormwater. This increased flow and pollutant load can impair waterbodies, degrade biological habitats, pollute drinking water sources, and cause flooding and hydrologic changes to the receiving water, such as channel erosion. Industrial facilities typically perform a portion of their activities in outdoor areas exposed to the elements. This may include activities such as material storage and handling, vehicle fueling and maintenance, shipping and receiving, and salt storage, all of which can result in pollutants being exposed to precipitation and capable of being carried off in stormwater runoff. Also, facilities may have performed industrial activities outdoors in the past and materials from those activities still remain exposed to precipitation. In addition, accidental spills and leaks, improper waste disposal, and illicit connections to storm sewers may also lead to exposure of pollutants to stormwater.

A SWPPP is a written document that identifies the industrial activities conducted at the site, including any structural control practices, which the industrial facility operator will implement to prevent pollutants from making their way into stormwater runoff. The SWPPP also must include descriptions of other relevant information, such as the physical features of the facility, and procedures for spill prevention, conducting inspections, and training of employees. The SWPPP is intended to be a "living" document, updated as necessary, such that when industrial activities or stormwater control practices are modified or replaced, the SWPPP is similarly revised to reflect these changes.

(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 did not provide the Department with information, nor could it be found through readily available data.

(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[4-6]:

Potentially Distressed Populations – City of Eureka	
Total Population	10,270
Unemployment	4.6%
Adjusted Median Household Income (MHI)*	$88,829
Percent Change in MHI (2000-2012)	+19.6%
Percent Population Growth/Decline (2000-2012)	+33.6%
Median Age in Years	36.7
Percent of Households in Poverty	3.6%
Percent of Households Relying on Food Stamps	5.2%

*State's MHI of $49,008 was used in calculations in this cost analysis

Opportunity for cost savings or cost avoidance:

- If available, connection to a larger centralized sewer system in the area may be more cost effective for the community.
- An opportunity may exist for the relocation of the point of discharge to a receiving stream capable of a greater mixing zone.
- The permittee may apply for State Revolving Fund (SRF) financial support in order to help fund a Capital Improvements Plan. Other loans and grants also exist for which the facility may be eligible. Contact information for the Department's Financial Assistance Center (FAC) and more information can be found on the Department's website at http://dnr.mo.gov/env/wpp/srf/wastewater-assistance.htm.

Opportunity for changes to implementation/compliance schedule, new technology, site specific criteria, use attainability analysis:

- The facility may propose changes to the schedule of compliance based on their own cost estimate or financial information.
- An integrated plan may be an appropriate option if they community needs to meet other environmental obligations as well as the new requirements within this permit. The integrated plan needs to be well thought out with specific timeframes built into the management plan that the municipality can reasonably commit to. The plan should be designed that will allow each municipality to meet their Clean Water Act obligations by maximizing their infrastructure improvement dollars through the appropriate sequencing of work.
- If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, the permittee may use Factor 6 of the Use Attainability Analysis (UAA) 40 CFR 131.10(g)(6) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. This process could potentially become expensive in itself.

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

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;

Secondary indicators for consideration:

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	not provided
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	not provided
Unemployment Rate	>1 below Missouri average of 4.1%	± 1 of Missouri average of 4.1%	>1 above Missouri average of 4.1%	2
Median Household Income	More than 25% above Missouri MHI ($49,008)	± 25% of Missouri MHI ($49,008)	More than 25% below Missouri MHI ($49,008)	3
Percent of Households in Poverty*	>10 below Missouri average of 11.7%	± 10 of Missouri average of 11.7%	>10 above Missouri average of 11.7%	2
Percent of Households Relying on Food Stamps*	>5 below Missouri average of 10.6%	± 5 of Missouri average of 10.6%	>5 above Missouri average of 10.6%	3
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	not provided
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	not provided

* Financial Capability Indicators are specific to the State of Missouri

Financial Capability (FCI) Indicators Average Score: 2.5
Mechanical Plant Residential Indicator (RI, from Criteria #2 above): 0.47%

Financial Capability Matrix:

Financial Capability Indicators Score from above ↓	**Residential Indicator (User cost as a % of MHI)**		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%)	High (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	Medium Burden	High Burden

Estimated Financial Burden for Mechanical Plant: Low Burden

The resulting financial burden has been determined by comparing the Financial Capability Indicator score (FCI) with the Residential Indicator (RI) stated in Criteria #2. The cost associated with a mechanical plant could result in a Low financial burden placed on the community due to the Mid-Range FCI paired with the Low RI. Please see Criteria #2 for more information on the costs specific to each treatment technology.

(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 upgrade the facility and construct new control technologies and to increase sampling requirements.

The Department considered the eight (8) criteria presented in subsection 644.145.3 when evaluating the cost associated with the relevant actions. The Department estimates the resulting monthly user costs for complete replacement of the existing treatment facility in order to meet new ammonia effluent limits could be $19.03 for mechanical treatment. Using this analysis, the Department finds that an oxidation ditch is the most practical and affordable option for your community. The construction and operation of an oxidation ditch will ensure that the individuals within the community will not be required to make unreasonable sacrifices in their essential lifestyle or spending patterns or undergo hardships in order to make the projected monthly payments for sewer connections.

In accordance with 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. Therefore, based on this analysis the City of Eureka has received a five (5) year schedule of compliance for the design and construction of an oxidation ditch.

Suggested milestones to meet:

Year 1. Hire an engineer and evaluate rate structure and treatment plant
Year 2. Hold bond election, apply for State Revolving Fun loans and/or grants, and submit facility plan
Year 3. Apply for Construction Permit and close on loan
Year 4. Construction
Year 5. Complete construction

The schedule of compliance allows the community the first three years to hire an engineer, evaluate operations and rate structure, obtain an engineering report, hold a bond election, and close on a loan. At this time the community will know what the user rates will be based on the present worth of the chosen treatment type decided on by the community and the design engineer hired by the community. It is anticipated by the Department that rates will be increased to mitigate the cost of compliance of the new requirements. The Department is committed to reassessing the Cost Analysis for Compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time.

The remaining two years of the schedule give the community time to construct the facility and complete the project. If the community wishes to seek funding from the Department, please contact the Financial Assistance Center for more information. http://www.dnr.mo.gov/env/Wpp/srf/index.html

The Department is committed to reassessing the cost analysis for compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time. By working more closely with your community, the Department and permittees will be able to identify opportunities to extend the schedule of compliance, if appropriate. Because each community is unique, we want to make sure that you have the opportunity to consider all your options and tailor solutions to best meet your community's needs. The Department understands the economic challenges associated with achieving compliance, and is committed to using all available tools to make an accurate and practical finding of affordability for the communities in the State.

This determination is based on readily available data and may overestimate the financial impact on the community. The community's facility plan that is submitted as a part of the construction permit process includes a discussion of community details, what the community can afford, existing obligations, future growth potential, an evaluation of options available to the community with cost information, and a discussion on no-discharge alternatives. The cost information provided through the facility plan process, which is developed by the community and their engineer, is more comprehensive of the community's individual factors in relation to selected treatment technology and costing information.

References:

1. http://www.hydromantis.com/
2. The Median Household Income was found using the American Community Survey by the U.S. Census Bureau
3. (19.03/(49,008/12))100 = 0.47% (mechanical)
4. Unemployment data was obtained from Missouri Department of Economic Development (November 2015) – http://www.missourieconomy.org/pdfs/urel1511.pdf
5. Population trend data was obtained from online at: 2012 Census Bureau Population Data - http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=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 – WATER QUALITY REVIEW SHEET:

Water Quality Review Sheet

Determination of Effluent Limits

Facility Information

FACILITY NAME: Eureka Sewage Treatment Plant NPDES #: MO-0039659

FACILITY TYPE/DESCRIPTION: Proposed 2.8 MGD aerated lagoon (facility expansion)

ECOREGION: Ozark Highlands 8- DIGIT HUC: 07140102 COUNTY: St. Louis

Central Irregular Plains Osage Plains
Mississippi Alluvial Plains Ozark Highlands

LEGAL DESCRIPTION: NE NE Sec 31, T44N, R4E LATITUDE/LONGITUDE: New Outfall Location

WATER QUALITY HISTORY: Failure of WET test in 1999 is believed to be due to ammonia toxicity. DMRs indicate continuously high ammonia concentrations in effluent.

Outfall Characteristics

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	OTHER
004	4.34	Aerated Lagoon	Meramec River	

Receiving Waterbody Information

WATERBODY	CLASS	7Q10 (CFS)	*DESIGNATED USES	OTHER CHARACTERISTICS
Meramec River	P	306	AQL, CLF, IND, BTG, DWS, LWW, WBC	WBID: 2185

*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC), Protection of Warmwater Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS: City wants to expand facility and change current outfall location from Flat Creek to Meramec River. Current outfall location on Flat Creek has led to 305(b) designation of the stream not supporting beneficial uses. There are three outfalls listed on Flat River Creek, so the proposed outfall is labeled as 004. Ultraviolet Disinfection (UV) is also being added.

MIXING CONSIDERATIONS

7Q10 Calculation: USGS stream gauge data were used to calculate the seven (7)-day one (1)-in-ten (10)-year low flow (7Q10) for the Meramec River near Eureka, MO. The 7Q10 of a stream is the average minimum flow for seven (7) consecutive days that has a probable recurrence interval of once-in-ten (10) years.

Water Quality Review Sheet – Page 2

Determination of Effluent Limits

All available data from USGS-07019000 were used to generate 7-day low-flow values using the USGS SWSTAT 4.1 surface water statistics program. The resulting 7-day low-flows were fitted using the Log-Pearson Type III frequency distribution. A 7Q10 value of 306 cubic feet/second (cfs) was determined from this analysis (Appendix A.)

Mixing Zone (MZ). One-quarter (1/4) of the stream volume of flow; length one-quarter (1/4) mile [10 CSR 20-7.031(4)(A)5.B.(III)(a)]. MZ Volume of Flow = 76.5 cfs, Dilution Factor = 18.6:1

Zone of Initial Dilution (ZID). One-tenth (0.1) of the mixing zone width volume of flow [10 CSR 20-7.031(4)(A)5.B.(III)(b)]. ZID Volume of Flow = 7.65 cfs, Dilution Factor = 2.8:1

Permit Limits And Information

TMDL Watershed: (Y or N) [N] W.L.A. Study Conducted: (Y or N) [N] Disinfection Required: (Y or N) [Y] Disinfection Waiver: (Y, N, NA) [N]

OUTFALL# 004

Wet Test (Y or N): [Y] Frequency: Once/year A.E.C. 36% Limit: No significant mortality

PARAMETER	Units	Maximum Daily Limit	Weekly Average Limit	Average Monthly Limit	Monitoring Frequency	Sample type
Biochemical Oxygen Demand (BOD_5)	mg/L		45	30	Weekly	grab
Non-Filterable Residue	mg/L		45	30	Weekly	grab
pH	SU	6 – 9		6 – 9	Weekly	grab
Fecal Coliform	Col./100mL	1000		400	Weekly	grab
Ammonia as N (Summer)[1]	mg/L	23.3		11.6	Weekly	grab
Ammonia as N (Winter)[1]	mg/L	47.6		23.7	Weekly	grab
Total Nitrogen	mg/L			*	Monthly	grab
Total Phosphorous	mg/L			*	Monthly	grab

*** - Monitoring Requirement Only**

1 – Summer (Apr 1 – Oct 31) and Winter (Nov 1 – Mar 31) seasons taken from previous version of WQRS [M. Osborn, Date: 1/14/02, Revised: 2/28/03]

Receiving Water Monitoring Requirements

Site S1.

Parameter(s)	Sampling Frequency	Sample Type	Location
Dissolved Oxygen	Once/quarter	Grab	Immediately upstream of outfall
Ammonia Nitrogen	Once/quarter	Grab	
Non-filterable residue	Once/quarter	Grab	
Total nitrogen	Once/quarter	Grab	
Total Phosphorus	Once/quarter	Grab	

Site S2.

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen	Once/quarter	Grab	One-quarter (¼) mile downstream of outfall
Ammonia Nitrogen	Once/quarter	Grab	
Non-filterable residue	Once/quarter	Grab	
Total nitrogen	Once/quarter	Grab	
Total Phosphorus	Once/quarter	Grab	

Derivation and Discussion of Limits

Wasteload allocations were calculated using water quality criteria and the dilution equation below:

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

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow (cfs)
C_e = effluent concentration
Q_e = effluent flow (cfs)

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

Water quality based maximum daily and monthly average 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).

- **Biochemical Oxygen Demand (BOD_5)**. 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1.]

- **Non-Filterable Residue (NFR)**. 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1.]

- **pH**. pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015(8)(B)2.]

- **Fecal Coliform**. 400 colonies/100 mL monthly average, 1000 colonies/100 mL daily maximum [10 CSR 20-7.015(8)(B)4.A.]

- **Ammonia as Nitrogen**. Due to the absence of ammonia criteria for waters designated as cool-water fisheries in Missouri's Water Quality Standards, general warm-water fishery ammonia criteria should apply [10 CSR 20-7.031, Table B]. Background Ammonia as Nitrogen for the Meramec River near Eureka, MO = 0.25 mg/L

Season	Temp (°C)	pH (SU)	Total Ammonia CCC (mg/L)	Total Ammonia CMC (mg/L)
Summer	26	7.8	1.2	14.0
Winter	6	7.8	2.1	16.4

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

Summer

Ammonia as Nitrogen CCC = 1.2/1.2 = 1.0 mg/L
Ammonia as Nitrogen CMC = 14.0/1.2 = 11.7 mg/L

Chronic WLA: $C_e = ((4.34 + 76.5)1.0 - (76.5 * 0.25))/4.34$
C_e = 14.2 mg/L

Acute WLA: $C_e = ((4.34 + 7.65)11.7 - (7.65 * 0.25))/4.34$
C_e = 31.9 mg/L

LTA_c = 14.2 mg/L (0.527) = 7.48 [CV = 0.6, 99th Percentile]

MDL = 7.48 * 3.11 = 23.3 mg/L [CV = 0.6, 99th Percentile]
AML = 7.48 * 1.55 = 11.6 mg/L [CV = 0.6, 95th Percentile, n = 4]

Winter

Ammonia as Nitrogen CCC = 2.1/1.2 = 1.8 mg/L
Ammonia as Nitrogen CMC = 16.4/1.2 = 13.7 mg/L

Chronic WLA: $C_e = ((4.34 + 76.5)1.8 - (76.5 * 0.25))/4.34$
C_e = 29.1 mg/L

Acute WLA: $C_e = ((4.34 + 7.65)13.7 - (7.65 * 0.25))/4.34$
C_e = 37.4 mg/L

LTA_c = 29.1 mg/L (0.527) = 15.3 [CV = 0.6, 99th Percentile]

MDL = 15.3 * 3.11 = 47.6 mg/L [CV = 0.6, 99th Percentile]
AML = 15.3 * 1.55 = 23.7 mg/L [CV = 0.6, 95th Percentile, n = 4]

Season	Maximum Daily Limit (mg/L)	Average Monthly Limit (mg/L)
Summer	23.3	11.6
Winter	47.6	23.7

Reviewer: John Hoke
Date: 2/19/04
Unit Chief: Richard J. Laux

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data or anecdotal information are available that may affect the recommended monitoring and effluent limits, please forward these data and information to the author.

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

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

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. Definitions

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

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

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

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

2. Identification of Industrial Discharges

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

3. Application Information

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

4. Notice to the Department

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

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

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

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

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

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

SECTION A – GENERAL REQUIREMENTS

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

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

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

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

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

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

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

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

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

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

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

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

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

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

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

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

SECTION H – CLOSURE REQUIREMENTS

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

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

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

SECTION I – MONITORING FREQUENCY

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

TABLE 5

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

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

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

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

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

28554

RECEIVED
NOV 21 2017

MISSOURI DEPARTMENT OF NATURAL RESOURCES Water Protection Program
WATER PROTECTION PROGRAM

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
11/21/17	-0- DB.

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

- ☐ An operating permit for a new or unpermitted facility. Construction Permit # _____
  (Include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)
- ☒ An operating permit renewal: Permit #MO-00039659 Expiration Date 9-30-2017
- ☐ An operating permit modification: Permit #MO-_____ Reason: _____

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

2. FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE
EUREKA WASTEWATER TREATMENT FACILITY	636938 5233

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
TRUITT DRIVE AND FLATCREEK TRAIL	EUREKA	MO	63025

2.1 LEGAL DESCRIPTION (Facility Site): NE ¼ NE ¼ ¼ Sec. 31 , T 44N, R 4E COUNTY: ST LOUIS

2.2 UTM Coordinates Easting (X): 708568 Northing (Y): 4265832
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: MERMAC RIVER (P) (2185)

2.4 Number of Outfalls: 1 wastewater outfalls, 0 stormwater outfalls, 0 instream monitoring sites 0

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
CITY OF EUREKA		636 938 5233

ADDRESS	CITY	STATE	ZIP CODE
PO BOX 125	EUREKA	MO	63025

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

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

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

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

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

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
CITY OF EUREKA		

ADDRESS	CITY	STATE	ZIP CODE

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

5. OPERATOR

NAME	TITLE	CERTIFICATE NUMBER (IF APPLICABLE)
DAVID W RICKS	OPERATOR	10232

EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
EUREKAWWTP@YAHOO.COM	314 775 9638

6. FACILITY CONTACT

NAME	TITLE

EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE

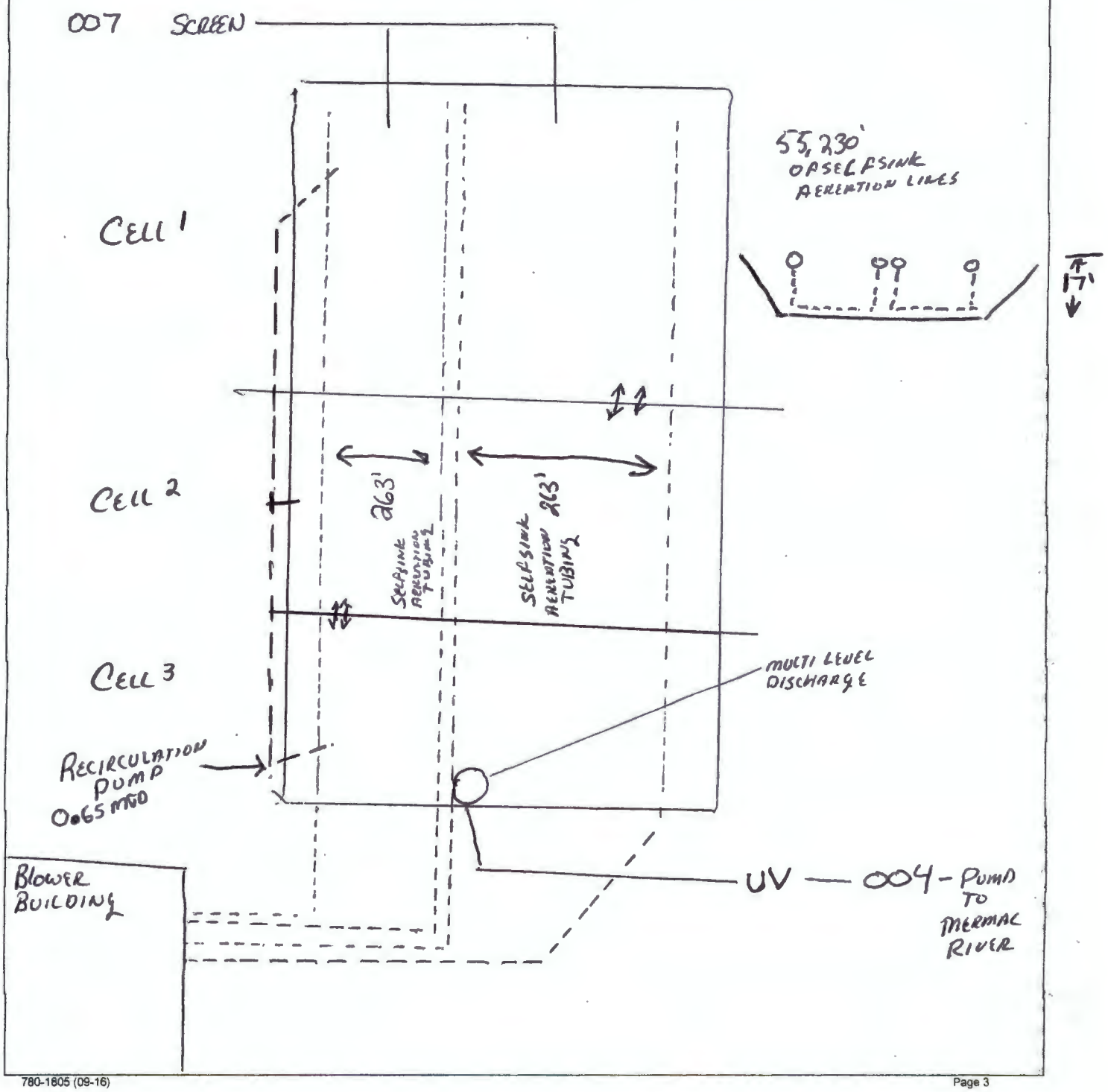
ADDRESS	CITY	STATE	ZIP CODE

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

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



FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

7.2 Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information.

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

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

7.4 Number of people presently connected or population equivalent (P.E.): _____ Design P.E. 27,500

7.5 Connections to the facility:

Number of units presently connected:

Homes _____ Trailers _____ Apartments _____ Other (including industrial) _____

Number of Commercial Establishments: _____

7.6 Design Flow 2.8 MGD | Actual Flow 1.6 MGD

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

Discharge will occur during the following months: ALL

How many days of the week will discharge occur? 24/7

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

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

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

7.9	Does the facility accept or process leachate from landfills?:	Yes ☐	No ☒
7.10	Is wastewater land applied? If yes, is Form I attached?	Yes ☐ Yes ☐	No ☒ No ☐
7.11	Does the facility discharge to a losing stream or sinkhole?	Yes ☐	No ☒
7.12	Has a wasteload allocation study been completed for this facility?	Yes ☐	No ☒

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

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

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART A – BASIC APPLICATION INFORMATION

9. SLUDGE HANDLING, USE AND DISPOSAL

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

9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 400 Actual Dry Tons/Year

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

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

9.4 Type of storage:

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

9.5 Sludge Treatment:

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

9.6 Sludge use or disposal:

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

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

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

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

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

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

END OF PART A

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Length of sanitary sewer collection system in miles
57

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

11. BYPASSING

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

12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

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

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

13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

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

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

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

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)		S.U.		S.U.	
pH (Maximum)		S.U.		S.U.	
Flow Rate		MGD		MGD	

*For pH report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
		Conc.	Units	Conc.	Units	Number of Samples		
Conventional and Nonconventional Compounds								
BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD_5		mg/L		mg/L			
	$CBOD_5$		mg/L		mg/L			
E. COLI			#/100 mL		#/100 mL			
TOTAL SUSPENDED SOLIDS (TSS)			mg/L		mg/L			
AMMONIA (as N)			mg/L		mg/L			
CHLORINE* (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN			mg/L		mg/L			
OIL and GREASE			mg/L		mg/L			
OTHER			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

See attached

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART C – CERTIFICATION

15. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit http://dnr.mo.gov/env/wpp/edmr.htm to access the Facility Participation Package.

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

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

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

16. CERTIFICATION

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
CRAIG E. SABO	CITY ADMINISTRATOR

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
636-938-5233

DATE SIGNED
11-17-17

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

Send Completed Form to:

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102-0176

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

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

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

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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

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

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

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

See ATTACHED

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
CHLOROBENZENE											
CHLORODIBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLORO-ETHANE											
1,2-DICHLORO-ETHANE											
TRANS-1,2-DICHLOROETHYLENE											
1,1-DICHLORO-ETHYLENE											
1,2-DICHLORO-PROPANE											
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE											
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRA-CHLOROETHANE											
TETRACHLORO-ETHANE											
TOLUENE											
1,1,1-TRICHLORO-ETHANE											
1,1,2-TRICHLORO-ETHANE											
TRICHLORETHYLENE											
VINYL CHLORIDE											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL											
2-CHLOROPHENOL											
2,4-DICHLOROPHENOL											
2,4-DIMETHYLPHENOL											
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL											
2-NITROPHENOL											
4-NITROPHENOL											

See ATT attached

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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

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

ATTACHED

SEE

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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

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

See ATT Attached

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

END OF PART D

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

SEE ATTACHED

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL		
FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART E – TOXICITY TESTING DATA

18. TOXICITY TESTING DATA

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

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

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

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

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

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

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART E – TOXICITY TESTING DATA

18. TOXICITY TESTING DATA (continued)

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

Is the treatment works involved in a toxicity reduction evaluation? ☐ Yes ☐ No
If yes, describe:

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

Date Submitted (MM/DD/YYYY)

Summary of Results (See Instructions)

END OF PART E

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

19. GENERAL INFORMATION

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

☐ Yes ☐ No

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

Number of non-categorical SIUs ____

Number of CIUs ____

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

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

NAME			
MAILING ADDRESS	CITY	STATE	ZIP CODE

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

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

Principal Product(s):

Raw Material(s):

20.3 Flow Rate

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

gpd ☐ Continuous ☐ Intermittent

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

gpd ☐ Continuous ☐ Intermittent

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

a. Local Limits ☐ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☐ No

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

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

☐ Yes ☐ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

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

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

21.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

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

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

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

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

22.4 Waste Treatment

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

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

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

If intermittent, describe the discharge schedule:

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART G – COMBINED SEWER SYSTEMS

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

23. GENERAL INFORMATION

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

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

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

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

23.3 Percent of collection system that is combined sewer

23.4 Population served by combined sewer collection system

23.5 Name of any satellite community with combined sewer collection system

24. CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT

24.1 Description of Outfall

a. Outfall Number
b. Location

c. Distance from Shore (if applicable) _____ ft
d. Depth Below Surface (if applicable) _____ ft
e. Which of the following were monitored during the last year for this CSO?

☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO
☐ CSO Flow Volume ☐ Receiving Water Quality

f. How many storm events were monitored last year?

24.2 CSO Events

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

24.3 Description of Receiving Waters

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

24.4 CSO Operations

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

END OF PART G

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

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY, Form 780-1805

(Facilities less than or equal to 100,000 gallons per day of domestic waste must use Form B, 780-1512.)

PART A – BASIC APPLICATION INFORMATION

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

1.1 **Fees Information:**

DOMESTIC OPERATING PERMIT FEES – PRIVATE

Annual operating permit fees are based on flow.

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

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

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

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, public sewer district, public water district, or other publicly owned treatment works) Annual fee is based on number of service connections. 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 percent of the facility's annual operating fee for a major modification.

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

2.1 Self-explanatory.

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

2.3-2.4 Self-explanatory.

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

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

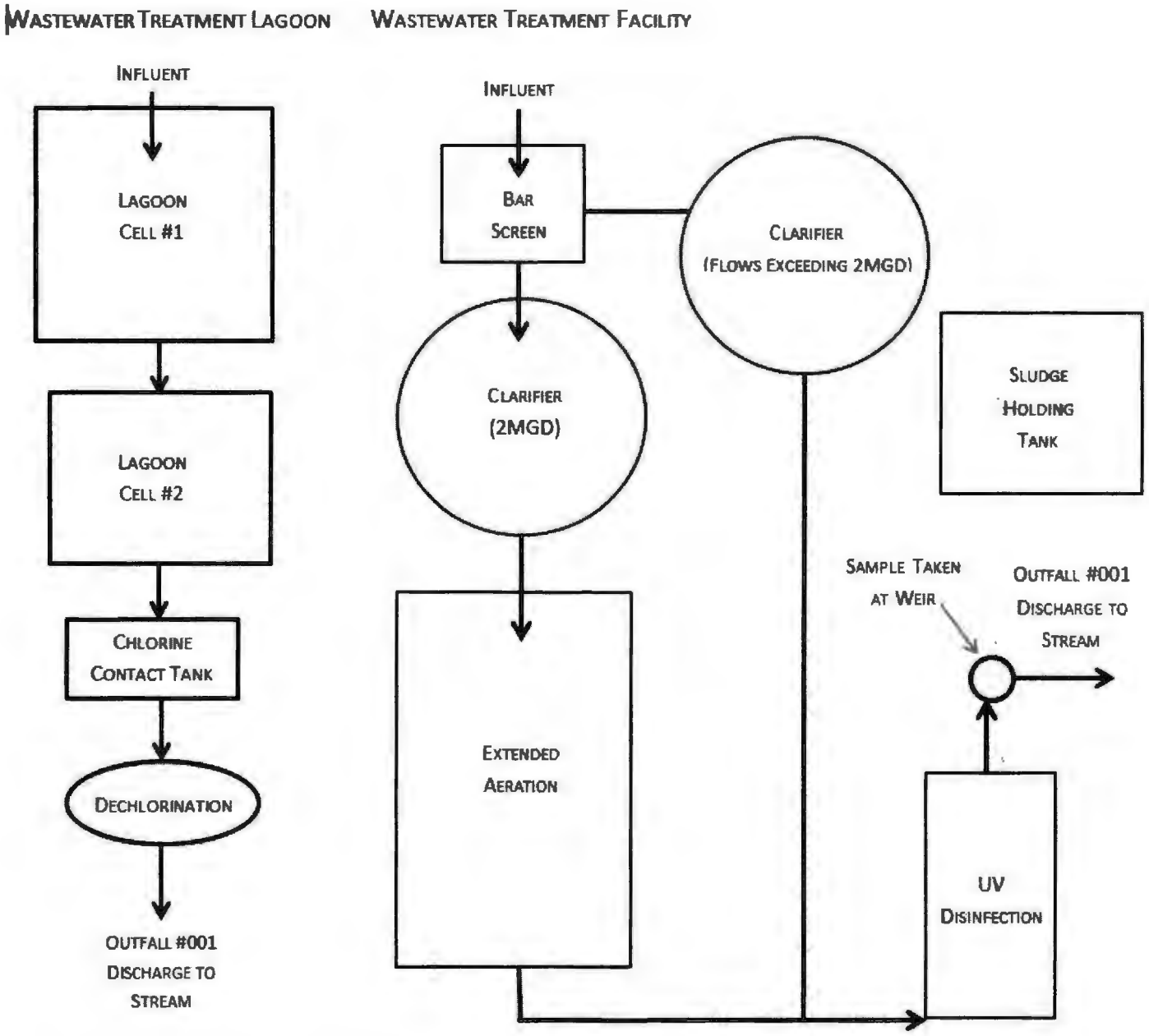
3.2-3.4 Self-explanatory.

4. Continuing Authority – Provide information for the permanent organization which will serve as the continuing authority for the operation, maintenance, and modernization of the facility. The regulatory requirement regarding continuing authority is available at http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf or contact the Department of Natural Resources Water Protection Program (see contact information below).

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

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

7.1 Process Flow Diagram Examples



7.2 A topographic map is available on the web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.
7.3 For Standard Industrial Codes visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the Department of Natural Resources' Water Protection Program.
7.4-7.8 Self – explanatory.
7.9 If wastewater is land-applied submit form I: www.dnr.mo.gov/forms/780-1686-f.pdf.
7.10-8. Self-explanatory
9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.
9.2-9.9 Self – explanatory.

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

PART B – ADDITIONAL APPLICATION INFORMATION

10.-14. Self-explanatory

PART C – CERTIFICATION

15. Electronic Discharge Monitoring Report (eDMR) Submission System – Visit the eDMR site at http://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: http://www.broadbandmap.gov/. Please contact the Department if you need assistance.

16. Signature – All applications must be signed as follows and the signatures must be original:

a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
b. For a partnership or sole proprietorship, by a general partner or the proprietor.
c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

PART D – EXPANDED EFFLUENT TESTING DATA

17. Self-explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA

18. Self- explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

19. Federal regulations are available through the U.S. Government Printing Office at https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR.
19.1 Self – explanatory
19.2 A noncategorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:

i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
ii. Contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
iii. Is designated as an SIU by the control authority.

20.-22.4 Self-explanatory.

PART G – COMBINED SEWER SYSTEMS

23.-24.4 Self-explanatory.

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

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

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102-0176

Map of regional offices with addresses and phone numbers are available on the web at http://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 573-751-6825.

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: August 4, 2015
Lab. No.: 2015MT0410
Invoice No.: 215281

CITY OF EUREKA
City Hall, P.O.Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent #004
SAMPLE TAKEN : 7-21-15
DATE RECEIVED : 7-21-15
DATE ANALYZED : 7-21-15 to 8-4-15
Metals by ICP: EPA600 4.1.4.200.7R4.4
RESULTS: mg/L OR PARTS PER MILLION (PPM)

ANALYTE	RESULTS	MDL	METHOD NUMBER
Antimony	< 0.050	0.0500	200.7
Arsenic	< 0.025	0.0250	200.7
Beryllium	< 0.0005	0.0005	200.7
Cadmium	0.007	0.0020	200.7
Chromium	0.310	0.0050	200.7
Copper	0.860	0.0100	200.7
Lead	0.430	0.0150	200.7
Mercury	< 0.0002	0.0002	245.1
Nickle	1.500	0.0050	249.1
Selenium	< 0.040	0.0400	By ICP
Thallium	< 0.050	0.0500	By ICP
Zinc	5.200	0.0100	289.1
Cyanide	< 0.020	0.0200	335.1
Total Phenolic Compounds	< 0.050	0.0500	420.1
Hardness	460	10	130.2

ND: Below Detection Limit / MDL: Method Detection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: August 4, 2015
Lab No.: 2015MT0410
Invoice: 215281

CITY OF EUREKA
City Hall, P.O.Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 7-21-15
DATE RECEIVED : 7-21-15
DATE ANALYZED : 7-30-15
RESULTS: mg/L OR PARTS PER MILLION (PPM)
SEMI - VOLATILE ORGANICS EPA 600 METHOD 625 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,2,4-Trichlorobenzene	ND	0.010
1,2-Diphenylhydrazine	ND	0.010
2,4,6-Trichlorophenol	ND	0.010
2,4-Dichlorophenol	ND	0.010
2,4-Dimethylphenol	ND	0.010
2,4-Dinitrophenol	ND	0.021
2,4-Dinitrotoluene	ND	0.010
2,6-Dinitrotoluene	ND	0.010
2-Chloronaphthalene	ND	0.010
2-chlorophenol	ND	0.010
2-Nitrophenol	ND	0.021
3,3'-Dichlorobenzidine	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.021
4-Bromophenyl phenyl ether	ND	0.010
4-chloro-3-methylphenol	ND	0.021
4-chlorophenyl phenyl ether	ND	0.010
4-Nitrophenol	ND	0.021
Acenaphthene	ND	0.010
Acenaphthylene	ND	0.010
Anthracene	ND	0.010
Azobenzene	ND	0.010
Benzidine	ND	0.041
Benzo(a)anthracene	ND	0.010
Benzo(a)pyrene	ND	0.010
Benzo(b)fluoranthene	ND	0.010

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

ANALYTE	EFFLUENT # 004	MDL
Benzo(g,h,I)perylene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Bis(2-chloroethoxy)methane	ND	0.010
Bis(2-chloroethyl)ether	ND	0.010
Bis(2-chloroisopropyl)ether	ND	0.010
Bis(2-ethylhexyl)phthalate	ND	0.010
Butyl benzyl phthalate	ND	0.010
Chrysene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.010
Diethyl phthalate	ND	0.010
Dimethyl phthalate	ND	0.010
Di-n-butyl phthalate	ND	0.010
Di-n-octyl phthalate	ND	0.010
Fluoranthene	ND	0.010
Fluorene	ND	0.010
Hexachlorobenzene	ND	0.010
Hexachlorobutadiene	ND	0.010
Hexachlorocyclopentadiene	ND	0.021
Hexachloroethane	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.010
Isophorone	ND	0.010
Naphthalene	ND	0.010
Nitrobenzene	ND	0.010
N-Nitrosodimethylamine	ND	0.021
N-Nitroso-di-n-propylamine	ND	0.010
N-Nitrosodiphenylamine	ND	0.010
Pentachlorophenol	ND	0.021
Phenanthrene	ND	0.010
Phenol	ND	0.010
Pyrene	ND	0.010

ND: Not Detected / MDL: Method Dection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: August 4, 2015
Lab. No.: 2015MT0410
Invoice No.: 215281

CITY OF EUREKA
City Hall, P.O. Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 7-21-15
DATE RECEIVED : 7-21-15
DATE ANALYZED : 7-24-15
RESULTS: ug/L OR PARTS PER BILLION (PPB)

VOLATILE ORGANICS EPA 600 METHOD 624 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2-Chloroethyl vinyl ether	ND	20.0
Acrolein	ND	100
Acrylonitrile	ND	5.0
Benzene	ND	2.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Cis-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
Ethylbenzene	ND	5.0
M,p-Xylenes	ND	5.0

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

ANALYTE	EFFLUENT # 004	MDL
Methylene chloride	ND	5.0
o-Xylene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl chloride	ND	2.0
Xylenes, Total	ND	5.0

ND: Not Detected / MDL: Method Detection Limit

Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: August 18, 2015
Lab No.: 2015MT0422
Invoice: 215291

CITY OF EUREKA
City Hall, P.O.Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 8-4-15
DATE RECEIVED : 8-4-15
DATE ANALYZED : 8-13-15
RESULTS: mg/L OR PARTS PER MILLION (PPM)
SEMI - VOLATILE ORGANICS EPA 600 METHOD 625 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,2,4-Trichlorobenzene	ND	0.010
1,2-Diphenylhydrazine	ND	0.010
2,4,6-Trichlorophenol	ND	0.010
2,4-Dichlorophenol	ND	0.010
2,4-Dimethylphenol	ND	0.010
2,4-Dinitrophenol	ND	0.021
2,4-Dinitrotoluene	ND	0.010
2,6-Dinitrotoluene	ND	0.010
2-Chloronaphthalene	ND	0.010
2-chlorophenol	ND	0.010
2-Nitrophenol	ND	0.021
3,3'-Dichlorobenzidine	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.021
4-Bromophenyl phenyl ether	ND	0.010
4-chloro-3-methylphenol	ND	0.021
4-chlorophenyl phenyl ether	ND	0.010
4-Nitrophenol	ND	0.021
Acenaphthene	ND	0.010
Acenaphthylene	ND	0.010
Anthracene	ND	0.010
Azobenzene	ND	0.010
Benzidine	ND	0.041
Benzo(a)anthracene	ND	0.010
Benzo(a)pyrene	ND	0.010
Benzo(b)fluoranthene	ND	0.010

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

ANALYTE	EFFLUENT # 004	MDL
Benzo(g,h,I)perylene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Bis(2-chloroethoxy)methane	ND	0.010
Bis(2-chloroethyl)ether	ND	0.010
Bis(2-chloroisopropyl)ether	ND	0.010
Bis(2-ethylhexyl)phthalate	ND	0.010
Butyl benzyl phthalate	ND	0.010
Chrysene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.010
Diethyl phthalate	ND	0.010
Dimethyl phthalate	ND	0.010
Di-n-butyl phthalate	ND	0.010
Di-n-octyl phthalate	ND	0.010
Fluoranthene	ND	0.010
Fluorene	ND	0.010
Hexachlorobenzene	ND	0.010
Hexachlorobutadiene	ND	0.010
Hexachlorocyclopentadiene	ND	0.021
Hexachloroethane	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.010
Isophorone	ND	0.010
Naphthalene	ND	0.010
Nitrobenzene	ND	0.010
N-Nitrosodimethylamine	ND	0.021
N-Nitroso-di-n-propylamine	ND	0.010
N-Nitrosodiphenylamine	ND	0.010
Pentachlorophenol	ND	0.021
Phenanthrene	ND	0.010
Phenol	ND	0.010
Pyrene	ND	0.010

ND: Not Detected / MDL: Method Dection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: August 18, 2015
Lab. No.: 2015MT0422
Invoice No.: 215291

CITY OF EUREKA
City Hall, P.O.Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent #004
SAMPLE TAKEN : 8-4-15
DATE RECEIVED : 8-4-15
DATE ANALYZED : 8-4-15 to 8-18-15
Metals by ICP: EPA600 4.1.4.200.7R4.4
RESULTS: mg/L OR PARTS PER MILLION (PPM)

ANALYTE	RESULTS	MDL	METHOD NUMBER
Antimony	< 0.050	0.0500	200.7
Arsenic	< 0.025	0.0250	200.7
Beryllium	< 0.0005	0.0005	200.7
Cadmium	0.005	0.0020	200.7
Chromium	0.07	0.0050	200.7
Copper	0.09	0.0100	200.7
Lead	0.08	0.0150	200.7
Mercury	< 0.0002	0.0002	245.1
Nickle	0.320	0.0050	249.1
Selenium	< 0.040	0.0400	By ICP
Thallium	< 0.050	0.0500	By ICP
Zinc	2.260	0.0100	289.1
Cyanide	< 0.020	0.0200	335.1
Total Phenolic Compounds	< 0.050	0.0500	420.1
Hardness	425	10	130.2

ND: Below Detection Limit / MDL: Method Detection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: August 18, 2015
Lab. No.: 2015MT0422
Invoice No.: 215291

CITY OF EUREKA
City Hall, P.O. Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 8-4-15
DATE RECEIVED : 8-4-15
DATE ANALYZED : 8-10-15
RESULTS: ug/L OR PARTS PER BILLION (PPB)

VOLATILE ORGANICS EPA 600 METHOD 624 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2-Chloroethyl vinyl ether	ND	20.0
Acrolein	ND	100
Acrylonitrile	ND	5.0
Benzene	ND	2.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Cis-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
Ethylbenzene	ND	5.0
M,p-Xylenes	ND	5.0

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

ANALYTE	EFFLUENT # 004	MDL
Methylene chloride	ND	5.0
o-Xylene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl chloride	ND	2.0
Xylenes, Total	ND	5.0

ND: Not Detected / MDL: Method Detection Limit

Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

Date: September 1, 2015
Lab No.: 2015MT0434
Invoice: 215304

CITY OF EUREKA
City Hall, P.O.Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 8-18-15
DATE RECEIVED : 8-18-15
DATE ANALYZED : 8-27-15
RESULTS: mg/L OR PARTS PER MILLION (PPM)
SEMI - VOLATILE ORGANICS EPA 600 METHOD 625 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,2,4-Trichlorobenzene	ND	0.010
1,2-Diphenylhydrazine	ND	0.010
2,4,6-Trichlorophenol	ND	0.010
2,4-Dichlorophenol	ND	0.010
2,4-Dimethylphenol	ND	0.010
2,4-Dinitrophenol	ND	0.021
2,4-Dinitrotoluene	ND	0.010
2,6-Dinitrotoluene	ND	0.010
2-Chloronaphthalene	ND	0.010
2-chlorophenol	ND	0.010
2-Nitrophenol	ND	0.021
3,3'-Dichlorobenzidine	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.021
4-Bromophenyl phenyl ether	ND	0.010
4-chloro-3-methylphenol	ND	0.021
4-chlorophenyl phenyl ether	ND	0.010
4-Nitrophenol	ND	0.021
Acenaphthene	ND	0.010
Acenaphthylene	ND	0.010
Anthracene	ND	0.010
Azobenzene	ND	0.010
Benzidine	ND	0.041
Benzo(a)anthracene	ND	0.010
Benzo(a)pyrene	ND	0.010
Benzo(b)fluoranthene	ND	0.010

MIDWEST TESTING LABORATORIES

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ANALYTE	EFFLUENT # 004	MDL
Benzo(g,h,I)perylene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Bis(2-chloroethoxy)methane	ND	0.010
Bis(2-chloroethyl)ether	ND	0.010
Bis(2-chloroisopropyl)ether	ND	0.010
Bis(2-ethylhexyl)phthalate	ND	0.010
Butyl benzyl phthalate	ND	0.010
Chrysene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.010
Diethyl phthalate	ND	0.010
Dimethyl phthalate	ND	0.010
Di-n-butyl phthalate	ND	0.010
Di-n-octyl phthalate	ND	0.010
Fluoranthene	ND	0.010
Fluorene	ND	0.010
Hexachlorobenzene	ND	0.010
Hexachlorobutadiene	ND	0.010
Hexachlorocyclopentadiene	ND	0.021
Hexachloroethane	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.010
Isophorone	ND	0.010
Naphthalene	ND	0.010
Nitrobenzene	ND	0.010
N-Nitrosodimethylamine	ND	0.021
N-Nitroso-di-n-propylamine	ND	0.010
N-Nitrosodiphenylamine	ND	0.010
Pentachlorophenol	ND	0.021
Phenanthrene	ND	0.010
Phenol	ND	0.010
Pyrene	ND	0.010

ND: Not Detected / MDL: Method Dection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

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Date: September 1, 2015
Lab No.: 2015MT0434
Invoice: 215304

CITY OF EUREKA
City Hall, P.O.Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 8-18-15
DATE RECEIVED : 8-18-15
DATE ANALYZED : 8-27-15
RESULTS: mg/L OR PARTS PER MILLION (PPM)
SEMI - VOLATILE ORGANICS EPA 600 METHOD 625 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,2,4-Trichlorobenzene	ND	0.010
1,2-Diphenylhydrazine	ND	0.010
2,4,6-Trichlorophenol	ND	0.010
2,4-Dichlorophenol	ND	0.010
2,4-Dimethylphenol	ND	0.010
2,4-Dinitrophenol	ND	0.021
2,4-Dinitrotoluene	ND	0.010
2,6-Dinitrotoluene	ND	0.010
2-Chloronaphthalene	ND	0.010
2-chlorophenol	ND	0.010
2-Nitrophenol	ND	0.021
3,3'-Dichlorobenzidine	ND	0.010
4,6-Dinitro-2-methylphenol	ND	0.021
4-Bromophenyl phenyl ether	ND	0.010
4-chloro-3-methylphenol	ND	0.021
4-chlorophenyl phenyl ether	ND	0.010
4-Nitrophenol	ND	0.021
Acenaphthene	ND	0.010
Acenaphthylene	ND	0.010
Anthracene	ND	0.010
Azobenzene	ND	0.010
Benzidine	ND	0.041
Benzo(a)anthracene	ND	0.010
Benzo(a)pyrene	ND	0.010
Benzo(b)fluoranthene	ND	0.010

MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

ANALYTE	EFFLUENT # 004	MDL
Benzo(g,h,I)perylene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Bis(2-chloroethoxy)methane	ND	0.010
Bis(2-chloroethyl)ether	ND	0.010
Bis(2-chloroisopropyl)ether	ND	0.010
Bis(2-ethylhexyl)phthalate	ND	0.010
Butyl benzyl phthalate	ND	0.010
Chrysene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.010
Diethyl phthalate	ND	0.010
Dimethyl phthalate	ND	0.010
Di-n-butyl phthalate	ND	0.010
Di-n-octyl phthalate	ND	0.010
Fluoranthene	ND	0.010
Fluorene	ND	0.010
Hexachlorobenzene	ND	0.010
Hexachlorobutadiene	ND	0.010
Hexachlorocyclopentadiene	ND	0.021
Hexachloroethane	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.010
Isophorone	ND	0.010
Naphthalene	ND	0.010
Nitrobenzene	ND	0.010
N-Nitrosodimethylamine	ND	0.021
N-Nitroso-di-n-propylamine	ND	0.010
N-Nitrosodiphenylamine	ND	0.010
Pentachlorophenol	ND	0.021
Phenanthrene	ND	0.010
Phenol	ND	0.010
Pyrene	ND	0.010

ND: Not Detected / MDL: Method Dection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

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Date: September 1, 2015
Lab. No.: 2015MT0434
Invoice No.: 215304

CITY OF EUREKA
City Hall, P.O. Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 8-18-15
DATE RECEIVED : 8-18-15
DATE ANALYZED : 8-24-15
RESULTS: ug/L OR PARTS PER BILLION (PPB)

VOLATILE ORGANICS EPA 600 METHOD 624 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2-Chloroethyl vinyl ether	ND	20.0
Acrolein	ND	100
Acrylonitrile	ND	5.0
Benzene	ND	2.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Cis-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
Ethylbenzene	ND	5.0
M,p-Xylenes	ND	5.0

MIDWEST TESTING LABORATORIES

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ANALYTE	EFFLUENT # 004	MDL
Methylene chloride	ND	5.0
o-Xylene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl chloride	ND	2.0
Xylenes, Total	ND	5.0

ND: Not Detected / MDL: Method Detection Limit

Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

Pace Analytical
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PACE # 60198426

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Fax: 913.599.1759

July 20, 2015

Dinesh Shah
Midwest Testing Lab, Inc
2645 Gravois Ave.
St. Louis, MO 63118

Re: Lab Project Number: 60198426
Client Project ID: Wet Test

Dear:

Enclosed are the analytical results for sample(s) received by the laboratory. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any question concerning this report, please feel free to contact me.

Sincerely,

Tim Harrell

Tim Harrell
Tim.Harrell@pacelabs.com
Technical Director

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.

808 West McKay, Frontenac, KS 66763

LABORATORY REPORT:

CLIENT: Dinesh Shah **Midwest Testing Lab, Inc** **2645 Gravois Ave.** **St. Louis, MO 63118** 1-314-773-3035	**Date Reported: 7-20-15** **Date Initiated: 7-15-15** **Time Set: 11:30** **Date Terminated: 7-17-15**

BIOMONITORING STUDY

ACUTE TOXICITY

Permit # MO-0039659

FINDING AND CONCLUSIONS:

Acute toxicity testing was performed on duplicate samples of effluent collected from City of Eureka effluent discharge. **Acute toxicity**, as defined by significant mortality for at least one of two aquatic test species during a 48 hour period of exposure, was **not detected in Ceriodaphnia exposed to the 100% effluent (AEC), and was not detected in fathead minnows exposed to the 100% effluent. The LC50 for the Ceriodaphnia was >100% and >100% for the Pimephales.** The test species utilized in this test were the water flea, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. Detailed results of the toxicity testing are provided in the Acute Toxicity Reports. In addition to the acute toxicity testing, water temperature, pH, dissolved oxygen, total hardness, total alkalinity, conductivity, and chlorine determinations were performed on the effluent and control samples

SAMPLING PROCEDURES:

City of Eureka personnel collected a sample at City of Eureka effluent discharge. The sample was preserved with ice and transported to Pace Analytical by commercial carrier.

REPORT OF LABORATORY ANALYSIS

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INTRODUCTION:

The purpose of this test was to determine the acute toxicity of City of Eureka effluent on the freshwater invertebrate, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. These tests were conducted at Pace Analytical Services, Inc., Frontenac, KS.

TEST ORGANISMS:

Ceriodaphnia dubia - The genetic stock of Ceriodaphnia dubia used in this acute toxicity Test were originally obtained from a private breeder. Ceriodaphnia are cultured in house at Pace Analytical Services. Inc. Culture methods of Ceriodaphnia were obtained from EPA821-C-02-006 November 2002.

Pimephales promelas - The fathead minnows used in this acute toxicity test were cultured in-house at Pace Analytical Services. Inc., Frontenac, KS and/or were obtained from a private breeder. Fathead minnows are maintained at Pace Analytical Services until use for acute toxicity between the ages of 1 and 14 days. Information for culturing fathead minnows was taken from EPA821-C-02-006 November 2002.

MATERIALS AND METHODS:

Procedures used in the acute toxicity tests are described in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (USEPA, 2002).

City of Eureka personnel collected the effluent tested from City of Eureka discharge. Testing was performed using a 100% effluent, a series of dilutions, an upstream, and a synthetic control. **The toxicity test was initiated within 36 hours of sample collection.**

Effluent and synthetic control test solutions were not aerated during the testing period.

Ceriodaphnia *ACUTE METHODS:*

This static test was ran using 40 ml glass vials containing 25 ml of test solution. Food was administered before the test. Five Ceriodaphnia neonates (<24 hr old) were randomly selected and placed in each of 4 replicates of test solution. A total of 20 organisms per concentration were tested. Observations of mortality were made at 24 and 48 hours of exposure.

REPORT OF LABORATORY ANALYSIS

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Pimephales *ACUTE METHODS:*

This static toxicity test was conducted using 500 ml polypropylene container as test chambers containing 250 ml of test solution. Food was administered prior to test initiation, but not during the testing period. Ten Pimephales, 1 – 14 days old, from a single spawn, were randomly selected and placed in each of 4 test chambers. A total of 40 organisms were exposed to each test concentration. Observations of mortality were made at 24 and 48 hours of exposure.

WATER QUALITY METHODS:

Prior to test initiation, temperature, dissolved oxygen, pH, total alkalinity, total hardness, and total residual chlorine were measured in the effluent and in the controls. At 24 and 48 hours of exposure, temperature, dissolved oxygen, pH, and conductance were measured in the effluent sample and the controls.

DATA ANALYSIS:

Statistically significant ($p=0.05$) mortality is determined by Dunnet's procedure using average percent survival of each test concentration versus the average survival of the controls. If significant mortality occurs, median lethal concentrations (LC50) are calculated using effluent concentrations and their corresponding percent mortality data. The LC50's and the 95% confidence intervals are calculated where appropriate by the Spearman-Karber method. Statistical analysis is accomplished by following steps in EPA/600/4-90/027F, August 1993 and by use of Toxstat version 3.4.

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RESULTS:

THE Ceriodaphnia MORTALITY RESULTS - There was no significant mortality observed of the freshwater invertebrate, Ceriodaphnia dubia, during the 48 hour exposure period to the 100% effluent concentrations. There was no significant mortality in the synthetic control. The LC50 value of the sample to Ceriodaphnia is approximately >100%

Ceriodaphnia MORTALITY DATA

 # ALIVE

CONC	REP #	0 HOURS	24 HOURS	48 HOURS	% MORT
SYNTHETIC	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
Upstream	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
6.25%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
12.5%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
25%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
34%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
50%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
100%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0

AVG. MORTALITY @ AEC (100% EFFLUENT) =0.0%

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THE Pimephales RESULTS - Minnows exposed to effluent collected at City of Eureka effluent discharge exhibited no significant mortality in the 100% effluent concentration during the 48 hr exposure period. The synthetic control showed no significant mortality during the testing period. The LC50 value of the effluent to fathead minnows is estimated to be >100%.

CONC.	REP #	0 HOURS	24 HOURS	48 HOURS	% MORTALITY
SYNTHETIC	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
Upstream	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
6.25%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
12.5%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
25%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
34%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
50%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
100%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0

AVG. MORTALITY @ AEC (100% EFFLUENT) =0.0%

REPORT OF LABORATORY ANALYSIS

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WATER CHEMISTRY RESULTS:

Total residual chlorine (Cl2) - The effluent sample from City of Eureka discharge had <0.1 mg/l detectable level of total residual chlorine upon receipt in the laboratory.

Dissolved Oxygen (D.O.) - Dissolved oxygen reading of the 100% effluent sample was 7.80 mg/l after being raised to the test temperature of 25° C. At termination D.O. was 7.60 mg/l in the 100% effluent, which falls into acceptable limits. Aeration was not required in this test.

pH - The pH of the 100% effluent was 7.75 upon receipt in the laboratory and the synthetic control had a 7.72. At termination the pH measurement in the 100% effluent sample was 8.78

Conductance - The conductance of the effluent sample was 1217 umhos and the synthetic control was 316 umhos.

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INITIAL WATER QUALITY:

Initial Measurements Synthetic Water

pH	D.O. (mg/l)	Cond. (umhos)	Cl2 (mg/l)	Temp (C)	Hard (mg/l)	Alk (mg/l)
7.72	8.10	316	<0.1	25.0	96	62

Initial Measurements of Upstream

PH	D.O. (mg/l)	Cond. (umhos)	Cl2 (mg/l)	Temp (C)	Hard (mg/l)	Alk (mg/l)
7.68	8.50	267	<0.1	25.0	146	128

Initial Measurements of 100% Effluent

PH	D.O. (mg/l)	Cond. (umhos)	Cl2 (mg/l)	Temp (C)	Hard (mg/l)	Alk (mg/l)
7.75	7.80	1217	<0.1	25.0	448	252

TEST WATER QUALITY:

24-hour Water Quality Measurements

EFFLUENT CONC (%)	PH	D.O. (mg/l)	TEMP (C)	COND. (umhos)
Synthetic	7.82	7.40	25.1	362
Upstream	8.11	7.70	25.1	289
6.25%	8.11	7.70	25.1	369
12.5%	8.10	7.70	25.1	408
25%	8.07	7.70	25.1	586
34%	8.06	7.70	25.1	689
50%	8.04	7.70	25.1	847
100%	8.01	7.70	25.1	1465

48-hour Water Quality Measurements

EFFLUENT CONC (%)	PH	D.O. (mg/l)	TEMP (C)	COND. (umhos)
Synthetic	7.97	7.30	25.1	388
Upstream	8.52	7.50	25.1	397
6.25%	8.59	7.50	25.1	416
12.5%	8.63	7.50	25.1	438
25%	8.66	7.50	25.1	612
34%	8.69	7.50	25.1	698
50%	8.72	7.50	25.1	866
100%	8.78	7.60	25.1	1515

REPORT OF LABORATORY ANALYSIS

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QUALITY ASSURANCE:

The absence of control mortality during this test indicated the health of the organisms and indicated that any significant mortality in the test concentrations is not due to contaminants or variations in test conditions. Reference toxicity tests are routinely performed by staff members of our Toxicology Department.

REFERENCE TOXICANT (NaCl)
Ceriodaphnia
 # OF LIVE ORGANISMS

CONC OF TOXICANT	TEST INITIATION	24 HOUR EXPOSURE	48 HOUR EXPOSURE
3.0 g/l	20	2	0
2.5 g/l	20	16	10
2.0 g/l	20	20	20
1.5 g/l	20	20	20
1.0 g/l	20	20	20

LC50 = 2.50 g/l NaCl

REFERENCE TOXICANT (NaCl)
Pimephales
 # OF LIVE ORGANISMS

CONC OF TOXICANT	TEST INITIATION	24 HOUR EXPOSURE	48 HOUR EXPOSURE
10.0 g/l	40	2	0
8.0 g/l	40	34	22
6.0 g/l	40	38	37
4.0 g/l	40	40	40
2.0 g/l	40	40	40

LC50 = 8.31 g/l NaCl

Submitted By: Tim Harrell
Timothy Harrell
Technical Director

REPORT OF LABORATORY ANALYSIS

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

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

PART A – TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME	DATE AND TIME COLLECTED EFFLUENT _____ UPSTREAM _____
PERMIT NUMBER	PERMIT OUTFALL NUMBER
COLLECTOR'S NAME	
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION	
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC)	EFFLUENT SAMPLE TYPE (CHECK ONE) ☐ 24 HR COMPOSITE ☐ GRAB ☐ OTHER _____
SAMPLE NUMBER EFFLUENT _____ UPSTREAM _____	UPSTREAM SAMPLE TYPE (CHECK ONE) ☐ 24 HR COMPOSITE ☐ GRAB ☐ OTHER _____
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L	PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L

PART B – TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY PACE ANALYTICAL SERVICES	TEST TYPE Acute	
FINAL REPORT NUMBER 60198426	TEST DURATION 48 HOURS	
DATE OF LAST REFERENCE TOXICANT TESTING 6/17/15	TEST METHOD EPA 2000 AND 2002	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 7/15/15 10:35	TEST START DATE AND TIME 7/15/15 11:30	TEST END DATE AND TIME 7/17/15 12:00
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT _____ UPSTREAM _____	TEST ORGANISM #1 AND AGE DUBIA <24 HOURS	TEST ORGANISM #2 AND AGE FATHEAD 8 DAYS
SAMPLE FILTERED[1] PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT _____ UPSTREAM _____	90 PERCENT OR GREATER SURVIVAL IN SYNTHETIC CONTROL? ☒ YES ☐ NO	DILUTION WATER USED TO ACHIEVE AEC
FILTER MESH SIEVE SIZE[2]	EFFLUENT ORGANISM #1 PERCENT MORTALITY AT AEC 0	EFFLUENT ORGANISM #2 PERCENT MORTALITY AT AEC 0
SAMPLE AERATED DURING TESTING? ☐ YES ☒ NO	UPSTREAM ORGANISM #1 PERCENT MORTALITY 0	UPSTREAM ORGANISM #2 PERCENT MORTALITY 0
pH ADJUSTED? ☐ YES ☒ NO EFFLUENT _____ UPSTREAM _____	TEST RESULT AT AEC FOR ORGANISM #1 ☒ PASS ☐ FAIL	TEST RESULT AT AEC FOR ORGANISM #2 ☒ PASS ☐ FAIL

PART A – TO BE COMPLETED IN FULL BY PERMITTEE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	25	SM 2550B	7/15/15
pH Standard Units	7.75	SM 4500-H+ B	7/15/15
Conductance µMohs	1217	82EPA 120.1	7/15/15
Dissolved Oxygen mg/L	7.80	SM 4500-O G	7/15/15
Total Residual Chlorine mg/L	<.1	SM 4500-CL G	7/15/15
Unionized Ammonia mg/L			
* Total Alkalinity mg/L	252	SM 2320 B	7/15/15
* Total Hardness mg/L	448	SM2340 C	7/15/15

* Recommended by EPA guidance, not a required analysis.

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

MO 780-1898 (07-09) CONTINUED ON PAGE 2 PAGE 1

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT (Continued)

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

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100 PERCENT UPSTREAM SAMPLE[3]

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	25	SM 2550B	7/15/15
pH Standard Units	7.68	SM 4500-H+ B	7/15/15
Conductance µMohs	267	EPA 120.1	7/15/15
Dissolved Oxygen mg/L	8.50	SM 4500-O G	7/15/15
Total Residual Chlorine mg/L	<.1	SM 4500-CL G	7/15/15
Unionized Ammonia mg/L			
* Total Alkalinity mg/L	128	SM 2320 B	7/15/15
* Total Hardness mg/L	146	SM2340 C	7/15/15

* Recommended by EPA guidance, not a required analysis

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)
MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100 PERCENT UPSTREAM SAMPLE[3]

PERMIT ALLOWABLE EFFLUENT CONCENTRATION, or AEC: As indicated on permit. Test is invalid otherwise.

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

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

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

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

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

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

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

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

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

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

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
	MO-	

PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA

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

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

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

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

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

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

NPDES DISCHARGE MONITORING REPORT
WASTEWATER AND/OR STORMWATER

cility Name	Eureka WWTF	TYPE OF REPORT: MONTHLY	
rmit Number	MO-0039659	DUE MONTHLY	
unty	ST. LOUIS		
scharge Type			
is report covers the MONTH of	2015 jan-aug		

DMR Sampling Summary for Outfall #004

Parameter	Units	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal
EFFLUENT						
Flow	MGD		2.39		1.46	
Biochemical Oxygen Demand (B0D)	mg/L			19.54	19.54	
Total Suspended Solids (TSS)	mg/L			17.78	17.78	
***E.coli*	#/100 ml			30.81	30.81	
pH - Units	SU	7.68	7.94			
Ammonia as N	mg/L		12.58		2.96	
Oil & Grease	mg/L		6.5		5.43	
INFLUENT						
Biochemical Oxygen Demand (B0D)	mg/L					
Total Suspended Solids (TSS)	mg/L					

heck Following Box if **No Discharge** Occurred during this reporting period ☐

les Collected by:	Date	Phone number	Email Address
ature and Title of individual preparing report	Date	Phone number	Email Address
rt Approval by Owner or Continuing Authority	Date	Phone number	Email Address
ses Preformed by (lab)		Phone number	Email Address

turn this form to:
IR - St. Louis Regional Office, 7545 South Lindbergh, Suite 210, St. Louis MO 63125

Applicable only during the recreational season from April 1 through October 31.

IS FACILITY REQURIES A WHOLE EFFLUENT TOXICITY (WET) TEST TWICE/YEAR (APR-MAY)(JULY-AUGUST)

2015

		Flow	BOD	TSS	Alk.	Low PH	High PH	Am	O.G
1	JAN	.91	28	14.5	0	7.8	7.89	5.23	5
2	FEB	.71	25.75	14	0	7.68	7.94	12.58	6.5
3	MAR	1.31	28.5	17.5	0	7.63	7.86	14.49	6
4	APRIL	1.43	17.8	17.6	128	7.55	7.76	3.35	5.5
5	MAY	1.5	15.75	17.75	50	7.65	7.94	.5	5
6	JUNE	2.39	12.25	16	36.5	7.53	7.68	.5	5
7	JULY	2.07	21.8	34.4	32	7.56	7.8	.5	5
8	AUG	1.36	6.5	10.5	0	7.65	7.84	.5	5
9									
10	AVERAGE	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG
11		17.67	19.54	17.78	30.81	7.63	7.84	4.71	5.29
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
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40									

NPDES DISCHARGE MONITORING REPORT
WASTEWATER AND/OR STORMWATER

cility Name	Eureka WWTF	TYPE OF REPORT: MONTHLY	
rmit Number	MO-0039659	DUE MONTHLY	
unty	ST. LOUIS		
scharge Type			
is report covers the MONTH of	Jan-dec 2014		

DMR Sampling Summary for Outfall #004

Parameter	Units	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal
EFFLUENT						
Flow	MGD		2.03		1.56	
Biochemical Oxygen Demand (B0D)	mg/L			43.53	43.53	
Total Suspended Solids (TSS)	mg/L			14.55	14.55	
***E.coli*	#/100 ml			36.55	36.55	
pH - Units	SU	7.52	8.24			
Ammonia as N	mg/L		23.15		6.51	
Oil & Grease	mg/L		6		5.2	
INFLUENT						
Biochemical Oxygen Demand (B0D)	mg/L			119.4	119.4	
Total Suspended Solids (TSS)	mg/L			121.4	121.4	
heck Following Box if **No Discharge** Occurred during this reporting period			☐			

les Collected by:	Date	Phone number	Email Address
ature and Title of indiviual preparing report	Date	Phone number	Email Address
rt Approval by Owner or Continuing Authority	Date	Phone number	Email Address
ses Preformed by (lab)		Phone number	Email Address

turn this form to:
IR - St. Louis Regional Office, 7545 South Lindbergh, Suite 210, St. Louis MO 63125
Applicable only during the recreational season from April 1 through October 31.
IS FACILITY REQURIES A WHOLE EFFLUENT TOXICITY (WET) TEST TWICE/YEAR (APR-MAY)(JULY-AUGUST)

2014

		004 Flow	BOD	TSS	Ecoli	pH Low	pH High	Ammonia	Oil
1	JAN	.99	19.8	194	Ø	7.27	794	19.84	6
2	FEB	1.59	23.5	24.5	Ø	7.39	8.15	23.15	5.5
3	MAR	1.51	21.5	20	160	744	788	19.68	5
4	APRIL								
5	MAY	1.42	24.5	21	59	737	775	21	6
6	JUNE	2.03	13.75	9.75	Ø	753	7.69	1.02	5
7	JULY	151	14	10.5	24.8	754	787	.5	5
8	AUG	1.92	12	8.25	1	755	752	.5	5
9	SEP	1.6	9.5	8.75	58	763	783	.5	5
10	OCT	189	13.8	12.2	99.2	745	785	.83	5
11	NOV	1.39	12.5	12	Ø	746	824	.5	5
12	DEC	1.27	31.4	13.4	6	758	776	2.98	5.5
13									
14									
15									
16									
17			007 Inlet						
18									
19			BOD	TSS					
20	INFlows		~~153.25~~	~~126~~					
21	1		144.6	180					
22	2		133.25	126					
23	3		129	107.5					
24	4								
25	5		108.25	157.25					
26	6		103	94.5					
27	7		118	85.2					
28	8		85.25	122					
29	9		98.75	98					
30	10		131.6	132.8					
31	11		118.75	117.5					
32	12		143	124.2					
33									
34									
35									
36									
37									
38									
39									
40									

NPDES DISCHARGE MONITORING REPORT
WASTEWATER AND/OR STORMWATER

cility Name	Eureka WWTF	TYPE OF REPORT: MONTHLY	
rmit Number	MO-0039659	DUE MONTHLY	
unty	ST. LOUIS		
scharge Type			

is report covers the **MONTH** of **Jan-dec 2013**

DMR Sampling Summary for Outfall #004

Parameter	Units	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal
EFFLUENT						
Flow	MGD		2.08		1.48	
Biochemical Oxygen Demand (B0D)	mg/L			16.94	16.94	
Total Suspended Solids (TSS)	mg/L			14.23	14.23	
***E.coli*	#/100 ml			48.08	48.08	
pH - Units	SU	7.38	795			
Ammonia as N	mg/L		23.83		6.8	
Oil & Grease	mg/L		7		5.58	
INFLUENT						
Biochemical Oxygen Demand (B0D)	mg/L			136.76	136.76	
Total Suspended Solids (TSS)	mg/L			102.25	102.25	

heck Following Box if **No Discharge** Occurred during this reporting period ☐

les Collected by:	Date	Phone number	Email Address
ature and Title of Individual preparing report	Date	Phone number	Email Address
rt Approval by Owner or Continuing Authority	Date	Phone number	Email Address
ses Preformed by (lab)		Phone number	Email Address

turn this form to:
R - St. Louis Regional Office, 7545 South Lindbergh, Suite 210, St. Louis MO 63125

Applicable only during the recreational season from April 1 through October 31.

IS FACILITY REQURIES A WHOLE EFFLUENT TOXICITY (WET) TEST TWICE/YEAR (APR-MAY)(JULY-AUGUST)

2013

		1		2					
		004							
		Flow	BOD	TSS	Effl	Low PH	High PH	Am NIT	OIL
1		1	21.2	13		701	792	12.6	6.5
2		1.11	20	18.75		774	795	16.98	7
3		2.08	32.25	22.5	378	760	779	23.63	633
4		1.65	26.5	12.25	108.5	738	754	10.47	6
5		1.86	19.4	17.6	61.8	7.4	759	458	525
6		201	7.5	17	48.25	708	773	05	5
7		1.81	14.6	9.4	∅	676	738	.76	5
8		184	7.25	16.5	∅	764	798	.5	5
9		129	5.25	6	2	772	793	.88	5
10		1.09	7.8	9	22.4	755	786	.77	5
11		1.15	14.5	12.25	∅	7.69	782	1.13	5.5
12		1.87	20	11.5	∅	7.15	786	8.64	5
13									
14									
15									
16									
17									
18									
19			INLET	(007)					
20			BOD	TSS					
21			131.8	68.6					
22			259.5	97.5					
23			156.75	87.75					
24			125.75	87.75					
25			~~140~~ 140.4	94.6					
26			123.4	105.6					
27			133.75	172.25					
28			113.25	97.75					
29			165.25	100.5					
30			130.8	168.4					
31			165.25	100.5					
32			164.25	91.5					
33									
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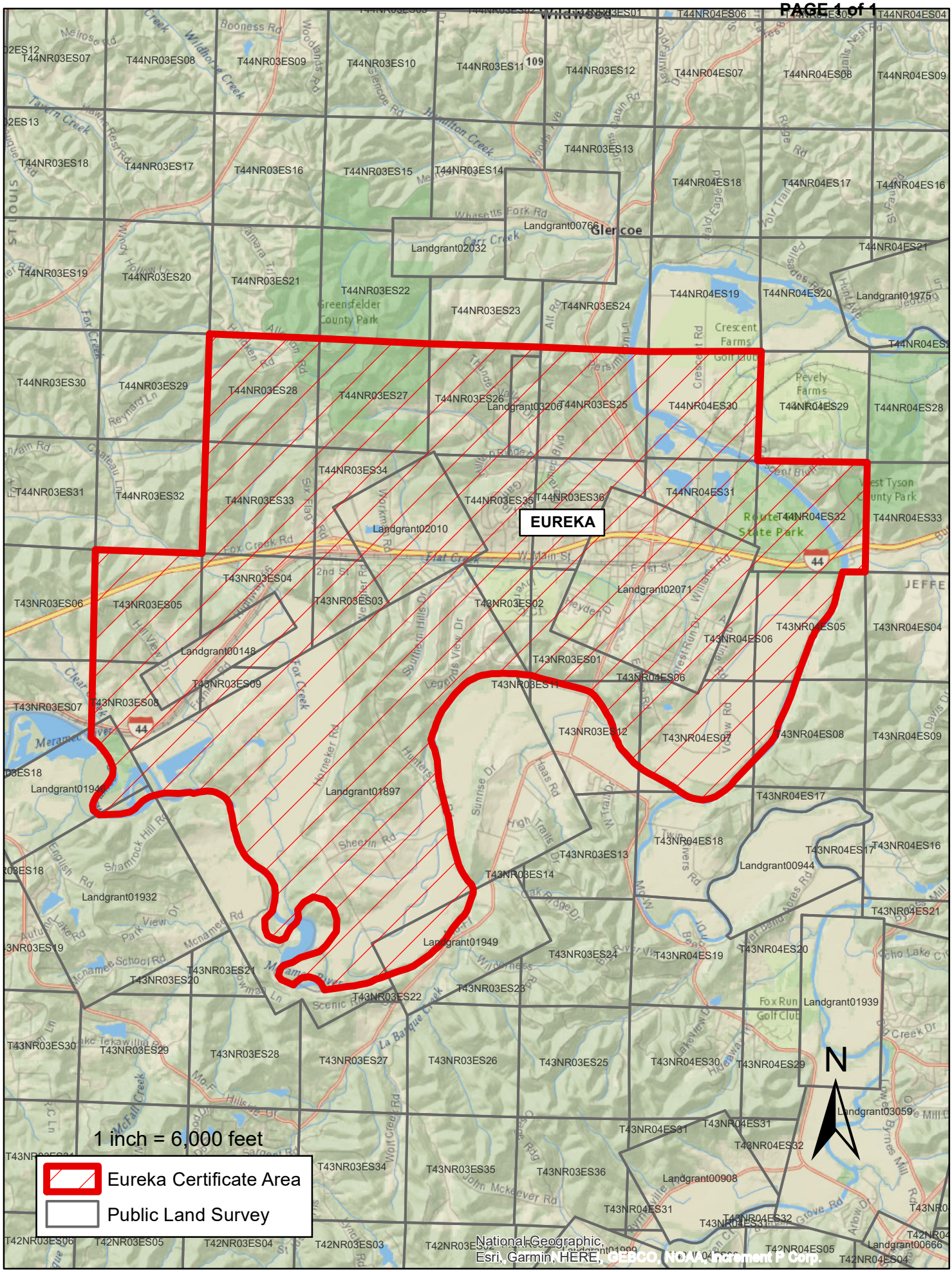
40									


EUREKA
1 inch = 6,000 feet
Eureka Certificate Area
Public Land Survey
N
National Geographic, Esri, Garmin, HERE, GEBCO, NOAA, Increment P Corp.

APPENDIX A

Legal Description

A tract of land in part of Land grants 148, 1932, 1946, 1949, 2010, 3206, 1897, 2071, Sections 1, 2, 3, 4, 5, 8, 9 and 12, Township 43 North, Range 3 East and Part of Sections 25, 26, 27, 28, 33, 35 and 36, Townships 44 North, Range 3 East and Sections 30, 31, 32 and 33 Township 44 North, Range 4 East and Part of Sections 5, 6 and 7, Township 43 North, Range 4 East, City of Eureka, St. Louis County, Missouri and being more particularly described as follows:

Beginning at the Northwest corner of **Section 28, Township 44 North, Range 3 East**; thence East along the North line of said Section 28 to the Northeast corner thereof, being also the Northwest corner of Section 27; thence continuing East, along the North line of said Section 27 to the Northeast corner thereof, being also the Northwest corner of Section 26; thence continuing East along the North line of said Section 26 to the Northeast corner thereof, being also the Northwest corner of Section 25; thence continuing East along the North line of said Section 25 to the Northeast corner thereof, being also the Northwest corner of **Section 30, Township 44 North, Range 4 East**; thence continuing East, along the North line of said Section 30 to the Northeast corner thereof, being also the Northwest corner of **Section 29, Township 44 North, Range 4 East**; thence South, along the East line of said Section 30 to the Southeast corner thereof, being the common corner of Sections 29, 30, 31 and 32; thence East, along the North line of said Section 32 to the Northeast corner thereof, being also the common corner of Section 28, 29, 32 and 33, thence South, along the East line of said Section 32 to the Southeast corner thereof, being also the Northeast corner of Fractional **Section 5, Township 43 North, Range 4 East**; thence West, along the North line of said Section 5 to its intersection with the centerline of the Meramec River; thence Southwest, along said center line to its intersection with the South line of said Section 5, being also the North line of Section 8; thence continuing, along said centerline, Southwest to its intersection with the West line of **Section 8,** being also the East line of **Fractional Section 7 of Township 43 North, Range 4 East**; thence continuing, along said centerline, Southwest and through said Fractional Section 7 to its intersection with the South line of said Fractional Section 7; thence continuing along said centerline South, West and then Northwest to again intersect with the South line of said Fractional Section 7; thence continuing with said center line, Northwesterly and through said Fractional Section 7 to its intersection with the West line of said Section 7 and the East line of **Fractional Section 12, Township 43 North, Range 3 East**; thence continuing Northwest, along said centerline of the Meramec River and through said Fractional Section 12 to its intersection with the South line of said Section 1, being also the North line of Section 12; thence continuing Northwest along centerline to its intersection with the East line of **Fractional Section 11, Township 43 North, Range 3**; thence continuing Northwest, along centerline of Meramec River to the Northwest line of said Fractional Section 11, being also the Northeast line of Land Grant 1897; thence continuing with said centerline Southwest and South through the Land grant 1897 and following the meanders of the Meramec River to a point of intersection with the North line of Land Grant 1949, being also the South line of Lang Gant 1897; thence continuing Southwest along said centerline to a point of intersection with the West line of Land Grant 1949, being also the East line of Land Grant 1897; thence continuing Southwest along centerline of the Meramec River through the Land grant 1897 and following the meanders of the Meramec River to a point of intersection with the Northeast line of Land Grant 1932, being also the Southwest line of Land Grant 1897 thence Southwest along said centerline to a point of intersection with the North line of land Grant 1932,

being also the Southeast line of Land Grant 1946; thence through said Land Grant Northwardly, Northeastwardly and Northwestwardly along said centerline to a point of intersection with the South projection of the West line of **Section 8, Township 43 North, Range 3 East;** thence North, along said South projection to the intersection of the West line of said Section 8 and the Northwest line of Land Grant 1946**,** being also the East line of **Section 7, Township 43 North, Range 3 East**; thence North and along the West line of said Section 8 to the Northwest corner thereof, being also the Southwest cornerof **Section 5, Township 43 North, Range 3 East**; thence continuing North, along the West line of said Section 5 to the Northwest corner thereof; thence East, along the North line of said Section 5 tothe Northeast corner thereof, being also the Southwest corner of **Section 33, Township 44 North, Range 3 East**; thence North, along the West line of said Section 33 to the Northwest corner thereof,being also the Southwest corner of Section 28; thence continuing North, along the West line of said Section 28 to the Northwest corner thereof and the POINT OF BEGINNING.

SCHEDULE BWE-5 HAS BEEN MARKED CONFIDENTIAL IN ITS ENTIRETY

SCHEDULE BWE-6 HAS BEEN MARKED CONFIDENTIAL IN ITS ENTIRETY

Integration Information

1. The anticipated location and hours of operation for the business office that will serve the customers in the Eureka service area is to be determined.

2. The anticipated methods for customers in the Eureka service area to contact the company during non-business hours will be the same customer service team that takes care of all MAWC customers. Customer service hours are 7:00 a.m.-7:00 p.m., Monday thru Friday and 24/7 coverage for emergencies.

3. The current payment options available for Eureka customers are in-person, mail, and electronic payment. There is also a drop box available outside the City Hall where check payments can be dropped off. The current payment methods accepted credit card, ACH (recurring), bank pay, check and cash. Electronic payments are only accepted online via credit card.

   MAWC currently accepts and will offer to Eureka customers payment options of check, credit/debit cards and electronic funds transfer (EFT). Eureka customers will also have the option to make MAWC payments online via check or credit/debit cards.

4. Information for MAWC's intended credit and collection actions for delinquent accounts with associated time frames for each step of the process along with sample copies of notifications to customers is attached as Attachment 1.

5. The current billing process for Eureka customers is as follows:
   - Meters are read and uploaded into the billing software between the first and the third of each month
   - The UB Coordinator runs reports and examine for any irregularities. Any irregularity is investigated
   - Work orders are sent to the water department to check for faulty meters, leaks etc.
   - The water department staff returns the work orders for explanations
   - The bills are adjusted accordingly which takes approximately one week
   - Final billing calculation is done around the 14th day of the month, bills are mailed out on or around the 15th day of the month, and bills are due on or around the 25th day of the month
   - Customer accounts are credited as payments are received
   - *A $5.00 late fee is assessed to all accounts that are 90 days past due. Late notices are generated on or around the 26th day of the month, with a 72-hour notice to respond with payment warning of shut off.*
   - *Notification emails are sent the day before service is shut off. Payments are posted the morning of shut offs, prior to running the shut off list. Shut offs are performed the same day. If a customer is shut off a $25.00 shut off fee is assessed to the account. To restore service, payment is required for at least the 90 day past due amount.*

   MAWC billing process begins once MAWC obtains a read. Within 3 days of that read, a bill is generated and has a due date of 21 days from invoice date. Payments can take up to 5 days to post depending on the method of payment.

6. A copy of the customer brochure summarizing the rights and responsibility of MAWC and its customers is attached as Attachment 2.

7. A copy of a sample bill which MAWC intends to utilize if it acquires the Eureka water and sewer systems is attached as Attachment 3.

8. No formal application process is required for new customers. Current Eureka customers will be integrated into the MOAW customer database using the provided customer information. New customers can call customer service or visit us online to activate new service.

P.O. Box 578 Alton, IL 62002

10/22/2020

Sample Notice

For Service To:
Account Number:
Service Address:

FINAL DISCONTINUANCE NOTICE
PAY THIS AMOUNT: $304.56 PRIOR TO: 10/27/2020

Payment on your Water account is overdue. If payment is not received, your service may be shut off on or after 10/27/2020. You can prevent discontinuation of water service by paying $304.56.

It is our sincere goal to work with you to correct this situation before further action becomes necessary. Please respond immediately so that we can assist you as best as possible. If you do not respond to this notice and your service is disconnected, any installment plan may be considered in default and you may be required to pay the full amount due including a disconnection charge, restoration charge, along with an excavation charge, if required. Please call customer service at the number listed below to ensure payment is applied to your account immediately.

Please note, someone must be available at the premises when service is restored.

Disconnection Charge: $27.50
Regular Hour Restoration Charge: $27.50
Off Hour Restoration Charge: $159.00
Excavation Charge: Actual Cost

Payment must be made before 3:00 pm to have service restored the same day and to avoid the off-hour restoration charge.

For St. Louis County customers only: If discontinuance of service becomes necessary, operation of the customer owned stop cock will be necessary. If the stop cock is found inoperable or breaks in the process of either discontinuing or restoring service, you will be required to repair or replace the stop cock prior to service being restored.

CONVENIENT PAYMENT OPTIONS

8 **Pay your bill online:** www.amwater.com/myaccount

) **Pay by Phone: 855-748-6066** 24 hours a day, seven days a week

€ **Pay in person:** for a list of approved payment locations, visit www.amwater.com/myaccount

Customer Service: M-F 7am to 7pm Emergency: 24/7: 1-855-669-8753 www.missouriamwater.com

ZZ_LDMOCOL_FICA

MISSOURI AMERICAN WATER

AMERICAN WATER, PO BOX 578, ALTON IL, 62002

10/15/2020

For Service To:

Account Number	
Pay Before	10/26/2020
Total Due	304.56

TIME SENSITIVE NOTICE:

To ensure timely receipt of your payment, please use one of the payment options noted below. Do not mail your payment.

IMPORTANT: DISCONTINUANCE NOTICE

Please read and take the steps needed to avoid your service from being discontinued.

PAY THIS AMOUNT **$304.56** **PRIOR TO** **10/26/2020**

Payment on your Water account is overdue. If payment is not received, your service may be shut off on or after 10/26/2020. You can prevent discontinuation of water service by paying the amount printed above. Please use one of our convenient payment options listed below to ensure your payment is applied to your account immediately.

It is our sincere goal to work with you to correct this situation before further action becomes necessary. Please respond immediately so that we can assist you as best as possible. If you do not respond to this notice and your service is disconnected, any installment plan may be considered in default and you may be required to pay the full amount due including a disconnection charge, a restoration charge, along with an excavation charge, if required.

Please note, someone must be available at the premises when service is restored.

Disconnection Charge: $27.50
Regular Hour Restoration Charge: $27.50
Off Hour Restoration Charge: $159.00
Excavation Charge: Actual Cost

Payment must be made before 3:00 pm to have service restored the same day and to avoid the off-hour restoration charge.

If discontinuance of service becomes necessary, operation of the customer owned stop cock will be necessary. If the stop cock is found inoperable or breaks in the process of either discontinuing or restoring service, you will be required to repair or replace the stop cock prior to service being restored.

CONVENIENT PAYMENT OPTIONS

8 **Pay your bill online:** www.amwater.com/myaccount

) **Pay by Phone: 855-748-6066** 24 hours a day, seven days a week

€ **Pay in person:** for a list of approved payment locations, visit www.amwater.com/myaccount

Customer Service: M-F 7am to 7pm Emergency: 24/7: 1-855-669-8753 www.missouriamwater.com

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ADDRESS, EMAIL OR PHONE NUMBER CHANGE REQUEST

Please let us know if we need to update your contact information in our records. NOTE: If you are moving or need to make a name change, please contact our customer service center at the phone number listed on the front of this notice. Updates to your contact information can also be made through our online self-service tool, **MyAccount**. Access MyAccount from any electronic device by visiting www.amwater.com/MyAccount.

1017	Missouri	Missouri	Missouri	Missouri
Strategy	Residential	Non-Residential	Sewer Only	MultiDwelling
Threshold	$75	$75	$135	$100
Day Zero = Invoice Postmark				
Day 1	Invoice	Invoice	Invoice	Invoice
Day 2	↓	↓	↓	↓
Day 3	↓	↓	↓	↓
Day 4	↓	↓	↓	↓
Day 5	↓	↓	↓	↓
Day 6	↓	↓	↓	↓
Day 7	↓	↓	↓	↓
Day 8	↓	↓	↓	↓
Day 9	↓	↓	↓	↓
Day 10	↓	↓	↓	↓
Day 11	↓	↓	↓	↓
Day 12	↓	↓	↓	↓
Day 13	↓	↓	↓	↓
Day 14	↓	↓	↓	↓
Day 15	↓	↓	↓	↓
Day 16	↓	↓	↓	↓
Day 17	↓	↓	↓	↓
Day 18	↓	↓	↓	↓
Day 19	↓	↓	↓	↓
Day 20	↓	↓	↓	↓
Day 21	Due Date	Due Date	Due Date	Due Date
Day 22	DD+1	DD+1	DD+1	DD+1
Day 23	DD+2	DD+2	DD+2	DD+2
Day 24	DD+3	DD+3	DD+3	DD+3
Day 25	DD+4	DD+4	DD+4	DD+4
Day 26	DD+5	DD+5	DD+5	DD+5
Day 27	LDSN	LDSN	LSON	MDDN
Day 28	DD+7	DD+7	DD+7	DD+7
Day 29	DD+8	DD+8	DD+8	DD+8
Day 30	CAF1	CAF1	DD+9	CAF1
Day 31	CAFP	CAFP	CAF1	CAFP
Day 32	DD+11	DD+11	CAFP	DD+11
Day 33	LDMO	LDMO	BSEW	DD+12
Day 34	DD+13	DD+13		DD+13
Day 35	DD+14	DD+14		DD+14
Day 36	DD+15	DD+15		DD+15
Day 37	DD+16	DD+16		DD+16
Day 38	ODSN	ODSN		OPNL
Day 39	DD+18	DD+18		DD+18
Day 40	DD+19	DD+19		DD+19

Day 41	DD+20	DD+20		DD+20
Day 42	DD+21	DD+21		DD+21
Day 43	DD+22	DD+22		DD+22
Day 44	DD+23	DD+23		DD+23
Day 45	**MOUT**	**MOUT**		DD+24
Day 46				DD+25
Day 47				DD+26
Day 48				DD+27
Day 49				DD+28
Day 50				**OMDN**
Day 51				DD+30
Day 52				DD+31
Day 53				DD+32
Day 54				DD+33
Day 55				DD+34
Day 56				DD+35
Day 57				DD+36
Day 58				**MOUT**

Write Off Occurs 90 Days after final bills due.

WELCOME TO MISSOURI AMERICAN WATER

MISSOURI
AMERICAN WATER

WE KEEP LIFE FLOWING™

WELCOME TO MISSOURI AMERICAN WATER!

We look forward to serving you. Inside this booklet, you will find information on the following:

WATER & WASTEWATER SERVICE

INFRASTRUCTURE INVESTMENT

EMERGENCY NOTIFICATIONS

SERVICE ARRANGEMENTS

PAYMENT OPTIONS

LOW-INCOME ASSISTANCE PROGRAM

For additional information, visit our website at **www.missouriamwater.com**.

A Message from Missouri American Water President DEBBIE DEWEY

Welcome to Missouri American Water. We are proud to be your water and/or wastewater service provider. Every day, our teams deliver more than 230 million gallons of high-quality water to approximately 1.5 million Missourians across the state, while at the same time treating the wastewater from thousands of homes and businesses and returning it safely to the environment. We're dedicated to providing the best water and wastewater service to the communities we serve.

This guide will answer questions you may have about our company and the services we offer. We hope you will review its contents and keep it for future reference. If you have questions about Missouri American Water, please call our Customer Service Center at (866) 430-0820.

Sincerely,

Debbie Dewey
President, Missouri American Water

PROVIDING YOU HIGH-QUALITY WATER

We work closely with the United States Environmental Protection Agency, the Missouri Department of Natural Resources and other state authorities to provide water that meets and exceeds federal and state safety standards. Our parent company, American Water, has received more than 150 awards for superior water quality, and our water is 21 times better than the industry average. Our four surface water treatment plants in St. Louis County, as well as our treatment plants in Joplin and Jefferson City, have all been recently honored with 15-year Directors Awards from the Partnership for Safe Water, a recognition earned by fewer than 1 percent of all surface water treatment plants.

RELIABLE WASTEWATER TREATMENT

We provide communities with scientifically proven and environmentally sound solutions for collection, treatment and release of wastewater.

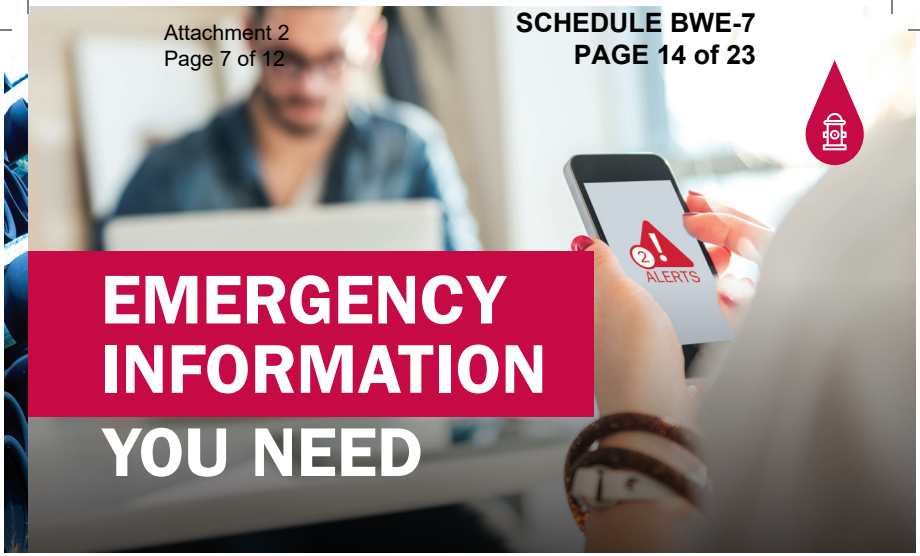
Below are a few examples of technology we implement:

- Membrane Bioreactors: A powerful and efficient solution for the treatment of wastewater.
- Biological Nutrient Removal: The removal of nutrients through an activated sludge system.
- UV Disinfection: Replacing chlorine with more environmentally friendly technologies for a safer, more efficient way to disinfect wastewater.

INVESTMENT YOU CAN COUNT ON

We continuously monitor, maintain and upgrade our facilities to ensure they operate efficiently and meet all regulatory standards. This requires investing in our infrastructure, including treatment plants, tanks, pump stations, fire hydrants and metering equipment.

Statewide, we invest approximately $80–130 million per year in infrastructure improvements. Our ongoing commitment to investing in and updating water and wastewater plants, pumps and pipelines helps ensure quality, reliable water service.



EMERGENCY INFORMATION YOU NEED

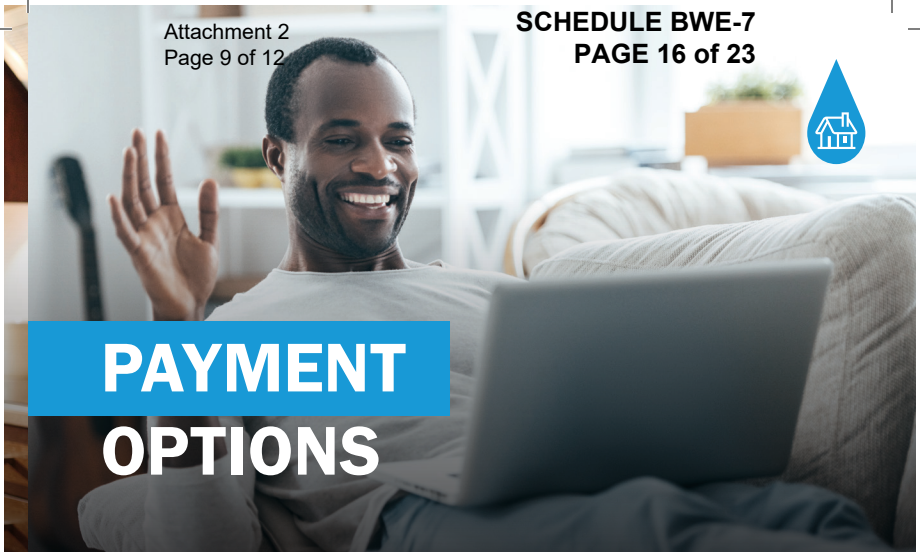
Missouri American Water uses a high-speed mass notification system to keep customers informed about water-related emergencies. This technology is used when direct notification by doorhangers is not possible. Make sure we can reach you by updating your contact information today at **www.missouriamwater.com** through **My Account** or by calling us at **(866) 430-0820.**

AROUND-THE-CLOCK CUSTOMER SERVICE

We've offered 24-hour customer service for years, but are making it even more convenient with our self-service website **My Account.** Here's what you can do from the comfort of your home:

- Turn water service on and off
- Track water use
- Sign up for emergency alerts
- Manage your account
- View and pay your bill
- Set up paperless billing

Sign up today by visiting
www.missouriamwater.com



PAYMENT OPTIONS

AUTOMATIC PAYMENTS: Payments will be made from your bank account automatically.

PAY ONLINE: Visit amwater.com/billpay. A $1.95 transaction fee applies for credit/debit card payments.

PAY BY PHONE: Call (855) 748-6066 and use your Visa or MasterCard. A $1.95 transaction fee applies.

PAY BY MAIL: Send your payment and payment stub in the envelope provided. No cash, staples or paper clips.

PAY IN PERSON: Visit our website to find a location near you. Locations DO NOT accept payments by mail.

OFFERING H20 HELP TO OTHERS

H2O Help to Others provides financial help to customers who are having trouble paying their bill. The program also connects customers with additional sources of aid in the community. The program is supported by contributions from Missouri American Water and customer donations. Contribute by checking the box on the back of your water bill.

An individual or family qualifies if they:

- Use Missouri American Water as their water provider
- Are in danger of having their water service terminated
- Meet the “basic needs” criteria set by Community Action Agency caseworkers

Apply by calling **(866) 430-0820.**

A document that provides the rights and responsibilities of the utility and its customers is available to all customers. Visit missouriamwater.com, click "Customer Service & Billing," and then click "Rights & Responsibilities" in the left sidebar to learn more about the rights and responsibilities, including the following:

(A) Billing and estimated billing procedures;

(B) Methods for customer verification of billing accuracy;

(C) Conditions of termination, discontinuance, and reconnection of service;

(D) Explanation of meter reading procedures which would enable a customer to read his/her own meter;

(E) A procedure where a customer may avoid discontinuance of service during a period of absence;

(F) The telephone number and address of a customer services office of the Missouri Public Service Commission, the commission's toll-free telephone number, and the statement that the company is regulated by the Missouri Public Service Commission;

(G) The address and telephone number of the Office of Public Counsel (OPC) and statement of the function of that office.

HOW TO CONTACT US

Our customer service representatives are dedicated to handling every customer inquiry with attention and care.

(866) 430-0820
Hours: 7 a.m.–7 p.m.
For emergencies, we're available 24/7.

infomo@amwater.com

www.missouriamwater.com

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MISSOURI AMERICAN WATER

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Monthly Statement

Account No. **1017-XXXXXXXXXXX**

Total Amount Due:	**$71.88**
Payment Due By:	**December 10, 2020**

Thank you for using AutoPay. Payment will be automatically deducted on the bill due date.

Billing Date: November 18, 2020
Service Period: Oct 17 to Nov 17 (32 Days)
Total Gallons: 4,100

Service Address:

CUSTOMER NAME
100 ANYWHERE STREET
CITY, MO 12345-1234

THANK YOU FOR BEING OUR CUSTOMER.

Important Account Messages

- Want to get to know us better? Visit www.missouriamwater.com to learn more about the services we provide.
- Thank you for being a long time customer! We work hard every day to deliver water service that is safe, reliable, and affordable -- our customers deserve nothing less.

For more information, visit www.missouriamwater.com

Account Summary – *See page 3 for Account Detail*

Prior Billing:		$67.80
Payments - Thank You!	-	$67.80
Balance Forward:	=	**$0.00**
Service Related Charges:	+	$71.30
Pass Through Charges:	+	$0.09
Taxes:	+	$0.49
Total Amount Due:	=	**$71.88**

View your account information or pay your bill anytime at: www.amwater.com/MyAccount

Pay by Phone*: Pay anytime at 1-855-748-6066
**A convenience fee may apply*

Customer Service: 1-866-430-0820
M-F 7:00am to 7:00pm – Emergencies 24/7

6 Please return bottom portion with your payment. DO NOT send cash. Retain upper portion for your records. 6

MISSOURI AMERICAN WATER

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P.O. BOX 91623
RANTOUL, IL 61866-8623

Account No. **1017-XXXXXXXXXXX**

Total Amount Due:	**$71.88**
Payment Due By:	**December 10, 2020**

If paying after 12/10/20, pay this amount: $72.96

Service to: 100 ANYWHERE STREET
CITY, MO 12345-1234

Amount Enclosed $ **Paid Electronically on Due Date**

CUSTOMER NAME
100 ANYWHERE STREET CITY, MO
12345-1234

MISSOURI AMERICAN WATER
PO BOX 6029
CAROL STREAM, IL 60197-6029

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Messages from Missouri American Water

- ***IMPORTANT WATER QUALITY MESSAGE: Your annual Water Quality Report can be viewed electronically at www.amwater.com/ccr/stlouisregion.pdf. If you prefer a paper copy to be sent to you, please contact our Customer Service Center at 866-430-0820.

- Effective 6/30/20, the Infrastructure System Replacement Surcharge (ISRS) per 1,000 gallons is $0.9629 for Rate A (residential & commercial), $0.0146 for Rate B (sale for resale), and $0.0140 for Rate J (large industrial). The ISRS funds completed water main replacements and related improvements for customers served by our St. Louis County operations. ISRS is implemented pursuant to Sections 393.1000, 393.1003, 393.1006, RSMo; 20 CSR 4240-2.060(1); and 20 CSR 4240-3.650. Additional information is available on our website at **www.missouriamwater.com.**

We use a high-speed notification system to quickly alert customers via phone, text and email when water emergencies occur. Visit **My Account** at **www.amwater.com/myaccount** to choose how you want to be notified and enter your contact information.

CUSTOMER SERVICE
1-866-430-0820

HOURS: M-F, 7am-7pm ▪ Emergencies: 24/7
TTY/TDD FOR THE HEARING IMPAIRED:
711 (and then reference Customer Service number listed above)

SERVICES

Go Paperless: Save time. Save money. Sign up for **Paperless Billing** and **Auto Pay** on My Account at amwater.com/myaccount. Not registered? Log in and be sure to have your account number handy.

Water Quality: We take water quality seriously. When it comes to complying with federal drinking water standards, we consistently score better than the industry average. For a copy of the annual water quality report for your area, visit missouriamwater.com. Under Water Quality, select Water Quality Reports.

H_2O Help To Others: H_2O Help to Others is an emergency assistance program created by Missouri American Water and Missouri's Community Action Agencies. The program helps provide supplemental funding to Missouri American Water customers who would otherwise have trouble paying their bills. H_2O Help to Others is supported by contributions from Missouri American Water and voluntary contributions from customers.

EXPLANATION OF OTHER TERMS

Payment by Check: Paying by check authorizes American Water to send the information from your check electronically to your bank for payment. The transaction will appear on your bank statement. The physical check will not be presented to your financial institution or returned to you.

Estimated Bill: This occurs when we are unable to read the water meter. Your usage from the same billing period the prior year is used to calculate the estimated bill. The next actual meter reading corrects any over or under estimates.

Disputes: If you have questions or complaints about your bill, please call us at 1-866-430-0820 before the due date. If your bill is unusually high, it may indicate that there is a leak in your plumbing. For tips on how to detect leaks and use water wisely, visit us online. You'll find helpful tools under the Water Information menu. Every drop counts!

Rates: A detailed listing of charges that make up your bill is available upon request by contacting Customer Service or visiting us online at missouriamwater.com. Under Customer Service & Billing, select Your Water and Sewer Rates.

Correspondence: Please send written correspondence to PO Box 578, Alton, IL 62002-0578. Be sure to include your name, account number, service address, mailing address and phone number including area code. Please do not send correspondence with your payment, as it may delay processing your payment and correspondence.

H2O HELP TO OTHERS PROGRAM - lend a hand to customers in need

☐ I'm adding a one time contribution of $_____ with my payment.
☐ I'd like to add a recurring contribution to each bill of $_____. I understand this amount will be added to each bill.

Address Change(s)

Name

Address

City

State Zip Code

( ) ☐ Mobile Number
Phone Number

E-mail Address

Other ways to pay your bill

Auto Pay
Save time and money. Enroll in Auto Pay, and your bill will be paid on time, every time, directly from your bank account on the due date. No stamps required!

Online
With My Account, you can pay your bill anytime, anywhere. Registration is fast and easy. Visit www.amwater.com/MyAccount or pay without registration at www.amwater.com/billpay (fee may apply).

In Person
We have agreements with several authorized payment locations in our service areas. Visit our website to find one near you.

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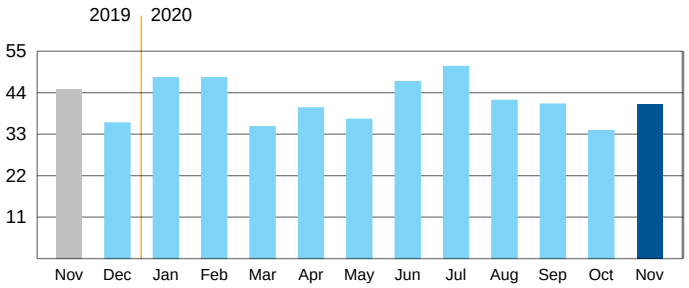
Meter Reading and Usage Summary

Meter No.	Measure	Size	From Date	To Date	Previous Read	Current Read	Meter Units	Billing Units	Total Gallons
XXXXXXXX	100 gal	5/8"	10/17/2020	11/17/2020	515 (A)	556 (A)	41	41.00	4,100

A = Actual E = Estimate 1 Billing Unit = 100 gallons Total Gallons: 4,100

Billed Usage History (graph shown in 100 gallons)

- 4,100 gallons = usage for this period
- 4,500 gallons = usage for same period last year



Next Scheduled Read Date: on or about December 16, 2020
Account Type: Residential

Average daily use for this period is: (32 days)

128 gallons

Year to Date Billed Usage: 46,400 gallons

Account Detail

Account No. 1017-XXXXXXXXXXX
Service To: 100 ANYWHERE STREET CITY, MO 12345-1234

Prior Billing		**67.80**
Payments		**-67.80**
Total payments as of Nov 10. Thank you!		-67.80
Balance Forward		**0.00**
Service Related Charges - 10/17/20 to 11/17/20		
Water Service		**32.55**
Water Service Charge		9.00
Water Usage Charge	(41 x $0.47814)	19.60
ISRS Surcharge	(41 x $0.09629)	3.95
Wastewater Service		**38.75**
Wastewater Service Charge	(1 x $38.75)	38.75
Total Service Related Charges		**71.30**
Pass Through Charges		**0.09**
Water Primacy Fee	(1 x $0.09)	0.09
Taxes		**0.49**
County Sales Tax		0.49
Total Current Period Charges		**71.88**

Total Amount Due **$71.88**

Understanding Your Bill

The information below defines some of the new terms you may find on your bill:

- **Service Related Charges:** This section includes charges for services related to water, wastewater and fire protection. If applicable, credits and debits for correction to previously billed charges are itemized in this section.
- **Fees and Adjustments:** This section provides details related to additional charges or adjustments for the service period referenced. Fees, when applicable, would include items such as service activation and late payment charges.
- **Pass Through Charges:** Charges in this section, when applicable, are separated from other service related charges to provide visibility into what portion of your bill is being remitted to other entities. Payment received for these charges does not remain with American Water. While we may bill and collect for them, the payments received are passed along to other companies and agencies.
- **Billing Units:** One billing unit equals 100 gallons of water used. If the meter serving your property measures your water use in cubic feet or a different unit of measure, we convert the usage to gallons to make it easier to understand.
- **Average Daily Use:** The gallons shown in the water droplet above represent your average daily water use for the current billing period. Tracking the amount of water you use can help you manage your overall water use from month to month.
- **Still have questions?** We are here to help. Our customer service representatives are available M–F, 7 a.m. to 7 p.m. More information on understanding your bill and charges can also be found on our website. See the link below.

For more information about your charges and rates, please visit: https://amwater.com/moaw/rates

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