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 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.:	MO-0040142
Owner:	City of Pevely
Address:	401 Main Street, Pevely, MO 63070
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Pevely WWTP
Facility Address:	9088 Plant Road, Pevely, MO 63070
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

authorizes activities pursuant to the terms and conditions of this permit in accordance with the Missouri Clean Water Law and/or the National Pollutant Discharge Elimination System; it does not apply to other regulated activities.

FACILITY DESCRIPTION

See Page 2

August 1, 2024
Effective Date

July 31, 2029
Expiration Date

John Hoke, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #002 – POTW
The use or operation of this facility shall be by or under the supervision of a Certified "B" Operator.
Mechanical bar screen / influent lift station / 2 extended aeration basins / 2 final clarifiers / UV disinfection / 2 aerobic sludge digesters / 3 sludge holding basins / biosolids are land applied

Design population equivalent is 18,000.
Design flow is 1.8 million gallons per day.
Actual flow is 942,000 gallons per day.
Design sludge production is 226.4 dry tons/year.

Legal Description:	Sec. 13, T41N, R5E, Jefferson County
UTM Coordinates:	X=726615, Y=4240048
Receiving Stream:	Tributary to Sandy Creek (C)
First Classified Stream and ID:	Presumed Use Streams (C) (5026)
USGS Basin & Sub-watershed No.:	(07140101-0803)

Permitted Feature INF – Influent Monitoring Location – Headworks

Legal Description:	Sec. 13, T41N, R5E, Jefferson County
UTM Coordinates:	X=726572, Y=4240164

OUTFALL #002	TABLE A-1. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in **Table A-2** must be achieved as soon as possible but no later than **August 1, 2029**. These interim effluent limitations in **Table A-1** are effective beginning **August 1, 2024** and remain in effect through **July 31, 2029**. 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	MONTHLY TOTAL	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Flow	MGD	*		*	once/day	24 hr. total
Total Flow Ω	MG		*		once/month	measured
EFFLUENT PARAMETER(S)	**UNITS**	**DAILY MAXIMUM**	**WEEKLY AVERAGE**	**MONTHLY AVERAGE**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/week	composite**
Total Suspended Solids	mg/L		30	20	once/week	composite**
E. coli (**Note 1**)	#/100mL		1,030	206	once/week	grab
Ammonia as N (January)	mg/L	12.0		2.4	once/week	composite**
Ammonia as N (February)	mg/L	10.1		2.4	once/week	composite**
Ammonia as N (March)	mg/L	12.0		2.4	once/week	composite**
Ammonia as N (April - September)	mg/L	5.3		1.3	once/week	composite**
Ammonia as N (October - December)	mg/L	12.0		2.4	once/week	composite**
Oil & Grease	mg/L	15		10	once/month	grab
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
Total Nitrogen (**Note 2**)	mg/L	*		*	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE SEPTEMBER 28, 2024.

* Monitoring requirement only.

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

Ω Total flow must be measured daily, including weekends and holidays.

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 – Total Nitrogen is calculated as; TN = Total Kjeldahl Nitrogen + Nitrate+Nitrite.

OUTFALL #002	TABLE A-1. (continued) INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in **Table A-2** must be achieved as soon as possible but no later than **August 1, 2029**. These interim effluent limitations in **Table A-1** are effective beginning **August 1, 2024** and remain in effect through **July 31, 2029**. 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		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Arsenic, Total Recoverable	µg/L	*		*	once/month	composite**
Copper, Total Recoverable	µg/L	*		*	once/month	composite**
Cyanide, amendable to chlorination	µg/L	*		*	once/month	grab
Selenium, Total Recoverable	µg/L	*		*	once/month	composite**
Thallium, Total Recoverable	µg/L	*		*	once/month	composite**
Total Hardness	mg/L	*		*	once/month	composite**

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units***	SU	6.5		9.0	once/week	grab

EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand$_5$ – Percent Removal (**Note 3**)	%	85	once/month	calculated
Total Suspended Solids – Percent Removal (**Note 3**)	%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE SEPTEMBER 28, 2029.

* 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.

Note 3 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(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 #002	TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. The final effluent limitations in **Table A-2** shall become effective on **August 1, 2029** 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	MONTHLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Flow	MGD	*		*	once/day	24 hr. total
Total Flow Ω	MG		*		once/month	measured
EFFLUENT PARAMETER(S)	**UNITS**	**DAILY MAXIMUM**	**WEEKLY AVERAGE**	**MONTHLY AVERAGE**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/week	composite**
Total Suspended Solids	mg/L		30	20	once/week	composite**
E. coli (**Note 1**)	#/100mL		1,030	206	once/week	grab
Ammonia as N (January)	mg/L	12.0		2.4	once/week	composite**
Ammonia as N (February)	mg/L	10.1		2.4	once/week	composite**
Ammonia as N (March)	mg/L	12.0		2.4	once/week	composite**
Ammonia as N (April- September)	mg/L	5.3		1.3	once/week	composite**
Ammonia as N (October-December)	mg/L	12.0		2.4	once/week	composite**
Oil & Grease	mg/L	15		10	once/month	grab
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
Total Nitrogen (**Note 2**)	mg/L	*		*	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE SEPTEMBER 28, 2029.

* Monitoring requirement only.

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

Ω Total flow must be measured daily, including weekends and holidays.

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 – Total Nitrogen is calculated as; TN = Total Kjeldahl Nitrogen + Nitrate+Nitrite.

OUTFALL #002	TABLE A-2. (continued) FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. The final effluent limitations in **Table A-2** shall become effective on **August 1, 2029** 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		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Arsenic, Total Recoverable	µg/L	*		*	once/month	composite**
Copper, Total Recoverable	µg/L	38.2		18.7	once/month	composite**
Cyanide, amendable to chlorination	µg/L	*		*	once/month	grab
Selenium, Total Recoverable	µg/L	9.2		3.2	once/month	composite**
Thallium, Total Recoverable	µg/L	*		*	once/month	composite**
Total Hardness	mg/L	*		*	once/month	composite**
EFFLUENT PARAMETER(S)	**UNITS**	**MINIMUM**		**MAXIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
pH – Units***	SU	6.5		9.0	once/week	grab
EFFLUENT PARAMETER(S)			**UNITS**	**MONTHLY AVERAGE MINIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Biochemical Oxygen Demand$_5$ – Percent Removal (**Note 3**)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (**Note 3**)			%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE SEPTEMBER 28, 2029.

* 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.

Note 3 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(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.

PERMITTED FEATURE INF	TABLE B-1. INFLUENT MONITORING REQUIREMENTS

The monitoring requirements in **Table B-1** shall become effective on **August 1, 2024** and remain in effect until expiration of the permit. The influent wastewater shall be monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: IM						
Biochemical Oxygen Demand$_5$ (**Note 3**)	mg/L			*	once/month	composite**
Total Suspended Solids (**Note 3**)	mg/L			*	once/week	composite**
Ammonia as N	mg/L	*		*	once/month	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE SEPTEMBER 28, 2024.

* 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 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(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.

C. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations as soon as possible but in no case later than **five (5) years** of the effective date of this permit.

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

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

3. Within **five (5) years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits for Total Recoverable Copper and Total Recoverable Selenium.

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 August 1, 2019, and hereby incorporated as though fully set forth herein. Annual reports required per Standard Conditions Part III Section K shall be submitted online to the department via the department's eDMR system as an attachment. This supersedes Standard Conditions Part III Section K #4. EPA reports shall continue to be submitted online via the Central Data Exchange system.

E. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as "WET Test Chronic Outfall 002 Jan 2023," or "Outfall 004 Daily Data Mar 2025."
   (a) eDMR Registration Requirements. The permittee must register with the department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. Information about the eDMR system can be found at https://dnr.mo.gov/water/business-industry-other-entities/reporting/electronic-discharge-monitoring-reporting-system-edmr. The first user shall register as an Organization Official and the association to the facility must be approved by the department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only department approved reporting method for this permit unless a waiver is granted by the department. See paragraph (c) below.
   (b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://apps5.mo.gov/mogems/welcome.action. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.
   (c) 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: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. The department will either approve or deny this electronic reporting waiver request within 120 calendar days.

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 §644.051.19 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 or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.

3. All outfalls must be clearly marked in the field.

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

5. 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) See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, No. 4 regarding proper testing and method minimum levels used for sample analysis.
   (c) The permittee shall not report a sample result as "Non-Detect" without also reporting the method minimum level of the test. Reporting as "Non Detect" without also including the method minimum level, will be considered failure to report, which is a violation of this permit.
   (d) The permittee shall provide the "Non-Detect" sample result using the less than symbol and the method minimum level (e.g., <50 µg/L, if the method minimum level for the parameter is 50 µg/L).
   (e) Where the permit contains a department determined Minimum Quantification 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.
   (f) For the daily maximum, the facility shall report the highest value. If the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method minimum level.
   (g) For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.
   (h) For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

E. SPECIAL CONDITIONS (continued)

(i) When *E. coli* is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means.
(j) See the Fact Sheet Appendix - Non-Detect Example Calculations for further guidance.

6. 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. Upon approval of the request, the department will modify the permit.

7. The permittee shall continue to implement and update, if necessary, the program for maintenance and repair of its collection system. The permittee may compare collection system performance results and other data with the benchmarks used in the departments' Capacity, Management, Operation, And Maintenance (CMOM) Model, located at https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template. Additional information regarding the departments' CMOM Model is available at https://dnr.mo.gov/print/document-search/pub2574.

   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 specific 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.

8. 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: https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem 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.

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

10. 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.

11. An all-weather access road to the treatment facility shall be maintained.

12. The outfall sewer shall be protected and maintained against the effects of floodwater, ice, or other hazards as to reasonably ensure its structural stability, freedom from stoppage, and 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.

13. The sludge holding basins shall be operated and maintained to ensure their structural integrity, which includes maintaining adequate freeboard and keeping the berms free of deep-rooted vegetation, animal dens, or other potential sources of damage.

14. The facility shall ensure that adequate provisions are provided to prevent or minimize surface water intrusion into the sludge holding basins and to divert stormwater runoff around the sludge holding basins and protect embankments from erosion.

15. Stormwater Pollution Prevention Plan (SWPPP): A SWPPP must be implemented upon permit issuance. Through implementation of the SWPPP, the permittee shall minimize the release of pollutants in stormwater from the facility to the waters of the state. The SWPPP shall be developed in consultation with the concepts and methods described in the following document: Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in June 2015.

E. SPECIAL CONDITIONS (continued)

(a) The SWPPP must identify any stormwater outfall from the facility and Best Management Practices (BMPs) used to prevent or reduce the discharge of contaminants in stormwater. The stormwater outfalls shall either be marked in the field or clearly marked on a map and maintained with the SWPPP.
(b) The SWPPP must include a schedule and procedures for a once per month routine site inspection.
  (1) The monthly routine inspection shall be documented in a brief written report, which shall include:
    i. The person(s) conducting the inspection.
    ii. The inspection date and time.
    iii. Weather information for the day of the inspection.
    iv. Precipitation information for the entire period since the last inspection.
    v. Description of the discharges observed, including visual quality of the discharges (sheen, turbid, etc.).
    vi. Condition of BMPs
    vii. If BMPs were replaced or repaired.
    viii. Observations and evaluations of BMP effectiveness.
  (2) Any deficiency observed during the routine inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
  (3) The routine inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
  (4) The routine inspection reports shall be made available to department personnel upon request.
(c) The SWPPP must include a schedule and procedures for a once per year comprehensive site inspection.
  (1) The annual comprehensive inspection shall be documented in a written report, which shall include:
    i. The person(s) conducting the inspection.
    ii. The inspection date and time.
    iii. Findings from the areas of your facility that were examined;
    iv. All observations relating to the implementation of your control measures including:
      1. Previously unidentified discharges from the site,
      2. Previously unidentified pollutants in existing discharges,
      3. Evidence of, or the potential for, pollutants entering the drainage system;
      4. Evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, and
      5. Additional control measures needed to address any conditions requiring corrective action identified during the inspection.
    v. Any required revisions to the SWPPP resulting from the inspection;
    vi. Any incidence of noncompliance observed or a certification stating that the facility is in compliance with Special Condition E.16.
  (2) Any deficiency observed during the comprehensive inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
  (3) The comprehensive inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
  (4) The comprehensive inspection reports shall be made available to department personnel upon request.
(d) The SWPPP must be kept on-site and should not be sent to the department unless specifically requested.
(e) The SWPPP must be reviewed and updated at a minimum once per permit cycle, as site conditions or control measures change.

16. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP.
  (a) Permittee shall adhere to the following minimum Best Management Practices (BMPs):
    (1) Minimize the exposure of industrial material storage areas, loading and unloading areas, dumpsters and other disposal areas, maintenance activities, and fueling operations to rain, snow, snowmelt, and runoff, by locating industrial materials and activities inside or protecting them with storm resistant coverings, if warranted and practicable.
    (2) Provide good housekeeping practices on the site to prevent potential pollution sources from coming into contact with stormwater and provide collection facilities and arrange for proper disposal of waste products, including sludge.
    (3) Implement a maintenance program to ensure that the structural control measures and industrial equipment is kept in good operating condition and to prevent or minimize leaks and other releases of pollutants.
    (4) Prevent or minimize the spillage or leaks of fluids, oil, grease, fuel, etc. from equipment and vehicle maintenance, equipment and vehicle cleaning, or activities.
    (5) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed.
    (6) Provide stormwater runoff controls to divert, infiltrate, reuse, contain, or otherwise minimize pollutants in the stormwater discharge.
    (7) Enclose or cover storage piles of salt or piles containing salt, used for deicing or other commercial or industrial purposes.

E. SPECIAL CONDITIONS (continued)

(8) Provide training to all employees who; work in areas where industrial materials or activities are exposed to stormwater, are responsible for stormwater inspections, are members of the Pollution Prevention Team. Training must cover the specific control measures and monitoring, inspection, planning, reporting and documentation requirements of this permit. Training is recommended annually for any applicable staff and whenever a new employee is hired who meets the description above.
(9) Eliminate and prevent unauthorized non-stormwater discharges at the facility.
(10) Minimize generation of dust and off-site tracking of raw, final, or waste materials by implementing appropriate control measures.

17. Renewal Application Requirements.
(a) This facility shall submit an appropriate and complete application to the department no less than 180 days prior to the expiration date listed on Page 1 of the permit.
(b) Application materials shall include a completed Form B2.
(1) For Part B, Additional Application Information #14 Effluent Testing Data, the permittee shall submit at a minimum, effluent testing data based on at least three samples for each outfall through which effluent is discharged. The samples must be no more than four and one-half years apart.
i. Sufficiently sensitive analytical methods must be used. 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. 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.
(2) For Part D, Expanded Effluent Testing Data #18, the permittee shall submit at a minimum, effluent testing data based on at least three pollutant scans for each outfall through which effluent is discharged. The pollutant scans must be performed no more than four and one-half years prior to the date of the permit application submittal.
i. Sufficiently sensitive analytical methods must be used. See Special Condition 17(b)(i)1 above for more information.
(3) For Part E, Toxicity Testing Data #19, the facility shall submit at a minimum, either 4 quarterly tests 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 date of the permit application submittal, for each of the facility's discharge points.
(4) For Part F, Industrial User Discharges and RCRA/CERCLA Wastes, if the treatment works accepts process wastewater from any significant industrial users, also known as SIUs, or receives a RCRA or CERCLA wastes, the permittee shall complete the applicable portions of #20, #21, #22, and/or #23 for each SIU and/or remedial waste accepted.
i. SIUs are defined as:
1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
2. Any other industrial user that meets one or more of the following:
a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
b. Contributes a process waste stream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the treatment plant.
c. Is designated as an SIU by the control authority.
d. Is otherwise required by the permitting authority to provide the information.
(c) Complete the Financial Questionnaire (https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511) and submit it with your application.

F. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to §621.250 and §644.051.9 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0040142
PEVELY WWTP

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" §644, RSMo, 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.

Part I – Facility Information

Application Date: 05/09/2021
Expiration Date: 12/31/2021

Facility Type and Description: POTW - Mechanical bar screen / influent lift station / 2 extended aeration basins / 2 final clarifiers / UV disinfection / 2 aerobic sludge digesters, 3 sludge holding basins / biosolids are land applied

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#002	2.785	Secondary	Domestic

Comments:
Changes in this permit for Outfall #002 include the addition of monthly monitoring for Arsenic, Cyanide, and Thallium, the revision of ammonia daily maximum limit for February, the revision of sampling frequency for Oil & Grease from weekly to monthly, the revision of sampling frequency for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate+Nitrite (components of Total Nitrogen), and Total Nitrogen from quarterly to monthly, the revision of sampling frequency of Copper and Selenium from quarterly to monthly and establishment of limits, the revision of sampling frequency for Total Hardness from quarterly to monthly, and the revision of sampling frequency for BOD_5 and TSS Percent Removal from quarterly to monthly, the removal of Chromium VI, and the removal of Acute and Chronic WET tests. Changes in this permit include the addition of Permitted Feature INF and the associated influent samples for BOD_5, TSS, Ammonia, Total Kjeldahl Nitrogen, Nitrate+Nitrite, and Total Phosphorus. See Part II of the Fact Sheet for further information regarding the addition, revision, and removal of influent, instream, and effluent parameters. Special conditions were updated to include the addition of inflow and infiltration reporting requirements, reporting of non-detects, bypass reporting requirements, pretreatment requirements, and the Electronic Discharge Monitoring Report (eDMR) Submission System. The MUDD (C) (3960) receiving stream from the previous permit is now Presumed Use Streams (C) (5026) as the WBID is now based on the HUC 12 basin.

Part II – Effluent Limitations and Monitoring Requirements

OUTFALL #002 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the permit are based on current operations of the facility, outfall location, and receiving stream. 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.

OUTFALL #002 - RECEIVING STREAM INFORMATION

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES**	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Presumed Use Streams* (Tributary to Sandy Creek)	C	5026	AHP(WWH), WBC-B, SCR, HHP, IRR, LWP	07140101-0803	0

* The previous permit identified MUDD WBID #3960. This change is due to a new numbering system and new naming convention of the streams, and the actual receiving stream has not changed.

**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)(F)].

Uses found in the receiving streams table, above:

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

AHP = Aquatic Habitat Protection - To ensure the protection and propagation of fish, shellfish, and wildlife. AHP is further subcategorized as:

WWH = Warm Water Habitat;
CLH = Cool Water Habitat;
CDH= Cold Water Habitat;
EAH = Ephemeral Aquatic Habitat;
MAH = Modified Aquatic Habitat;
LAH = Limited Aquatic Habitat.

This permit uses Aquatic Life Protection effluent limitations in 10 CSR 20-7.031 Table A for all aquatic habitat designations unless otherwise specified.

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

WBC = Whole Body Contact recreation where the entire body is capable of being submerged. WBC is further subcategorized as:

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)(F)3. to 7.:

HHP = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption;
LWP = Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife;
DWS = Drinking water supply;
IND = Industrial water supply

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

WSA = Storm- and flood-water storage and attenuation;
WHP = Habitat for resident and migratory wildlife species;
WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses;
WHC = Hydrologic cycle maintenance.

10 CSR 20-7.031(6):

GRW = Groundwater

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Presumed Use Streams (Tributary to Sandy Creek)	0	0	0

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B(I)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

Receiving Water Body's Water Quality

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

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

- ✓ This facility does not discharge to a 303(d) listed stream.

- ✓ This facility discharges to a stream with an EPA approved TMDL.

  - o This facility discharges to a stream with an EPA approved TMDL. The TMDL for the Mississippi River was approved by the EPA on November 3, 2006. The pollutants of concern were Chlordane and Polychlorinated Biphenyls. The TMDL discusses that there are no Missouri facilities which discharge either directly to the Mississippi River, or a tributary to, that have a potential to discharge detectable amounts of PCBs or chlordane. Therefore, the Pevely WWTP is not considered a source of the pollutants of concern.

  - o This facility discharges to a stream with an EPA approved TMDL. The TMDL for the Mississippi River was approved by the EPA on December 9, 2010. The pollutants of concern were Lead and Zinc. The TMDL lists that the pollutant source is the Herculaneum Smelter and discusses that based on the prior assessment of sources and the distribution of excursions from water quality standards at monitoring locations, the loading of dissolved lead and zinc originates from the Herculaneum Smelter and historic source areas (i.e., Herculaneum slag pile). Therefore, the Pevely WWTP is not considered a source of the pollutants of concern.

- ✓ The department has not conducted a stream survey for this waterbody. When a stream survey is conducted, more information may be available about the receiving stream.

CHANGES TO EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit / Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Flow	MG	1		*		***	1/month	monthly	M
Ammonia as N (February)	mg/L	2, 3	10.1		2.4	12.0/2.4	1/week	monthly	C
Oil & Grease	mg/L	1, 3	15		10	15/10 1/week	1/month	monthly	G
Total Phosphorus	mg/L	1	*		*	*/* 1/quarter	1/month	monthly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	*/* 1/quarter	1/month	monthly	C
Nitrite + Nitrate	mg/L	1	*		*	*/* 1/quarter	1/month	monthly	C
Total Nitrogen	mg/L	7	*		*	*/* 1/quarter	1/month	monthly	C
Arsenic, Total Recoverable	µg/L	7	*		*	***	1/month	monthly	C
Copper, Total Recoverable	µg/L	2, 3	38.2		18.7	*/* 1/quarter	1/month	monthly	C
Selenium, Total Recoverable	µg/L	2, 3	9.2		3.2	*/* 1/quarter	1/month	monthly	C
Cyanide, ATC	µg/L	7	*		*	***	1/month	monthly	G
Thallium, Total Recoverable	µg/L	7	*		*	***	1/month	monthly	C
Total Hardness	mg/L	7	*		*	*/* 1/quarter	1/month	monthly	C
BOD_5 Percent Removal	%	1			85	85 1/quarter	1/month	monthly	M
TSS Percent Removal	%	1			85	85 1/quarter	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
M = Measured/calculated

Basis for Limitations Codes:

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

OUTFALL #002 – 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.

- **Total Flow**. Total flow is for purposes of calculating statewide mass-based loading of Total Phosphorus and is also used to ensure compliance with mass-based loading Total Phosphorus limits.

- **Biochemical Oxygen Demand (BOD_5)**. Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average. Please see the attached 2004 Water Quality Review Sheet.

- **Total Suspended Solids (TSS)**. Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average. Please see the attached 2004 Water Quality Review Sheet.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1,030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). 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**. Permit retains previous limits except where the applicable water quality based effluent limits (WQBELs) are more stringent. 1.3 mg/L as a Monthly Average and 5.3 mg/L as a Daily Maximum for April – September. 2.4 mg/L as a Monthly Average and 12.1 mg/L as a Daily Maximum for October – March, except for February, where the Daily Maximum is 10.1 mg/L based on the WQBEL. The existing limits or more stringent WQBELs are determined by the department to be protective of water quality and prevent increased pollutant loading. The below table highlights the applied effluent limits based on the most protective concentrations.

MONTH	Water Quality Based Effluent Limits (present calculation method)		Previous Effluent Limits	
	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
January	12.1	3.1	12.0	2.4
February	10.1	2.7	12.0	2.4
March	12.1	3.1	12.0	2.4
April	12.1	2.7	5.3	1.3
May	12.1	2.2	5.3	1.3
June	12.1	1.7	5.3	1.3
July	12.1	1.5	5.3	1.3
August	10.1	1.3	5.3	1.3
September	12.1	1.8	5.3	1.3
October	12.1	2.5	12.0	2.4
November	12.1	3.1	12.0	2.4
December	12.1	3.1	12.0	2.4

Green cells are final effluent limits (Tables A-1 & A-2)

  - **Total Ammonia Nitrogen (previous limits) -** The previous effluent limits for ammonia were calculated using the 2007 Ammonia Guidance method for derivation of ammonia limits.

  - **Total Ammonia Nitrogen (WQBEL)** - 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.

    The department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA's Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average. The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation:

$$Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)}$$

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

    In the event that mixing considerations derive an AML less stringent than the MDL, the AML and MDL will be equal and based on the MDL.

Month	Temp (˚C)*	pH (SU)*	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
January	8.1	7.8	3.1	12.1
February	9.3	7.9	2.7	10.1
March	13.0	7.8	3.1	12.1
April	16.7	7.8	2.7	12.1
May	20.0	7.8	2.2	12.1
June	24.0	7.8	1.7	12.1
July	26.6	7.8	1.5	12.1
August	26.5	7.9	1.3	10.1
September	23.5	7.8	1.8	12.1
October	18.0	7.8	2.5	12.1
November	14.0	7.8	3.1	12.1
December	10.0	7.8	3.1	12.1

* Ecoregion data (Ozark Highlands)

January
Chronic WLA: Ce = ((2.7850115 + 0)3.1 – (0 * 0.01)) / 2.7850115
Ce = 3.1

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

February
Chronic WLA: Ce = ((2.7850115 + 0)2.7 – (0 * 0.01)) / 2.7850115
Ce = 2.7

Acute WLA: Ce = ((2.7850115 + 0)10.1 – (0 * 0.01)) / 2.7850115
Ce = 10.1

AML = WLAc = 2.7 mg/L
MDL = WLAa = 10.1 mg/L

March
Chronic WLA: Ce = ((2.7850115 + 0)3.1 – (0 * 0.01)) / 2.7850115
Ce = 3.1

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

April
Chronic WLA: Ce = ((2.7850115 + 0)2.7 – (0 * 0.01)) / 2.7850115
Ce = 2.7

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 2.7 mg/L
MDL = WLAa = 12.1 mg/L

May
Chronic WLA: Ce = ((2.7850115 + 0)2.2 – (0 * 0.01)) / 2.7850115
Ce = 2.2

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 2.2 mg/L
MDL = WLAa = 12.1 mg/L

June
Chronic WLA: Ce = ((2.7850115 + 0)1.7 – (0 * 0.01)) / 2.7850115
Ce = 1.7

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 1.7 mg/L
MDL = WLAa = 12.1 mg/L

July
Chronic WLA: Ce = ((2.7850115 + 0)1.5 – (0 * 0.01)) / 2.7850115
Ce = 1.5

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 1.5 mg/L
MDL = WLAa = 12.1 mg/L

August
Chronic WLA: Ce = ((2.7850115 + 0)1.3 – (0 * 0.01)) / 2.7850115
Ce = 1.3

Acute WLA: Ce = ((2.7850115 + 0)10.1 – (0 * 0.01)) / 2.7850115
Ce = 10.1

AML = WLAc = 1.3 mg/L
MDL = WLAa = 10.1 mg/L

September
Chronic WLA: Ce = ((2.7850115 + 0)1.8 – (0 * 0.01)) / 2.7850115
Ce = 1.8

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 1.8 mg/L
MDL = WLAa = 12.1 mg/L

October
Chronic WLA: Ce = ((2.7850115 + 0)2.5 – (0 * 0.01)) / 2.7850115
Ce = 2.5

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 2.5 mg/L
MDL = WLAa = 12.1 mg/L

November
Chronic WLA: Ce = ((2.7850115 + 0)3.1 – (0 * 0.01)) / 2.7850115
Ce = 3.1

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

December
Chronic WLA: Ce = ((2.7850115 + 0)3.1 – (0 * 0.01)) / 2.7850115
Ce = 3.1

Acute WLA: Ce = ((2.7850115 + 0)12.1 – (0 * 0.01)) / 2.7850115
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

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

- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate + Nitrite, & Total Nitrogen**. Effluent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate+Nitrite are required per 10 CSR 20-7.015(9)(D)8. Effluent monitoring for Total Nitrogen is required per 10 CSR 20-6.010(8)(B). Total Nitrogen is calculated as Total Kjeldahl Nitrogen + Nitrate+Nitrite.

- **pH**. 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU.

- **Cyanide, Amenable to Chlorination**. Monitoring only requirement. The Expanded Effluent Test data submitted with the permit application contained a value that was above the Water Quality Standard for this parameter. The monthly testing for the permit cycle will provide data for the permit writer during the next permit renewal to conduct a Reasonable Potential Analysis to determine if the discharge has the potential to violate Water Quality Standards for Cyanide.

- **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 BOD_5 and 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 BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.

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

Metals
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support Document for Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply. Effluent water hardness of 290.5 mg/L is used in the calculation below. This value represents the 50th percentile (median) for all sample data submitted to the department by the facility in compliance with the monitoring requirements of the operating permit.

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

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Arsenic	1	1
Copper	0.960	0.960
Selenium	NA	1

- **Arsenic, Total Recoverable**. Monitoring only requirement. The Expanded Effluent Test data submitted with the permit application contained values that were above the Water Quality Standard for this parameter. The monthly testing for the permit cycle will provide data for the permit writer during the next permit renewal to conduct a Reasonable Potential Analysis to determine if the discharge has the potential to violate Water Quality Standards for Arsenic.

- **Copper, Total Recoverable**. Protection of Aquatic Life Acute Criteria = 36.696 µg/L, Chronic Criteria = 22.277 µg/L. The hardness value of **290.5 mg/L** represents the 50th percentile (median) of the effluent.

  Acute AQL: e^(1.0166 * ln290.5 – 3.062490) * (1.136672 – ln290.5 *0.041838) = 36.696 µg/L [at hardness 290.5]
  Chronic AQL: e^(0.7977 * ln290.5 – 3.909) * (1.101672 – ln290.5*0.041938) = 22.277 µg/L

  TR Conversion: AQL/Translator = 36.696 / 0.96 = 38.225
  TR Conversion: AQL/Translator = 22.277 / 0.96 = 23.205

  Acute WLA: Ce = ((2.785 cfs + 0 cfs) * 38.225 – (0 cfs * 0 background)) / 2.785 cfs = 38.225
  Chronic WLA: Ce = ((2.785 cfs + 0 cfs) * 23.205 – (0 cfs * 0 background)) / 2.785 cfs = 23.205

  LTAa: WLAa * LTAa multiplier = 38.225 * 0.312 = 11.911 [CV: 0.621, 99th percentile]
  LTAc: WLAc * LTAc multiplier = 23.205 * 0.517 = 11.992 [CV: 0.621, 99th percentile]

  Use most protective LTA: 11.911

  Daily Maximum: MDL = LTA * MDL multiplier = 11.911 * 3.209 = 38.2 µg/L [CV: 0.621, 99th percentile]
  Monthly Average: AML = LTA * AML multiplier = 11.911 * 1.574 = 18.7 µg/L [CV: 0.621, 95th percentile, n=4]

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

  Chronic AQL: 5 µg/L

  Chronic WLA: Ce = ((2.785 cfs + 0 cfs) * 5 – (0 cfs * 0 background)) / 2.785 cfs = 5

  LTAc: WLAc * LTAc multiplier = 5 * 0.27 = 1.352 [CV: 1.462, 99th percentile]

  Daily Maximum: MDL = LTA * MDL multiplier = 1.352 * 6.79 = 9.2 µg/L [CV: 1.462, 99th percentile]
  Monthly Average: AML = LTA * AML multiplier = 1.352 * 2.369 = 3.2 µg/L [CV: 1.462, 95th percentile, n=4]

- **Thallium, Total Recoverable**. Monitoring only requirement. The Expanded Effluent Test data submitted with the permit application contained a value that was above the Water Quality Standard for this parameter. The monthly testing for the permit cycle will provide data for the permit writer during the next permit renewal to conduct a Reasonable Potential Analysis to determine if the discharge has the potential to violate Water Quality Standards for Thallium.

Sampling Frequency Justification: The department has determined that previously established sampling and reporting frequency is sufficient to characterize the facility's effluent and be protective of water quality, except for Oil & Grease, which was reduced to monthly, Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Total Nitrogen, which was increased to monthly, Copper, Selenium, and Total Hardness, which was increased to monthly, and BOD_5 and TSS Percent Removal which was increased to monthly. Monthly sampling is required for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate+Nitrite per 10 CSR 20-7.015(9)(D)8.B. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)7.A.

Sampling Type Justification: As per 10 CSR 20-7.015, samples collected for mechanical plants shall be a 24-hour composite sample. Grab samples, however, must be collected for pH, *E. coli*, Oil & Grease, and Cyanide, in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

PERMITTED FEATURE INF – INFLUENT MONITORING
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.

CHANGES TO INFLUENT MONITORING:

PARAMETER	Unit	Basis for Limits	Daily Maximum		Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
BOD_5	mg/L	1			*	*/* 1/quarter	1/month	monthly	C
TSS	mg/L	1			*	*/* 1/quarter	1/week	monthly	C
Ammonia as N	mg/L	1	*		*	***	1/month	monthly	C
Total Phosphorus	mg/L	1	*		*	***	1/month	monthly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	***	1/month	monthly	C
Nitrite + Nitrate	mg/L	1	*		*	***	1/month	monthly	C

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

**** - C = 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
10. Multiple Discharger Variance
11. Nutrient Criteria Implementation Plan

Influent Parameters

- **Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS)**. An influent sample is required to determine the removal efficiency. 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 BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals.

- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia**. Influent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia required per 10 CSR 20-7.015(9)(D)8.

Sampling Frequency Justification: The sampling and reporting frequencies for Total Phosphorus and Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia parameters were established to match the required sampling frequency of these parameters in the effluent, per 10 CSR 20-7.015(9)(D)8. The sampling and reporting frequency for influent BOD_5 has been established to match the required sampling frequency of the parameter in the effluent. The sampling and reporting frequency for influent TSS has been established to match the required sampling frequency of the operational monitoring found in 10 CSR 20-9.010(5)(B)2.

Sampling Type Justification: Sample types for influent parameters were established to match the required sampling type of these parameters in the effluent. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

OUTFALL #002 – 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 §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 §644.006 to §644.141 RSMo of the Missouri Clean Water Law or any standard, rule or regulation promulgated by the commission.

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on August 30, 2022, no evidence of an excursion of this criterion has been observed by the department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with effluent limits that are more stringent than 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) Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state. Please see (D) above as justification is the same.

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

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

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

(I) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, §260.200 RSMo, except as the use of such materials is specifically permitted pursuant to §260.200 - 260.247 RSMo. 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 III – 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(40)] & [10 CSR 20-7.031(1)(O)].

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.

  - **Oil & Grease Sampling Frequency**. The sampling frequency was reduced from weekly to monthly. Discharge monitoring data submitted by the permittee shows that operations at the facility have been consistent and have low variability. Therefore, the department has found the permittee eligible for reduced monitoring frequencies. The reduction

of the sampling frequency of the parameter meets the requirements of the safety clause, as the removal will not result in a violation of a water quality standard.

- **Total Dissolved Chromium VI**. A reasonable potential determination for Chromium VI. was made using new DMR data. As a result, it was determined that there is no reasonable potential to cause an excursion of water quality standards for Chromium VI, in the receiving stream, and this parameter was removed from the permit. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (new DMR data). This new information justifies the removal of the monitoring requirements at the time of permit issuance. Also, the removal of the monitoring requirements also meets the requirements of the safety clause, as the removal of the monitoring requirements will not result in a violation of a water quality standard.

- **Acute Whole Effluent Toxicity (WET) test**. The previous permit included requirements to conduct an Acute WET test once per year. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. Also, the facility has passed previous Acute WET tests. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for acute toxicity at this time and the Acute WET testing requirements have been removed from this permit. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (previous passing WET tests). This new information justifies the removal of the test at the time of permit issuance. Also, the removal of the test also meets the requirements of the safety clause, as the removal will not result in a violation of a water quality standard.

- **Chronic Whole Effluent Toxicity (WET) test**. The previous permit included requirements to conduct a Chronic WET test once during the permit cycle. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. Also, the facility has passed a previous Chronic WET test. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for chronic toxicity at this time and the Chronic WET testing requirements have been removed from this permit. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (previous passing WET tests). This new information justifies the removal of the test at the time of permit issuance. Also, the removal of the test also meets the requirements of the safety clause, as the removal will not result in a violation of a water quality standard.

o 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 II – Effluent Limitations and Monitoring Requirements for more information regarding the reasonable potential determinations for each general criterion related to this facility.

- The previous permit indicated "There Shall Be No Discharge of Floating Solids or Visible Foam in Other Than Trace Amounts" under each table. The statement was not evaluated against actual site conditions; therefore, this general criteria was re-assessed. It was determined that this facility does not discharge solids or foam in amounts which would indicate reasonable potential, therefore the statement was removed. Each general criteria was assessed for 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 https://dnr.mo.gov/document-search/antidegradation-implementation-procedure.

✓ No degradation was proposed in this permit action and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

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

✓ The facility must review and maintain stormwater BMPs as appropriate.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(2)(C)], an applicant may utilize a lower preference continuing authority when a higher level authority is available by submitting information as part of the application to the department for review and approval, provided it 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.

✓ Permittee is authorized to land apply biosolids in accordance with Standard Conditions III. If other methods to remove and dispose (landfill, haul to another permitted treatment facility, etc.) of sludge/biosolids are needed and that method is not listed in the current permit, the permittee must modify the operating permit to add any biosolids/sludge disposal method to the facility description of the operating permit. For time sensitive situations, the permittee may contact the department to see about approval for a one-time removal and disposal of sludge/biosolids that are not identified in the facility description of the operating permit.

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.

Facility Performance History:

✓ The facility is not currently under Water Protection Program enforcement action. This facility was last inspected on August 30, 2022. The inspection showed the following unsatisfactory features: The City failed to satisfy sludge sampling requirements, including failure to collect sludge samples during land application periods and meet the required sludge sampling frequencies (based on design sludge production) during the 2021 calendar year, as per MO0040142 Standard Conditions Part III, no satisfactory records for daily precipitation and DO in aerobic sludge digesters were found. Thus, the City failed to demonstrate that all the applicable operational monitoring requirements under 10 CSR 20-9.010 and MO-0040142 Special Permit Condition #D.10, are satisfied, vegetation growth along the berm perimeter of the sludge holding basin was observed at the time of the inspection, which is not consistent with requirements under MO-0040142 Special Condition #D.21. On September 23, 2022, a sufficient response was received by the department to the required actions in the September 22, 2022 report, and the facility was returned to compliance.

CONTINUING AUTHORITY:
Each application for an operating permit shall identify the person, as that term is defined in §644.016(15) RSMo, that is the owner of, operator of, or area-wide management authority for a water contaminant source, point source, wastewater treatment facility, or sewer collection system. This person shall be designated as the continuing authority and shall sign the application. By doing so, the person designated as the continuing authority acknowledges responsibility for compliance with all permit conditions.

10 CSR 20-6.010(2) establishes preferential levels for continuing authorities: Levels 1 through 5 (with Level 1 as the highest level), and generally requires permits to be issued to a higher preference continuing authority if available. A Level 3, 4, or 5 applicant may constitute a continuing authority by showing that Level 1 and Level 2 authorities are not available; do not have jurisdiction; are forbidden by state statute or local ordinance from providing service to the person; or that the Level 3, 4, or 5 applicant has met one of the requirements listed in paragraphs (2)(C)1.–7. of 10 CSR 20-6.010(2). The seven options in paragraphs (2)(C)1.–7. for a lower-level authority to demonstrate that it is the valid continuing authority are:

1. A waiver from the existing higher authority declining the offer to accept management of the additional wastewater or stormwater;
2. A written statement or a demonstration of non-response from the higher authority;
3. A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;

4. A proposed connection or adoption charge by the higher authority that would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
5. A proposed service fee on the users of the system by the higher authority that is above what is affordable for existing homeowners in that area;
6. Terms for connection or adoption by the higher authority that would require more than two (2) years to achieve full sewer service; or
7. A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area.

Permit applicants that are Levels 3, 4, and 5 must, as part of their application, identify their method of compliance with this regulation. The following are the methods to comply.

- o No higher level authorities are available to the facility;

- o No higher level authorities have jurisdiction;

- o Higher level authorities are forbidden by state statute or local ordinance from providing service to the person;

- o The existing higher level authority is available to the facility, however the facility has proposed the use of a lower preference continuing authority and has submitted one of the following as part of their application provided it does not conflict with any area-wide management plan approved under Section 208 of the Clean Water Act or by the Missouri Clean Water Commission. (See Fact Sheet Appendix - Continuing Authority for more information on these options):
  - A waiver from the existing higher authority;
  - A written statement or a demonstration of non-response from the higher authority;
  - A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
  - Documentation that the proposed connection or adoption charge by the higher authority would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
  - Documentation that the proposed service fee on the users of the system by the higher authority is above what is affordable for existing homeowners in that area;
  - Documentation that the terms for connection or adoption by the higher authority would require more than two (2) years to achieve full sewer service;
  - A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area;

- ✓ The continuing authority listed on the application is a municipality, and therefore a Level 3 Authority. East-West Gateway has an approved Clean Water Act Section 208 plan in Jefferson County. The applicant has shown that:

  - o A higher level authority is not available to the facility.

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 optional and can be provided upon request to the department.

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: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. Each facility must make a request. If a single entity owns or operates more than one facility, 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.

FEES:

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

NUMERIC LAKE NUTRIENT CRITERIA:

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

OPERATOR CERTIFICATION REQUIREMENTS:
As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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 with population equivalents greater than 200 and are owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and state or federal agencies.

✓ This facility is required to have a certified operator as it has a population equivalent greater than 200 and is owned or operated by or for a municipality, public sewer district, county, public water supply district, private sewer company regulated by the PSC, state, or federal agency.

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

Operator's Name: Julie A. Axtetter
Certification Number: 9575
Certification Level: WW-A

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

OPERATIONAL CONTROL TESTING:
Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publicly 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 publicly owned treatment works and privately owned facilities regulated by the Public Service Commission has a calculated Population Equivalent greater than two hundred (200).

10 CSR 20-9.010(3) allows the department to modify the monitoring frequency required in the rule based upon the department's 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. These operational monitoring reports are to be submitted to the department along with the MSOP discharge monitoring reports.

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

Operational Monitoring Parameter	**Frequency**
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
Operational Monitoring Parameter (continued)	**Frequency**
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)
Temperature – Mixed Liquor (sample contact and reaeration basins for contact stabilization)	Daily (M-F)
Dissolved Oxygen – Aerobic Digester	Daily (M-F)

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 (RP):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] and State Regulation [10 CSR 20-7.015(9)(A)2] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

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

A reasonable potential analysis (RPA) is a numeric RP decision calculated using effluent data provided by the facility for parameters that have a numeric Water Quality Standard (WQS).

Reasonable potential determinations (RPD) are based on physical conditions of the site as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD using best professional judgement. An RPD consists of evaluating visual observations for compliance with narrative criteria, non-numeric information, or small amounts of numerical data (such as 3 data points supplied in the application). Narrative criteria with RP typically translate to a numeric WQS, so a parameter's establishment being based on narrative criteria does not necessarily make the decision an RPD vs RP—how the data is collected does, however. When insufficient data is received to make a determination on RP based on numeric effluent data, the RPD decisions are based on best professional judgment considering the sources of influent wastewater, type of treatment, and historical overall management of the site.

✓ An RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS.**

✓ A RPD was made for Chromium VI, that a potential to violate water quality standards does not exist.

✓ A RPD was made for the Acute WET test that a potential to violate water quality standards does not exist.

✓ A RPD was made for the Chronic WET test, that a potential to violate water quality standards does not exist.

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(12)] 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.

§644.026.1.(13) RSMo, 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 §644.006 to §644.141 RSMo. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. §644.026.1.(15) RSMo, 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 https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template. For additional information regarding the departments' CMOM Model, see the CMOM Plan Model Guidance document at https://dnr.mo.gov/print/document-search/pub2574. 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 §644.051.7 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 may include 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), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), 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 that may result in site-specific criteria or alternative effluent limits. 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 Total Recoverable Copper and Total Recoverable Selenium. The five-year schedule of compliance allowed for this facility should provide adequate time to evaluate operations and industrial contributions, and implement necessary changes

required to meet effluent limits. 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 https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater/construction-engineering.

✓ 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 June 2015], 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 (https://dnr.mo.gov/document-search/antidegradation-implementation-procedure).

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: https://dnr.mo.gov/forms-applications.

✓ 10 CSR 20-6.200 and 40 CFR 122.26(b)(14)(ix) includes treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that is located within the confines of the facility, with a design flow of 1.0 MGD or more, or are required to have an approved pretreatment program under 40 CFR part 403, as an industrial activity in which permit coverage is required. In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP).

A facility can apply for conditional exclusion for "no exposure" of industrial activities and materials to stormwater by submitting a permit modification via Form B2 (https://dnr.mo.gov/document-search/form-b2-application-operating-permit-facilities-receive-primarily-domestic-waste-have-design-flow-more-100000-gallons-day-mo-780-1805) appropriate application filing fees and a completed No Exposure Certification for Exclusion from NPDES Stormwater Permitting under Missouri Clean Water Law (https://dnr.mo.gov/document-search/no-exposure-certification-exclusion-npdes-stormwater-permitting-under-missouri-clean-water-law-mo-780-2828) to the department's Water Protection Program, operating permits section. Upon receipt of the No Exposure Certification, the permit will be modified and the Special Condition to develop and implement a SWPPP will be removed.

TOTAL PHOSPHORUS TARGET REDUCTION LEVELS:

Per 10 CSR 20-7.015(9)(B)2., total phosphorus target reduction levels apply to all domestic facilities with design flow greater than or equal to 1,000,000 gallons per day (1 MGD) and all industrial facilities categorized as major that typically discharge phosphorus in their industrial wastewater, except for facilities which already have more stringent phosphorus requirements as required by 10 CSR 20-7.015(3)(E), (3)(F), (9)(A)4., and (9)(A)5., for discharges to Lake Taneycomo, Table Rock Lake, a TMDL watershed with phosphorus allocations, or as addressed by antidegradation review, respectively.

10 CSR 20-7.015(9)(B)2.A. establishes four options for compliance with total phosphorus target reduction levels. These four options are:

1. 1.0 mg/L annual average.
2. Annual mass loading equal to 1.0 mg/L based on the design flow.
3. An overall reduction of total phosphorus from influent to effluent by 75%.
4. An overall reduction of annual load of total phosphorus discharged by 75%.

The implementation date for facilities with design flow greater than or equal to 1 MGD but less than 15 MGD is January 1, 2033, and for facilities with design flows greater than 15 MGD, the implementation date is January 1, 2029; unless an alternative implementation date is requested and approved per 10 CSR 20-7.015(9)(2)D.(IV).

Permittees shall submit the following on the next renewal application:

- Chosen compliance method.
  - If implementing compliance option 2, and the facility is a combined sewer system, permittees can request alternative considerations or calculations.
  - If implementing compliance option 3, at least two years of influent and effluent monitoring data is required.
  - If implementing compliance option 4, sufficient and representative data is required.
- Alternative implementation date, if applicable.
- Application for nutrient trading, if utilizing.

✓ Applicable; this facility is a domestic major with a design flow greater than or equal to 1 MGD but less than 15 MGD.

VARIANCE:

As per §644.061.4 RSMo, 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 RSMo, or any standard, rule or regulation promulgated pursuant to §644.006 to §644.141 RSMo.

✓ 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(86)], 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.

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

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A) and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(J)2.A & B are being met. Under [10 CSR 20-6.010(8)(B)], 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 applies: §644.051.7 RSMO, requires the department to set permit conditions that comply with the MCWL and CWA and specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and §644.051.8 RSMo, 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.

✓ At this time, the permittee is not required to conduct WET test for this facility. The previous permit included requirements to conduct Acute and Chronic WET tests. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. Also, the facility has passed the previous

Acute and Chronic WET tests. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for chronic toxicity at this time and the Chronic WET testing requirements have been removed from this permit.

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.

Part IV – Cost Analysis for Compliance

Pursuant to §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 publicly-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 §644.145.3 RSMo.

Summary Table. Cost Analysis for Compliance Summary for the City of Pevely

New Permit Requirements			
For Outfall #002, new monthly sampling frequency for Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Phosphorus, Arsenic, Cyanide, Thallium, Total Hardness, Copper, and Selenium. For Permitted Feature INF, new monthly sampling frequency for BOD_5, Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite			
Estimated Annual Cost	Annual Median Household Income (MHI)	Estimated Monthly User Rate	User Rate as a Percent of MHI
$4,768	$70,946	$36.08	0.6%

Part V – 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.

WATER QUALITY STANDARD REVISION:
In accordance with §644.058 RSMo, the department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

✓ This operating permit contains a permit requirement for Arsenic and Copper which water quality criteria has been modified by twenty-five percent or more since the issuance of the previous permit. The approval of these changes by the EPA is environmentally necessary to ensure the criteria are reflective of the most current science available while protecting the water quality standards of the receiving stream without placing needless and overly burdensome requirements on regulated entities. The

"Evaluation of Environmental and Economic Impacts of Revised Water Quality Standards and Criteria on a Subbasin Basis" report is available upon request to the department.

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 April 19, 2024 to May 20, 2024. No responses received.

DATE OF FACT SHEET: MAY 28, 2024

COMPLETED BY:

BRANT FARRIS, ENVIRONMENTAL PROGRAM SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

Item	Points Possible	Points Assigned
Maximum Population Equivalent (P.E.) served , peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	2
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	2
Effluent Discharge		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, lake or reservoir area supporting whole body contact recreation	3	
Direct reuse or recycle of effluent	6	
Land Application/Irrigation		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
Variation in Raw Wastes (highest level only)		
Variations do not exceed those normally or typically expected	0	
Reoccurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2	2
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	
Plant pumping of main flow	3	3
Flow equalization	5	
Primary Treatment		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	4	
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	
Activated sludge (including aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film	10	
Biological, physical, or chemical	12	
Carbon regeneration	4	
Total from page **ONE (1)**	----	27

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	5
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	6
Disinfection		
Chlorination or comparable	5	
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	
UV light	4	4
Required Laboratory Control Performed by Plant Personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page **TWO (2)**	----	28
Total from page **ONE (1)**	---	27
Grand Total	---	55

☐ - 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
Ammonia as N – Summer (mg/L)	12.1	10.93	1.5	10.93	30.00	3.3/0.022	1.22	3.31	YES
Ammonia as N – Winter (mg/L)	12.1	9.91	2.9	9.91	29.00	2.5/0.019	1.49	3.96	YES
Copper, Total Recoverable (µg/L)	38.22	44.24	23.21	44.24	20	30/2	0.62	1.47	Yes
Selenium, Total Recoverable (µg/L)	n/a	434.31	5.00	434.31	20	210/2.5	1.46	2.07	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 – Non-Detect Example Calculations:

Example: Permittee has four samples for Pollutant X which has a method minimum level of 5 mg/L and is to report a Daily Maximum and Monthly Average.

Week 1 = 11.4 mg/L
Week 2 = Non-Detect or <5.0 mg/L
Week 3 = 7.1 mg/L
Week 4 = Non-Detect or <5.0 mg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

11.4 + 0 + 7.1 + 0 = 18.5 ÷ 4 (number of samples) = 4.63 mg/L.

The Permittee reports a Monthly Average of 4.63 mg/L and a Daily maximum of 11.4 mg/L (Note the < symbol was dropped in the answers).

Example: Permittee has five samples for Pollutant Y that has a method minimum level of 9 µg/L and is to report a Daily Maximum and Monthly Average.

Day 1 = Non-Detect or <9.0 µg/L
Day 2 = Non-Detect or <9.0 µg/L
Day 3 = Non-Detect or <9.0 µg/L
Day 4 = Non-Detect or <9.0 µg/L
Day 5 = Non-Detect or <9.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(9 +9 +9 +9 +9) ÷ 5 (number of samples) = <9 µg/L.

The Permittee reports a Monthly Average of <9.0 µg/L (retain the 'less than' symbol) and a Daily Maximum of <9.0 µg/L.

Example: Permittee has four samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 µg/L and the remaining two tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(4 + 4 + 6 + 6) ÷ 4 (number of samples) = <5 µg/L. (Monthly)

The facility reports a Monthly Average of <5.0 µg/L and a Weekly Average of <6.0 µg/L.

APPENDIX – Non-Detect Example Calculations (Continued):

Example: Permittee has five samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 µg/L and the remaining three tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <6.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(4 + 4 + 6 + 6 + 6) ÷ 5 (number of samples) = <5.2 µg/L. (Monthly)
(4 + 6) ÷ 2 (number of samples) = <5 µg/L. (Week 2)

The facility reports a Monthly Average of <5.2 µg/L and a Weekly Average of <6.0 µg/L (report highest Weekly Average value)

Example: Permittee has four samples for Pollutant Z where the tests were conducted using a method with a method minimum level of 10 µg/L and is to report a Monthly Average and Daily Maximum. The permit lists that Pollutant Z has a department determined Minimum Quantification Level (ML) of 130 µg/L.

Week 1 = 12 µg/L
Week 2 = 52 µg/L
Week 3 = Non-Detect or <10 µg/L
Week 4 = 133 µg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

For this example, (12 + 52 + 0 + 133) ÷ 4 (number of samples) = 197 ÷ 4 = 49.3 µg/L.

The facility reports a Monthly Average of 49.3 µg/L and a Daily Maximum of 133 µg/L.

Example: Permittee has five samples for *E. coli* which has a method minimum level of 1 #/100mL and is to report a Weekly Average (seven (7) day geometric mean) and a Monthly Average (thirty (30) day geometric mean).

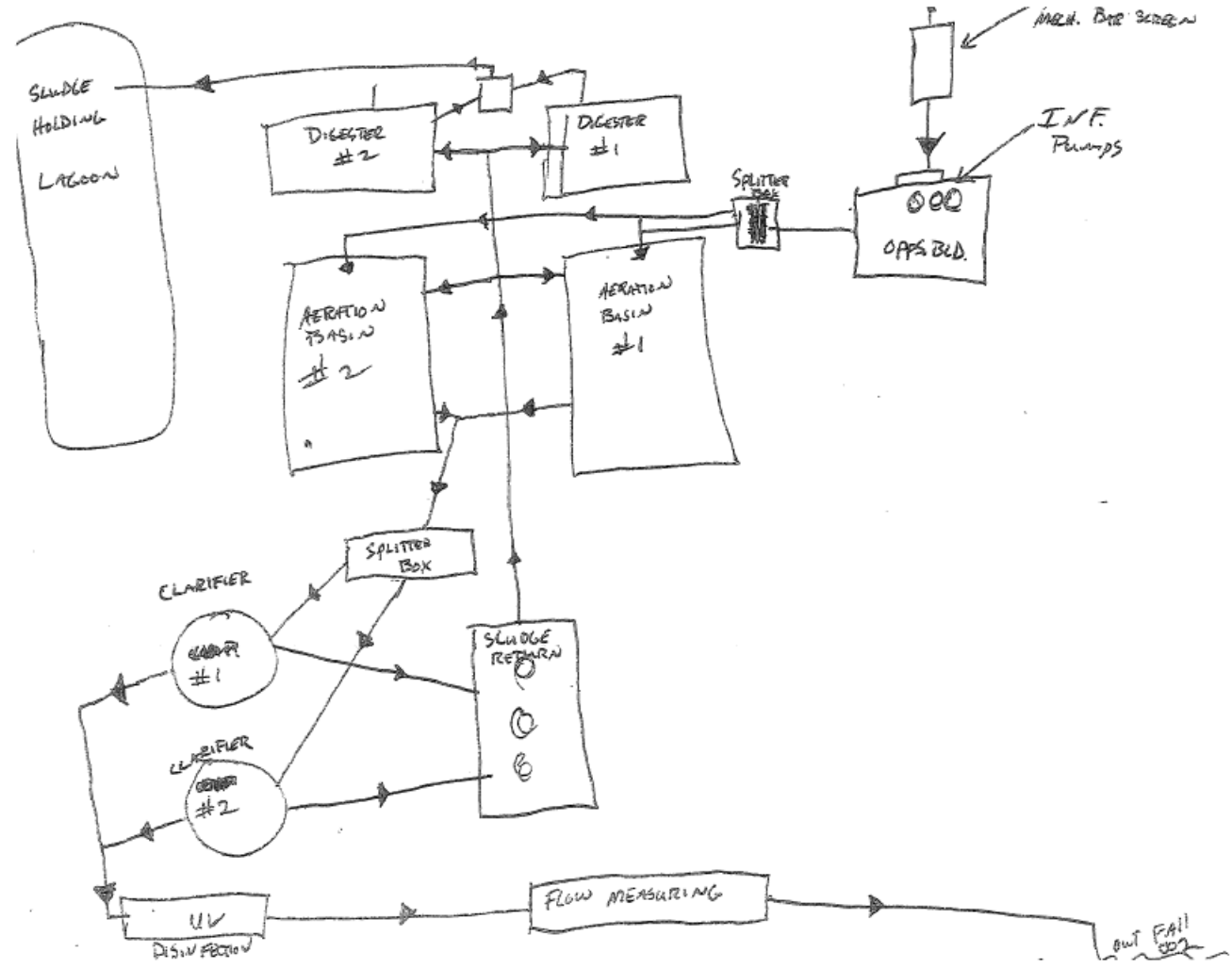
Week 1 = 102 #/100mL
Week 2 (Monday) = 400 #/100mL
Week 2 (Friday) = Non-Detect or <1 #/100mL
Week 3 = 15 #/100mL
Week 4 = Non-Detect or <1 #/100mL

For this example, use subpart (i) - When E. coli is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means. 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.

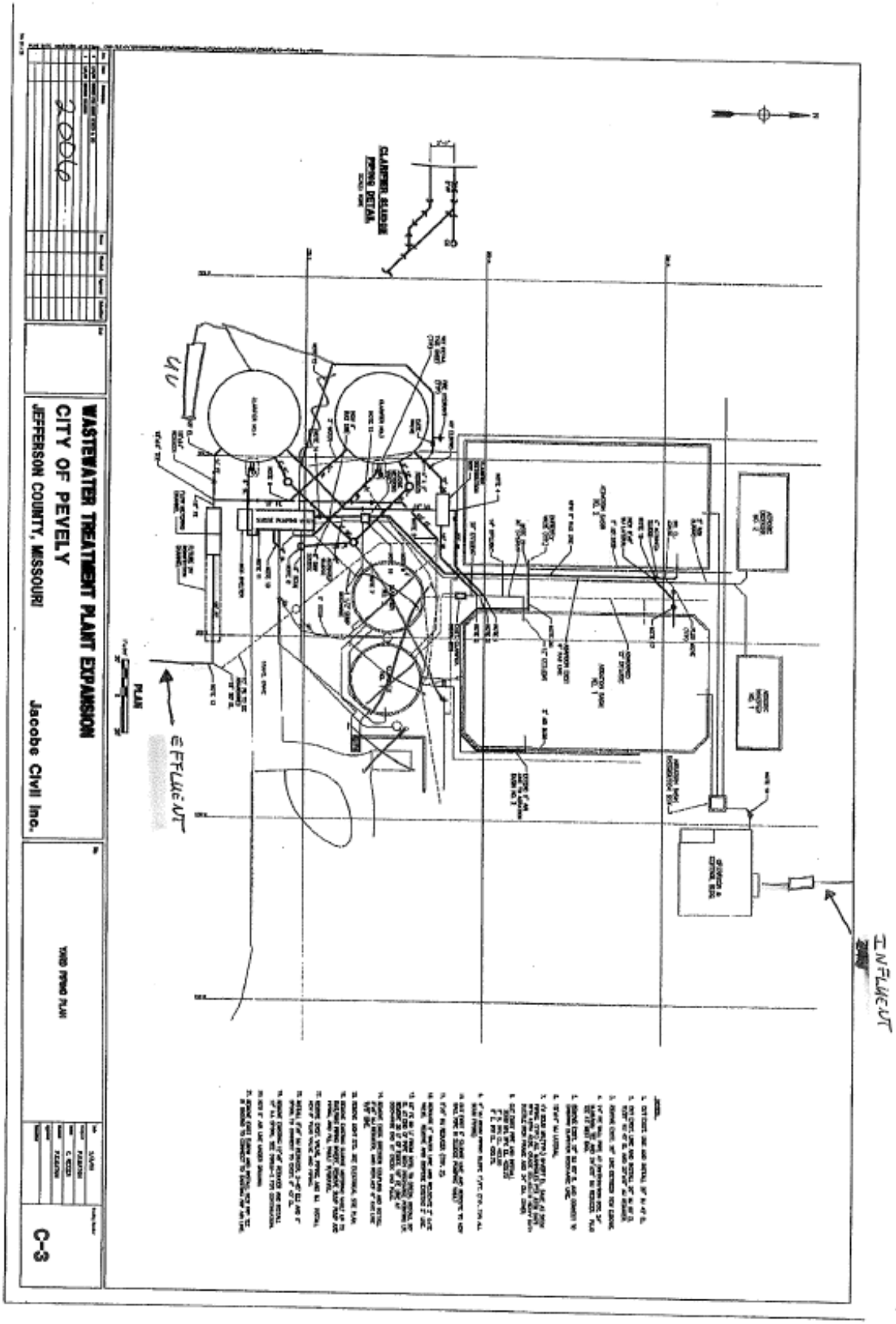
The Monthly Average (30 day Geometric Mean) = 5th root of (102)(400)(0.5)(15)(0.5) = 5th root of 153,000 = 10.9 #/100mL.
The 7 day Geometric Mean = 2nd root of (400)(0.5) = 2nd root of 200 = 14.1 #/100mL. (Week 2)

The Permittee reports a Monthly Average (30 day Geometric Mean) of 10.9 #/100mL and a Weekly Average (7 day geometric mean) of 102 #/100mL (report highest Weekly Average value)

APPENDIX – FLOW DIAGRAM:



APPENDIX – FACILITY LAYOUT:



APPENDIX – COST ANALYSIS FOR COMPLIANCE:

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

Pevely WWTP, Permit Renewal
City of Pevely
Missouri State Operating Permit #MO-0040142

Section 644.145 RSMo requires the Department of Natural Resources (department) 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 does not dictate how the permittee will comply with new permit requirements.

New Permit Requirements

The permit requires compliance with new monitoring requirements. For Outfall #002, new monthly sampling frequency for Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Phosphorus, Arsenic, Cyanide, Thallium, Total Hardness, Copper, and Selenium. For Permitted Feature INF, new monthly sampling frequency for BOD_5, Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite. The permit also requires the permittee to meet final effluent limits for Copper and Selenium. There is no new cost associated with meeting the limits, as these pollutants will be controlled by implementing more stringent requirements on the industrial connections.

Connections
The number of connections was reported by the permittee on the Financial Questionnaire.

Connection Type	Number
Residential	1,779
Commercial	90
Industrial	4
Total	**1,873**

Data Collection for this Analysis
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 department's website (https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511) is a required attachment to the permit renewal application. The City provided the Department with the Financial Questionnaire. The department has relied heavily on readily available data to complete this analysis. If certain data was not provided by the permittee to the department and the data is not obtainable through readily available sources, this analysis will state that the information is "unknown".

Eight Criteria of 644.145 RSMo
The department must consider the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with new permit requirements.

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

Criterion 1 Table. Current Financial Information for the City of Pevely	
Current Monthly User Rates per 5,000 gallons*	$35.87
Median Household Income (MHI)[1]	$70,946
Current Annual Operating Costs (excludes depreciation) Σ	$1,457,271

*User Rates were reported by the permittee on the Financial Questionnaire.
Σ – Expenditures were obtained from the 2022 Financial Statements (https://auditor.mo.gov/LocalGov/ViewReportFile/52239)

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

The following tables outline the estimated costs of the new permit requirements:

Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements			
New Requirement	Frequency	Estimated Cost	Estimated Annual Cost
BOD_5 - Influent	monthly	$44 x 12	$528
Total Phosphorus – Influent	monthly	$26 x 12	$312
Total Kjeldahl Nitrogen - Influent	monthly	$35 x 12	$420
Nitrate + Nitrite - Influent	monthly	$44 x 12	$528
Ammonia - Influent	monthly	$22 x 12	$264
Total Phosphorus - Effluent	monthly £	$26 x 8	$208
Total Kjeldahl Nitrogen - Effluent	monthly £	$35 x 8	$280
Nitrate + Nitrite - Effluent	monthly £	$44 x 8	$352
Total Recoverable Arsenic - Effluent	monthly	$22 x 12	$264
Total Recoverable Copper - Effluent	monthly £	$22 x 8	$176
Cyanide, ATC - Effluent	monthly	$43 x 12	$516
Total Recoverable Selenium - Effluent	monthly £	$22 x 8	$176
Total Recoverable Thallium - Effluent	monthly	$22 x 12	$264
Total Hardness - Effluent	monthly £	$47 x 8	$376
Total metal concentration analysis	monthly £	$13 x 8	$104
Total Estimated Annual Cost of New Permit Requirements			$4,768

£ - previous permit required quarterly frequency (TKN and N+N were previously sampled to determine TN)

Criterion 2B Table. Estimated Costs for New Permit Requirements		
(1)	Estimated Annual Cost	$4,768
(2)	Estimated Monthly User Cost for New Requirements [2]	$0.21
	Estimated Monthly User Cost for New Requirements as a Percent of MHI [3]	0.004%
(3)	Total Monthly User Cost*	$36.08
	Total Monthly User Cost as a Percent of MHI [4]	0.6%

* Current User Rate + Estimated Monthly Costs of New Sampling Requirements

Due to the minimal cost associated with new permit requirements, the department anticipates an extremely low to no rate increase will be necessary, which could impact individuals or households of this community.

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

This analysis is being conducted based on new requirements in the permit, which will not require the addition of new control technologies at the facility. However, the new sampling requirements are being established in order to provide data regarding the health of the receiving stream's aquatic life and to ensure that the existing permit limits are providing adequate protection of aquatic life. 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 fulfills the goal of restoring and maintaining the chemical, physical, and biological integrity of the receiving stream; and, where attainable, it achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water.

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 phosphorus 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.

Metals Monitoring
Metals dissolve in water and are easily absorbed by fish and other aquatic organisms. Small concentrations can be toxic because metals undergo bioconcentration, which means that their concentration in an organism is higher than in water. Metal toxicity produces adverse biological effects on an organism's survival, activity, growth, metabolism, or reproduction. Metals can be lethal or harm the organism without killing it directly. Adverse effects on an organism's activity, growth, metabolism, and reproduction are examples of sub-lethal effects.

In order for a metal to be toxic, it needs to enter the body of the exposed organism and interact with the surface or interior of cells. The pathways by which this happens includes diffusion into the bloodstream via the gills and skin, as fish become exposed by drinking water or eating sediments contaminated with the metal, or eating other animals or plants that became exposed to the metal. Humans become exposed to metals via analogous pathways: diffusion into the bloodstream via the lungs and skin, drinking contaminated water, and eating contaminated food.

The monitoring requirements for metals 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.

Metals Limits
Metals dissolve in water and are easily absorbed by fish and other aquatic organisms. Small concentrations can be toxic because metals undergo bioconcentration, which means that their concentration in an organism is higher than in water. Metal toxicity produces adverse biological effects on an organism's survival, activity, growth, metabolism, or reproduction. Metals can be lethal or harm the organism without killing it directly. Adverse effects on an organism's activity, growth, metabolism, and reproduction are examples of sub-lethal effects.

In order for a metal to be toxic, it needs to enter the body of the exposed organism and interact with the surface or interior of cells. The pathways by which this happens includes diffusion into the bloodstream via the gills and skin, as fish become exposed by drinking water or eating sediments contaminated with the metal, or eating other animals or plants that became exposed to the metal. Humans become exposed to metals via analogous pathways: diffusion into the bloodstream via the lungs and skin, drinking contaminated water, and eating contaminated food.

The effluent limits for metals have been added to the permit to protect 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.

(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 has reported that they have no outstanding debt for the current wastewater collection and treatment systems.

(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.

The following table characterizes the current overall socioeconomic condition of the community as compared to the overall socioeconomic condition of Missouri. The following information was compiled using the latest U.S. Census data.

Criterion 5 Table. Socioeconomic Data [1, 5-9] for the City of Pevely

No.	Administrative Unit	Pevely City	Missouri State
1	Population (2022)	6,012	6,154,422
2	Percent Change in Population (2000-2022)	59.6%	10.0%
3	2022 Median Household Income (in 2023 Dollars)	$70,946	$68,634
4	Percent Change in Median Household Income (2000-2022)	11.1%	-1.1%
5	Median Age (2022)	34.2	38.8
6	Change in Median Age in Years (2000-2022)	3.5	2.7
7	Unemployment Rate (2022)	4.7%	4.3%
8	Percent of Population Below Poverty Level (2022)	17.0%	12.8%
9	Percent of Household Received Food Stamps (2022)	27.5%	10.0%
10	(Primary) County Where the Community Is Located	Jefferson County	

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

The City reported that they are conducting cured-in-place lining of manholes and sewer mains, which cost approximately $75,000 per year.

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

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

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

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

The department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score. The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri.

Based on the assessment tool, the City of Pevely has been determined to be a category 5 community. This means that the City of Pevely is predicted to be stable over time.

Conclusion and Finding
As a result of new regulations, the department is proposing modifications to the current operating permit that may require the permittee to increase monitoring. The department has considered the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

This analysis examined whether the new sampling requirements affect the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. After reviewing the above criteria, the department finds that the new sampling requirements may result in a low burden with regard to the community's overall financial capability and a low financial impact for most individual customers/households; therefore, the new permit requirements are affordable.

References

1. (A) 2022 MHI in 2022 Dollar: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2022 Inflation-Adjusted Dollars). https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2022.B19013.
   (B) 2000 MHI in 1999 Dollar: (1)For United States, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-1 Part 1. United States Summary, Table 5. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
   (2) For Missouri State, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-27, Missouri, Table 10. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
   (C) 2023 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2023) Consumer Price Index - All Urban Consumers, U.S. City Average. All Items. 1982-84=100 (unadjusted) - CUUR0000SAO. https://data.bls.gov/cgi-bin/surveymost?bls.
   (D) 2022 MHI in 2023 Dollar = 2022 MHI in 2022 Dollar x 2023 CPI /2023 CPI; 2000 MHI in 2023 Dollar = 2000 MHI in 1999 Dollar x 2023 CPI /1999 CPI.
   (E) Percent Change in Median Household Income (2000-2022) = (2022 MHI in 2023 Dollar - 2000 MHI in 2023 Dollar) / (2000 MHI in 2023 Dollar).
2. ($4,768/1,873)/12 = $0.21 (Estimated Monthly User Cost for New Requirements)
3. ($0.21/($70,946/12))100% = 0.004% (New Sampling Only)
4. ($36.08/($70,946/12))100% = 0.6% (Total User Cost)
5. (A) Total Population in 2022: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2022.B01003.
   (B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
   (2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.
   (C) Percent Change in Population (2000-2022) = (Total Population in 2022 - Total Population in 2000) / (Total Population in 2000).
6. Median Age in 2022: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2022.B01002.
   (B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC., Page 2. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
   (2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC., Pages 64-92. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.
   (C) Change in Median Age in Years (2000-2022) = (Median Age in 2022 - Median Age in 2000).
7. United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, S2301: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. https://data.census.gov/cedsci/table?q=unemployment&tid=ACSST5Y2022.S2301.
8. United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2022.S1701.
9. United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table S2201: Food Stamps/Supplemental Nutrition Assistance Program (SNAP) - Universe: Households. https://data.census.gov/cedsci/table?q=S2201&tid=ACSST5Y2022.S2201.

APPENDIX: 2004 WATER QUALITY REVIEW SHEET – PEVELY EXPANSION:

Missouri Department of Natural Resource
Water Pollution Control Program
Planning Section

Water Quality Review Sheet

Determination of Effluent Limits

FACILITY INFORMATION

FACILITY NAME: Pevely WWTP NPDES #: MO0040142

FACILITY TYPE/DESCRIPTION: POTW, Major, 92-500/Extended aeration, aerated sludge holding tank, sludge holding lagoon, sludge is land applied

ECOREGION: Ozark Highlands (Central Irregular Plains; Mississippi Alluvial Plains; Osage Plains; Ozark Highlands) 8- DIGIT HUC: 07140101 COUNTY: Jefferson

Outfall 002
LEGAL DESCRIPTION: SW ¼, SE ¼, Sec. 13, T41N, R5E LATITUDE/LONGITUDE (DMS): +38 16 45.8/-090 24 42.0

WATER QUALITY HISTORY: According to WQIS-screen 9, a stream surveys were conducted by JF on 08/22/2001 & 09/15/1992. Data shows that the stream was being adversely affected.
According to WQIS-screen 10, no outstanding enforcement action.
According to WQIS-screen 11, the latest inspection occurred on 11/04/1999 and showed noncompliance for sludge or solids observed in creek or around outfall and operation & maintenance problems.
According to WQIS-screen 14, pH violations occurred on 01/01 and 02/01 in Outfall 002. Outfall 003 was eliminated on the last permit issued (03/13/1998). [Outfall 001 had not existed since the mid-1980's.]

OUTFALL CHARACTERISTICS

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	OTHER
002	2.79	Extended aeration	Trib to Sandy Creek	Plant to be upgraded

RECEIVING WATERBODY INFORMATION

WATERBODY	CLASS	7Q10(CFS)	*DESIGNATED USES	OTHER CHARACTERISTICS
Trib. to Sandy Creek	U	0.0	None	0.85 mi to Sandy Creek
Sandy Creek	C	0.0	LWW & AQL	Drainage area = 32.5 mi^2

*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: The 7Q10 for Sandy Creek was determined from the USGS stream flow station #07019690 (Sandy Creek near Pevely, 1966-72 from *Stream and Springflow Characteristics*).
This facility became a major on 09/01/1994.
WQIS stated that a waste load allocation (WLA) study was conducted in August 2001. A low flow stream study was conducted in 2000.
Three industries discharge to the facility: (1) discharge = 0.1 MGD, SIC code = 3221-glass containers, Ball Foster, L.L.C.; (2) discharge = 0.026 MGD, SIC code = 3325-steel foundries, Carondelet Corp. (MO-R203247); (3) discharge = 0.028 MGD, SIC codes 3086-plastics foam products and 2821-plastics materials & resins, Dow U.S.A. (MO-0117293).
A review of the file found that the facility was given metal requirements in the permit issued on 11/12/1992 for the period of one year due to the industries that discharge to it. The results in WQIS showed a slight presence of zinc, copper, and manganese but nothing to be concerned with. In addition, two of the industries are presently treating the industrial wastewater at their own facilities.

MIXING CONSIDERATIONS

Mixing Zone.

Not allowed due to discharge into an unclassified stream.

Zone of Initial Dilution (Z.I.D.).

Not allowed due to discharge into an unclassified stream.

PERMIT LIMITS AND INFORMATION

TMDL WATERSHED: (Y OR N) [N] W.L.A. STUDY CONDUCTED: (Y OR N) [*] DISINFECTION REQUIRED: (Y OR N) [N] DISINFECTION WAIVER: (Y, N, NA) [NA]

*-NOT COMPLETED

OUTFALL#002

WET TEST (Y OR N): [Y] FREQUENCY: ONCE/YEAR A.E.C. 100% LIMIT: 10 CSR 20-7.031(3)(I)

PARAMETER	MAXIMUM DAILY LIMIT	AVERAGE WEEKLY LIMIT	AVERAGE MONTHLY LIMIT	MONITORING FREQUENCY	SAMPLE TYPE
FLOW	* MGD		* MGD	DAILY	24 HR. EST.
BIOCHEMICAL OXYGEN DEMAND		30 MG/L	20 MG/L	ONCE/MONTH	24 HR. COMP.
TOTAL SUSPENDED SOLIDS		30 MG/L	20 MG/L	ONCE/MONTH	24 HR. COMP.
PH	**		**	ONCE/MONTH	GRAB
OIL & GREASE	15 MG/L		10 MG/L	ONCE/MONTH	GRAB
AMMONIA AS N (SUMMER)	1.7 MG/L		0.9 MG/L	ONCE/MONTH	GRAB
AMMONIA AS N (WINTER)	2.9 MG/L		1.5 MG/L	ONCE/MONTH	GRAB
$NO_2 + NO_3$ AS N	* MG/L		* MG/L	ONCE/MONTH	GRAB
TEMPERATURE (NOTE 1)	* °C		* °C	ONCE/MONTH	GRAB
TOTAL PHOSPHOROUS	* MG/L		* MG/L	ONCE/MONTH	GRAB

*MONITORING REQUIREMENT ONLY

**PH SHALL BE MAINTAINED IN THE RANGE FROM SIX TO NINE (6-9) STANDARD UNITS AND IS NOT TO BE AVERAGED.

Please report the date, time, and location for each parameter sampled along with the average daily flow (actual flow measured or estimated, not design flow). All the parameters should be sampled on the same day and within no more than a 2-hour period. If dissolved oxygen (DO) is to be sampled, sampling should take place at dawn. If discharge is contingent to storm events, rainfall should be measured every time there is a discharge

RECEIVING WATER MONITORING REQUIREMENTS

Site US1. Upstream of Outfall 002

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
FLOW BIOCHEMICAL OXYGEN DEMAND TOTAL SUSPENDED SOLIDS PH AMMONIA AS N $NO_2 + NO_3$ AS N TEMPERATURE DISSOLVED OXYGEN TOTAL PHOSPHOROUS	Twice/Year	Grab	~300' Upstream of Outfall 002* LatDMS = +38 16 47.0 LongDMS = -090 24 32.7

*See map at end of WQRS.

Site DS1. Downstream of Outfall 002

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
FLOW BIOCHEMICAL OXYGEN DEMAND			

TOTAL SUSPENDED SOLIDS	Twice/Year	Grab	~300' Downstream of Outfall 002*
pH			LatDMS = +38 16 43.3
AMMONIA AS N			
$NO_2 + NO_3$ AS N			LongDMS = -090 24 38.7
TEMPERATURE			
DISSOLVED OXYGEN			
TOTAL PHOSPHOROUS			

*See map at end of WQRS.

DERIVATION AND DISCUSSION OF LIMITS

Outfall 002:

- ✓ **Biochemical Oxygen Demand (BODs).** Criterion: equal to or less than 20 mg/L monthly average, 30 mg/L weekly average which retains current mass loading as a wasteload allocation study has not been completed.

- ✓ **Total Suspended Solids.** Criterion: equal to or less than 20mg/L monthly average, 30mg/L weekly average to reflect current mass loading.

- ✓ **pH.** Criterion: between 6 – 9 standard units per 10 CSR 20-7.015(8)(B)2 and as stated in the existing permit.

- ✓ **Oil & Grease.** Criterion: 10 mg/L monthly average per 10 CSR 20-7.031, Table A (for protection of aquatic life). Maximum daily value is 1.5 times average monthly value.

- ✓ **Ammonia Nitrogen.** Criterion: per 10 CSR 20-7 Table B, Chonic criteria for Total Ammonia: General Warm-water Fishery with winter measurements at 26°C, pH 7.8 and summer measurements at 6°C, pH 7.8 (total ammonia/1.2 = ammonia nitrogen). Maximum Daily Limit (MDL) and Average Monthly Limit (AML) were calculated in accordance with methods outlined in *Technical Support Document for Water Quality-based Toxics Control* (EPA document #505/2-90-001, March 1991).

$$WLA = \frac{\text{Water Quality Criteria (Effluent flow + Mixing Zone flow) – (Mixing Zone flow * Concentration in stream)}}{\text{Effluent flow}}$$

Parameter (mg/L)	W.L.A.	L.T.A.	M.D.L.	A.M.L.
Ammonia Nitrogen, Summer (April 1 – Oct. 31)	1.06	0.558	1.74	0.87
Ammonia Nitrogen, Winter (Nov. 1 – March 31)	1.78	0.936	2.91	1.45

C.V. = 0.6, n = 4

- ✓ **A.E.C.** The A.E.C. is expressed as the percent effluent in the Z.I.D.
  = [(Design Flow) / (Design Flow + Z.I.D. Flow)]*100
  = [(1.86)/(1.86 + 0.0)]*100
  = 100%

Note 1. Temperature per 10 CSR 20-7.031(4)(D)1.
Beyond the mixing zone, water contaminant sources and physical alteration of the water shall not raise or lower the temperature of a stream more than five degrees Fahrenheit (5°F). Water contaminant sources shall not cause or contribute to stream temperature in excess of ninety degrees Fahrenheit (90°F).

Reviewer: RJL
Date: 01/12/2004
Unit Chief: RJL

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

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
Revised
October 1, 1980

PART II - SPECIAL CONDITIONS - PUBLICLY OWNED TREATMENT WORKS
SECTION A - MAJOR CONTRIBUTING INDUSTRY

1. **Definitions**
   Definitions as set forth in the Missouri Clean Water Laws and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein, in addition to the following:
   a. A "major contributing industry" to a publicly owned treatment facility is a wastewater source that meets any one of the following criteria:
      (1) has a flow of 50,000 gallons or more per average workday;
      (2) has an average daily flow greater than five percent (5%) of the flow carried by the system receiving the waste;
      (3) has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Federal Water Pollution Control Act (hereinafter the Act), or
      (4) has significant impact, either singly or in combination with other contributing industries, on the treatment works or in the quality of its effluent.
   b. "Compatible pollutants" are biochemical oxygen demand, suspended solids, pH, and fecal coliform bacteria, plus additional pollutants, e.g., nitrogen or phosphorus, identified in the NPDES permit, if the publicly owned treatment facility was designed to treat such pollutants, approved by the Department and in fact does remove such pollutants to design specifications.
   c. An "incompatible pollutant" is any pollutant which is not a compatible pollutant as defined above.

2. **Industrial Effluent Monitoring**
   The permittee shall establish and implement a procedure to periodically or regularly obtain monitoring data on the quality and quantity of all effluents introduced by each major contributing industry. Frequency of monitoring shall be subject to approval by the Department.

3. **Industrial Users Report**
   Each permittee which has a major contributing industry shall also submit to the permit-issuing authority semi-annual reports summarizing all major contributing industries subject to the pretreatment requirements of the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), or Section 307 of the Act. These reports must be filed with the Department of Natural Resources, PO Box 176, 205 Jefferson Street, Jefferson City, Missouri 65102 by January 1 and July 1 of each year. Such a report shall include at least the following information:
   a. name and number of major contributing industries using the treatment works and the waste type, raw materials usage (lbs/day or kg/day), and average daily flow for each industry;
   b. summary of monitoring data obtained in accordance with Standard Conditions Part II, Section A.2 above, detailing the quality and quantity of all effluents introduced by each major contributing industry, and the frequency of monitoring performed;
   c. number of major contributing industries in full compliance with the requirements of the Law and Regulations and Section 307 of the Act or not subject to these requirements (e.g., discharge only compatible pollutants), and
   d. a list identifying by name those major contributing industries presently in violation of the requirements of the Law and Regulations and Section 307 of the Act (e.g., discharges pollutant which interferes with, passes through or is incompatible with the municipal treatment works).

4. **Report on Pollutant Introduction**
   The permittee shall give notice to the department of any new introduction of pollutants or any substantial change in the character or volume of pollutants already being introduced. Such notice shall include:
   a. the origin, quality, and quantity of pollutants to be introduced into the publicly owned treatment works; and
   b. any anticipated impact on the quality and quantity of the effluent to be discharged by such treatment works:
   c. any anticipated impact on the quality of sludge produced by such treatment works causing the sludge to be hazardous under Federal and State Law.

5. **Industrial Users Compliance Schedules**
   The permittee shall identify any introduction of pollutants into the facility subject to pretreatment standards under Section 307(b) of the Federal Clean Water Act. In addition, the permittee shall require any industrial user of such treatment works to comply with the requirements of Section 204(b), 307, and 308 of the Federal Clean Water Act. As a means of compliance from each industrial user, subject to the requirements of Section 307 of the Federal Clean Water Act and shall forward to the Department a copy of periodic notice, over intervals not to exceed nine (9) months, of progress towards full compliance with Section 307 requirements.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
August 1, 2019

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

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

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes "Class A" or "Class B" biosolids derived from domestic wastewater to be land applied onto grass land, crop land, timber, or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
    a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
    b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
    c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
    d. Animal grazing shall not be allowed for 30 days after application of biosolids.
    e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
    f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
    g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
    h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.

5. Pollutant limits
    a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
    b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to achieve pollutant concentration below those identified in Table 1, below.
    c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

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

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

TABLE 2

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

e. Annual pollutant loading rate.

Table 3

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

f. Cumulative pollutant loading rates.

Table 4

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

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

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

i. PAN can be determined as follows:

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

[1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis.

ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.

iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.

d. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, water supply reservoir or water supply intake in a stream;

ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstandingstate resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;

iii. 150 feet of dwellings or public use areas;

iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);

v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.

vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.

e. Slope limitation for application sites are as follows:

i. For slopes less than or equal to 6 percent, no rate limitation;

ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;

iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.

f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.

g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:

i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of mthods or technology refletive of combination surface/shallow soil incorporation;

ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not included the use of methods or technology refletive of combination surface/shallow soil incorporation;

iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

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

SECTION I– CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all sludges and/or biosolids. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Biosolids or sludge that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre. Alternative, site-specific application rates may be included in the closure plan for department consideration.
        i. PAN can be determined as follows:
        (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. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are "similar treatment works" under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required.
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200.
7. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

surface water drainage without creating erosion.

b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.

c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill, reclamation, or other beneficial use. Other solid wastes must be removed.

8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

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

TABLE 5

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

[1] 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.

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

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

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

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

5. Annual report contents. The annual report shall include the following:
    a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
    b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
        ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
        iii. Report the method used for compliance with pathogen and vector attraction requirements.
        iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.

RECEIVED
MAY 06 2021
Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

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

FACILITY NAME
PEVELY WASTEWATER TREATMENT PLANT

PERMIT NO.
MO - 0040142

COUNTY
JEFFERSON

APPLICATION OVERVIEW

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

BASIC APPLICATION INFORMATION

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

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

C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

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

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

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

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

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

SIUs are defined as:

1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
2. Any other industrial user that meets one or more of the following:
   i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
   ii. Contributes a process waste stream that makes up 5%or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   iii. Is designated as an SIU by the control authority.
   iv. Is otherwise required by the permitting authority to provide the information.

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

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

RECEIVED
MAY 06 2021
Water Protection Program

AP 36842

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED: 5-6-21	FEE SUBMITTED: CK B
JET PAY CONFIRMATION NUMBER	

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-0046142 Expiration Date 12/31/2021
- ☐ 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
PEVELY WASTEWATER TREATMENT PLANT		636-475-7769
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
9088 PLANT ROAD	PEVELY	MO 63070

2.1 LEGAL DESCRIPTION (Facility Site): Sec. 13, T41N, R5E — COUNTY: JEFFERSON

2.2 UTM Coordinates Easting (X): 726617 Northing (Y): 4240061
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: TRIBUTARY TO SANDY CREEK

2.4 Number of Outfalls: 1 wastewater outfalls: 1 stormwater outfalls: 2 instream monitoring sites: 0

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
CITY OF PEVELY		636-475-4452
ADDRESS	CITY	STATE / ZIP CODE
401 MAIN STREET	PEVELY	MO 63070

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

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

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

4. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
CITY OF PEVELY		636-475-4452
ADDRESS	CITY	STATE / ZIP CODE
401 MAIN STREET	PEVELY	MO 63070

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)
WADE AMSDEN	CHIEF OPERATOR	3065
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
wadea@cityofpevely.org	636-475-7769	

6. FACILITY CONTACT

NAME	TITLE
Wade AMSDEN	CHIEF OPERATOR
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
wadea@cityofpevely.org	636-475-7769
ADDRESS	CITY / STATE / ZIP CODE
9088 PLANT ROAD	PEVELY MO 63070

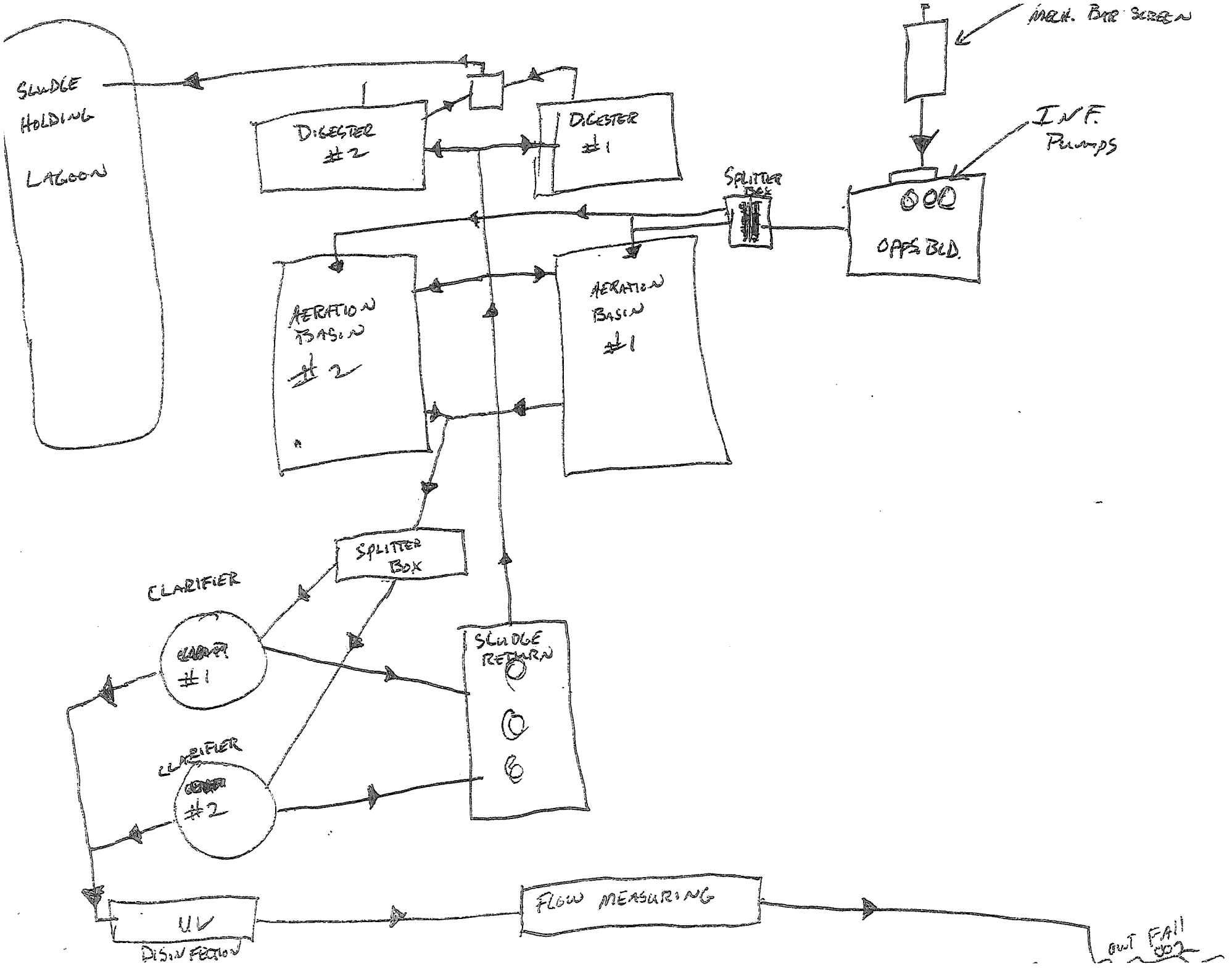
FACILITY NAME	PERMIT NO.	OUTFALL NO.
PEVELY WASTEWATER TREATMENT PLANT	MO- 0040142	002

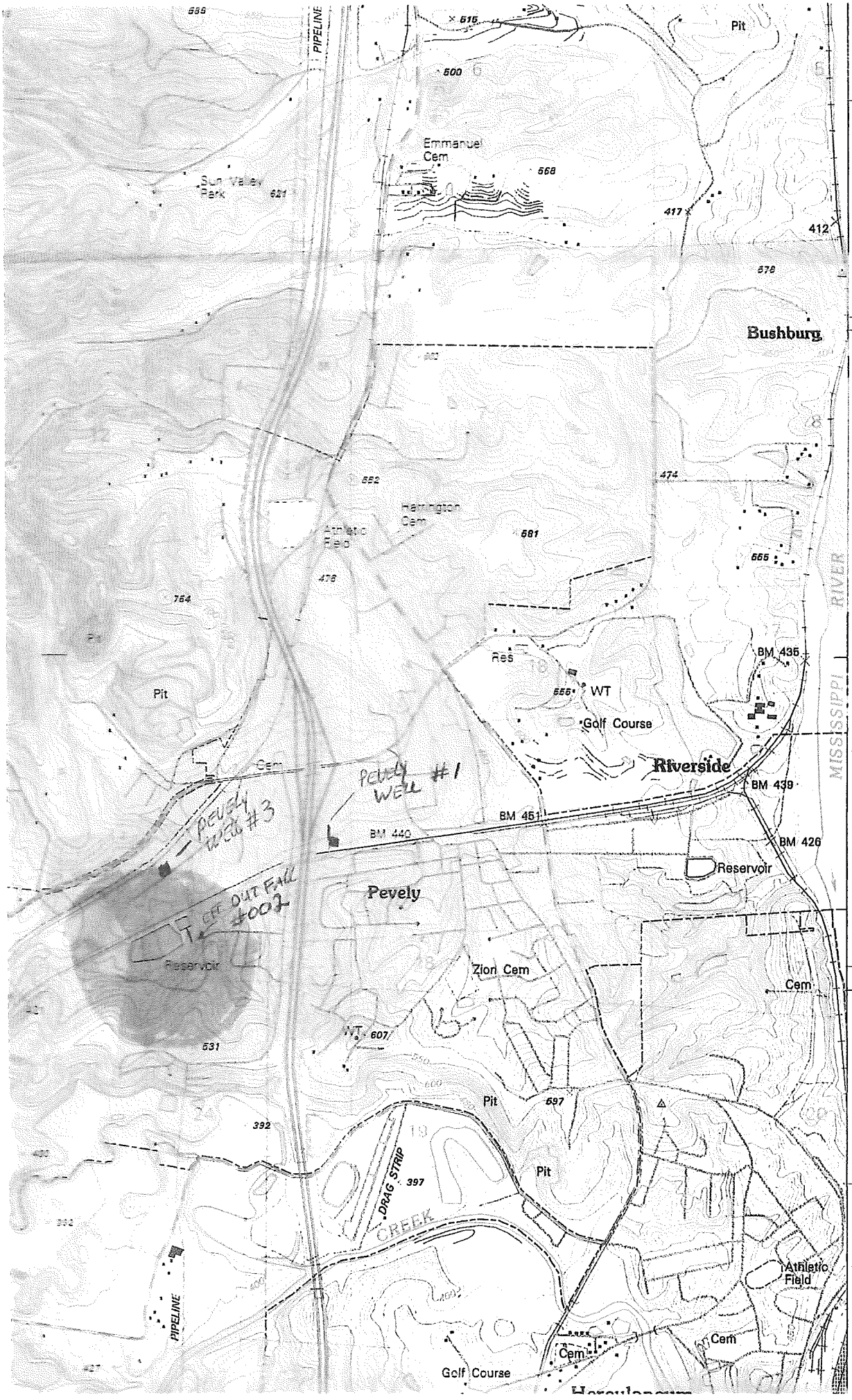
PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

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

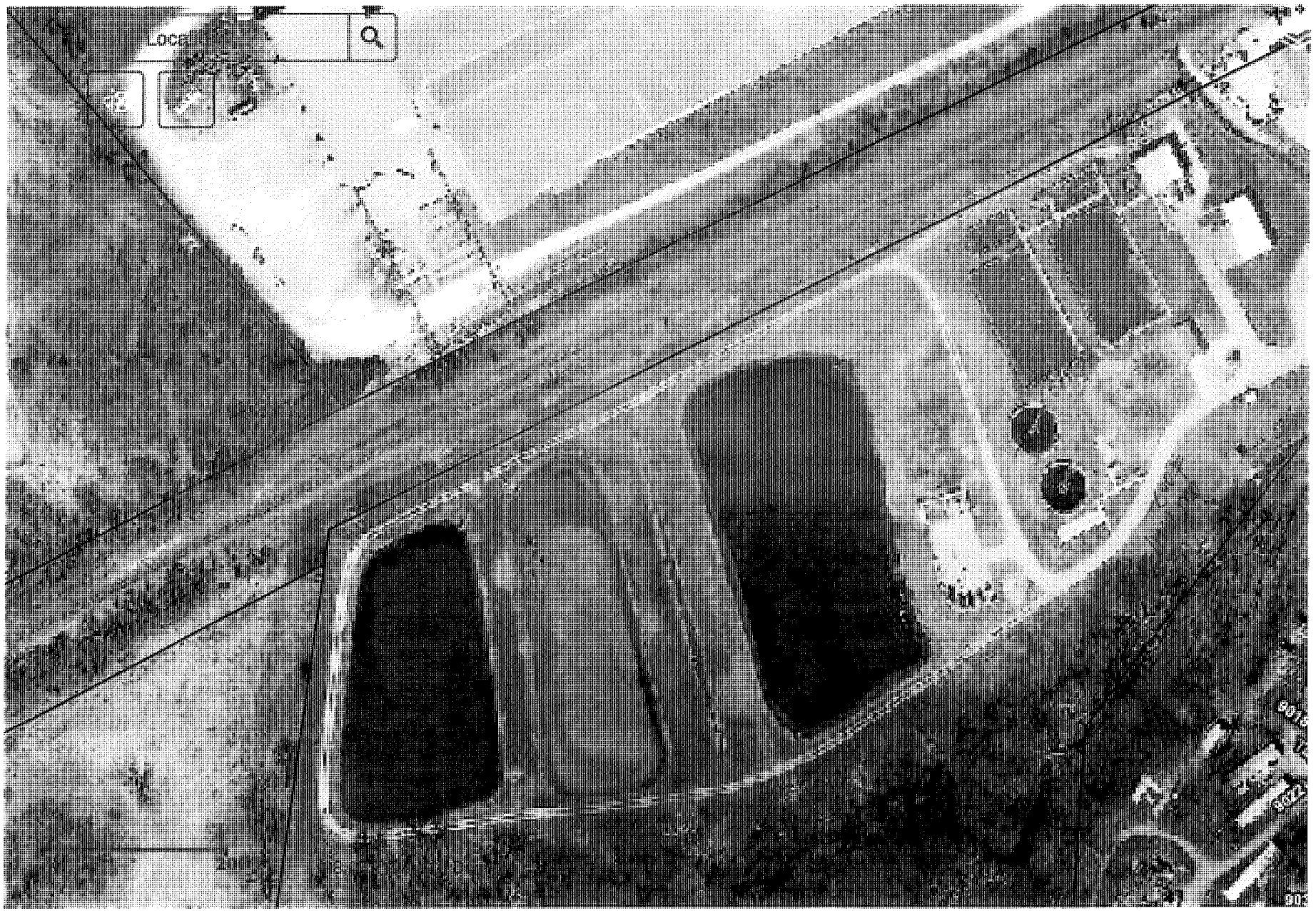
SEE ATTACHMENTS

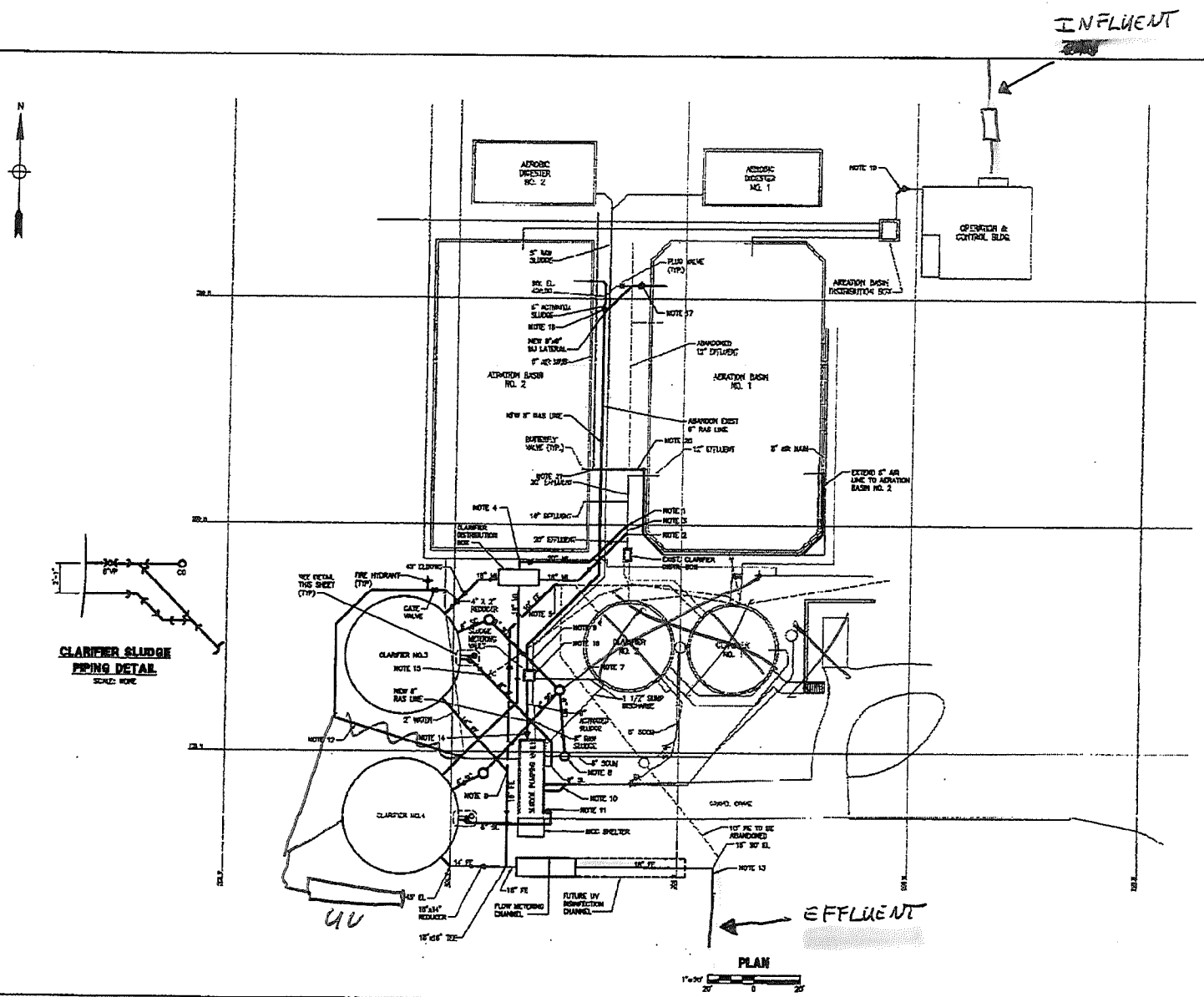

MECH. BAR SCREEN
INF. PUMPS
SLUDGE HOLDING LAGOON
DIGESTER #2
DIGESTER #1
SPLITTER BOX
OPS. BLD.
AERATION BASIN #2
AERATION BASIN #1
SPLITTER BOX
CLARIFIER #1
CLARIFIER #2
SLUDGE RETURN
UV DISINFECTION
FLOW MEASURING
OUT FALL 002


PIPELINE
Pit
Emmanuel Cem
Sun Valley Park
Bushburg
Athletic Field
Cem
Pit
Res
WT
Golf Course
Riverside
MISSISSIPPI RIVER
BM 436
BM 439
BM 451
BM 440
BM 426
Reservoir
Pevely
Pevely Well #1
Pevely Well #3
Off Out Fall #002
Zion Cem
Cem
WT
Pit
DRAG STRIP
CREEK
Athletic Field
Cem
Cem
Golf Course
4244
4243
4242
4241
4240
4239
17' 30"
N

Jefferson County MO Property Viewer

Department of the County Assessor





CLARIFIER SLUDGE PIPING DETAIL
SCALE: NONE

NOTES:

1. CUT EXIST. LINE AND INSTALL 20" MJ 45° EL.
2. CUT EXIST. LINE AND INSTALL 20" MJ 90° EL W/20" MJ 45° EL. AND 20"x16" MJ REDUCER.
3. REMOVE EXIST. 20" LINE BETWEEN NEW ELBOWS.
4. 24" PE WALL PIPE AT DISTRIBUTION BOX, 24" MJ/MJ/MJ TEE AND 24"x20" MJ REDUCER. PLUG TEE AT WEST END.
5. REMOVE EXIST. 10" MJ 90° EL AND CONNECT TO EXISTING CLARIFIER DISCHARGE LINE.
6. 10"x14" MJ LATERAL.
7. 6'ø SCUM MH(TYP.) INVERT EL. SAME AS SCUM PIPING. (TYP.) ALL MANHOLES PER ASTM C478 WITH ASTM A536, GRADE 80-40-18 HEAVY DUTY DUCTILE IRON FRAME AND 24" DIA. COVER.
8. CUT EXIST PIPE AND INSTALL
   SCUM MH, INV. EL. 420.75
   6" N. INV. EL. 420.80
   6" E. INV EL. 420.75
9. 6" MJ SCUM PIPING SLOPE 1"/FT. (TYP. FOR ALL SCUM PIPING)
10. CUT EXIST 6" SLUDGE LINE AND REROUTE TO NEW WALL PIPE IN SLUDGE PUMPING VAULT
11. 6"x6" MJ REDUCER (TYP. 2).
12. REROUTE 2" WATER LINE AND RELOCATE 2" GATE VALVE. REMOVE AND DISPOSE EXISTING 2" LINE.
13. 12" PE SID LF FROM DOTD, TO CREEK. INSTALL 90° EL AT END OF PIPE WITH DISCHARGE POINTING UP. REMOVE 20 LF OF EXIST. 10" PE LINE AT DISCHARGE END AT CREEK AND PLUG.
14. REMOVE EXIST. DRESSER COUPLING AND INSTALL 8"x6" MJ REDUCER, AND REPLACE 6" RAS LINE W/8" LINE.
15. REMOVE LIGHT STD. SEE ELECTRICAL SITE PLAN.
16. REMOVE EXISTING SLUDGE METERING VAULT UP TO RAS/WAS PIPING INVERT, REMOVE SUMP PUMP AND PIPING, AND FILL VAULT W/GRAVEL.
17. REMOVE EXIST. VALVE, PIPING, AND MJ. INSTALL NEW 8" PLUG VALVE AND PIPING.
18. INSTALL 8"x6" MJ REDUCER, 2-45° ELS AND 6" SPOOL TO CONNECT TO EXIST. 6" 45° EL.
19. REMOVE EXISTING 12"x8" REDUCER AND INSTALL 12" DIA. SPOOL. SEE DWG#-2 FOR CONTINUATION.
20. NEW 8" AIR LINE UNDER GROUND.
21. REMOVE EXIST ELBOW AND INSTALL NEW FRP TEE IN GROUND TO CONNECT TO EXISTING FRP AIR LINE.

No.	Date	Description	Drawn	Checked	Approved	Submitted
0	2/2/03	ISSUED FOR BIDS REVIEW & BID				
1	5/5/03	BIDDING SUBMITTAL				
		2006				

Seal

WASTEWATER TREATMENT PLANT EXPANSION
CITY OF PEVELY
JEFFERSON COUNTY, MISSOURI

Jacobs Civil Inc.

Title: YARD PIPING PLAN

Date	2/3/03
Designed	P.K.MATHAI
Drawn	C. REITER
Checked	P.K.MATHAI
Approved	
Submitted	

Drawing Number: C-3

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Pevely WWTP	MO- 0040142	002

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

7.2 **Map.** Attach to this application an aerial or topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. A map can be obtained by visiting the following website: https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce

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

7.3 Number of people presently connected or population equivalent (P.E.): 10,505 Design P.E. 18,000

7.4 Connections to the facility:

Number of units presently connected:

Residential: 1779 Commericial: 90 Industrial 5

7.5	Design Flow 1.8 MGD	Actual Flow 1.032 MGD	
7.6	Will discharge be continuous through the year?	Yes ☒	No ☐
	Discharge will occur during the following months:	JAN, → DEC,	
	How many days of the week will discharge occur?	7	
7.7	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.

7.8	Does the facility accept or process leachate from landfills?	Yes ☐	No ☒
7.9	Is wastewater land applied? **If yes**, please attach Form I See: https://dnr.mo.gov/forms/780-1686-f.pdf	Yes ☐	No ☒
7.10	Does the facility discharge to a losing stream or sinkhole?	Yes ☐	No ☒
7.11	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 ☑ BOTH	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 ☒ OUTSIDE LAB

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Pevely WWTP	MO- 0040142	002

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 226.4 Actual Dry Tons/Year 84.4

9.3 Sludge storage provided: 135 K Cubic feet; 730 Days of storage; 4.7 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
OROS & Busch Application Technologies, INC.	

ADDRESS	CITY	STATE	ZIP CODE
14933 Moore Cemetery Rd.	Carlinville	IL	62626

CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.
Jake OROS	217-854-7868	MO-

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

NAME	EMAIL ADDRESS
Wayne Bonaker Farm	

ADDRESS	CITY	STATE	ZIP CODE
4211 Hwy. W	House Springs	MO	63051

CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.
Wayne Bonaker	314-560-6279	MO-

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

END OF PART A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Revely WWTP	MO- 0040142	002

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Are there any municipal satellite collection systems connected to this facility? ____ Yes __X__ No

If yes, please list all connected to this facility, contact phone number and length of each collection system

FACILITY	CONTACT PHONE NUMBER	LENGTH OF SYSTEM (FEET OR MILES)

10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) 35 miles

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

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.

HAVE CURED IN PLACE LINING PROGRAM IN PLACE, LINE 8 TO 10 MANHOLES & 100 TO 400 OF SEWER MAINS EACH YEAR.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Revely WWTP	MO- 0040142	002

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data **for each outfall through which effluent is discharged.** Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcdf91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	7.20	S.U.	7.20	S.U.	3
pH (Maximum)	7.45	S.U.	7.45	S.U.	3
Flow Rate	5.296	MGD	1.032	MGD	

*For pH report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL RL
		Conc.	Units	Conc.	Units	Number of Samples		
Conventional and Nonconventional Compounds								
BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD_5	< 10	mg/L	< 10	mg/L	3	5210 B	10
	$CBOD_5$		mg/L		mg/L			
E. COLI		3940	#/100 mL	2312	#/100 mL	3	9222 D	100
TOTAL SUSPENDED SOLIDS (TSS)		9	mg/L	7	mg/L	3	2540 D	5
TOTAL PHOSPHORUS		2.5	mg/L	1.89	mg/L	3	200.7	0.20
TOTAL KJELDAHL NITROGEN		2.5	mg/L	1.93	mg/L	3	4500-Norg B	0.2
NITRITES + NITRATES		14.4	mg/L	13.5	mg/L	3	300.0	0.1
AMMONIA AS N		2.2	mg/L	0.9	mg/L	3	4500-Norg B	0.2
CHLORINE* (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN		9.4	mg/L	8.5	mg/L	3	DO PROBE	—
OIL and GREASE		< 5	mg/L	< 5	mg/L	3	1664	5
OTHER: _____			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Revely WWTP	MO- 0040142	002

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 a timely, complete, accurate, and nationally-consistent set of data. One of the following options must be checked in order for this application to be considered complete. Visit https://dnr.mo.gov/env/wpp/edmr.htm to for information on the department's eDMR system and how to register.

☐ I will register an account online to participate in the department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before any reporting is due, in compliance with the Electronic Reporting Rule.

☒ I have already registered an account online to participate in the department's eDMR system through MoGEM.

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

☐ The permit I am applying for does not require the submission of discharge monitoring reports.

16. JETPAY

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

New Site Specific Permit: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/
Construction Permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/
Modification Fee: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/

17. CERTIFICATION

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

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
Nathan A. Schaaf	City Administrator

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
636-475-4452

DATE SIGNED
04/29/2021

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: cleanwaterpermits@dnr.mo.gov

OR

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.	OUTFALL NO.
Revely WWTP	MO- 0040142	002

PART D – EXPANDED EFFLUENT TESTING DATA

18. 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 MGD or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information **for each outfall through which effluent is discharged**. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected and analyzed using sufficiently sensitive methods found in 40 CFR Part 136. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcdf91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8. In addition, all 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 pollutant scans** and must be no more than four and one-half years prior to the date of the permit application submittal. In the blank rows provided at the end of this list, include any additional data for pollutants not specifically listed in this form. Information may be written in the blanks below or provided as attached documents containing the laboratory test results.

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 RL - Report Li.
	Conc.	Units mg/L	Mass	Units lb.	Conc.	Units mg/L	Mass	Units lb.	No. of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS											
ALUMINUM	<0.10	mg/L	.00	lb	<0.03	mg/L	.00	lb	3	200.7 & 200.8 ICP-AES	0.01
ANTIMONY	<0.02		.00		.00		.00		3	200.7 & 200.8 ICP AES	0.02
ARSENIC	1.18		.10		0.4		.00		3	200.7 & 200.8 ICP AES	0.02
BERYLLIUM	<0.02		.00		<0.02		.00		3	200.7 & 200.8 ICP AES	0.02
CADMIUM	<0.02		.00		<0.02		.00		3	200.7 & 200.8	0.02
CHROMIUM III	<0.01		.00		<0.01		.00		3	200.7 & 200.8	0.01
CHROMIUM VI	<0.01		.00		<0.01		.00		3	200.7 & 200.8	0.01
COPPER	<0.05		.00		<0.05		.00		3	200.7 & 200.8	0.05
IRON	0.17		0.01		.00		.00		3	200.7 & 200.8	0.05
LEAD	<0.02		.00		<0.02		.00		3	200.7 & 200.8	0.02
MERCURY	<0.002		.00		<0.002		.00		3	200.7 & 200.8	0.002
NICKEL	<0.02		.00		<0.02		.00		3	200.7 & 200.8	0.02
SELENIUM	<0.02		.00		<0.02		.00		3	200.7 & 200.8	0.03
SILVER	<0.05		.00		<0.05		.00		3	200.7 & 200.8	0.05
THALLIUM	0.03		.00		<0.03		.00		3	200.7 & 200.8	0.02
ZINC	0.15		.01		.05		.00		3	200.7 & 200.8	0.05
CYANIDE	<0.005		.00		.03		.00		3	335.4	0.005
TOTAL PHENOLIC COMPOUNDS	ND		ND		ND		ND		3	2540B/200.7	1.0
HARDNESS (as $CaCO_3$)	324		2.79		306		2.63		3	2540B/200.7	1.0
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	ND		ND		ND		ND		3	600/624-1	0.020
ACRYLONITRILE	ND		ND		ND		ND		3	600/624-1	0.005
BENZENE	ND		ND		ND		ND		3	600/624-1	0.0005
BROMOFORM	ND		ND		ND		ND		3	600/624-1	0.002
CARBON TETRACHLORIDE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.002

Revely WWTP | PERMIT NO. MO- 0040142 | OUTFALL NO. 002

PART D – EXPANDED EFFLUENT TESTING DATA

18. 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	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	RL 0.002
CHLORODIBROMO-METHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.002
CHLOROETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.002
2-CHLORO-ETHYLVINYL ETHER	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MOD.	0.005
CHLOROFORM	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MOD	0.005
DICHLOROBROMO-METHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.002
1,1-DICHLORO-ETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.002
1,2-DICHLORO-ETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MOD.	0.005
TRANS-1,2-DICHLOROETHYLENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
1,1-DICHLORO-ETHYLENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
1,2-DICHLORO-PROPANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
1,3-DICHLORO-PROPYLENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
ETHYLBENZENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.010
METHYL BROMIDE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
METHYL CHLORIDE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
METHYLENE CHLORIDE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
1,1,2,2-TETRA-CHLOROETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
TETRACHLOROETHYLENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
TOLUENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
1,1,1-TRICHLORO-ETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600-624-1 MODIFIED	0.005
1,1,2-TRICHLORO-ETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600-624-1 MODIFIED	0.005
TRICHLOROETHYLENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
VINYL CHLORIDE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/624-1 MODIFIED	0.005
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
2-CHLOROPHENOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
2,4-DICHLOROPHENOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
2,4-DIMETHYLPHENOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
4,6-DINITRO-O-CRESOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.050
2,4-DINITROPHENOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.020
2-NITROPHENOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.011
4-NITROPHENOL	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.020

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Perry WWTP	MO-0040142	002

PART D – EXPANDED EFFLUENT TESTING DATA

18. 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 mg/L	Mass	Units lb	Conc.	Units mg/L	Mass	Units lb	No. of Samples		RL
PENTACHLOROPHENOL	ND	mg/l	ND	lb	ND	mg/l	ND	lb	3	600/625-1 MODIFIED	0.011
PHENOL	ND	mg/l	ND	lb	ND	mg/l	ND	lb	3	600/625-1 MODIFIED	0.010
2,4,6-TRICHLOROPHENOL	ND	mg/l	ND	lb	ND	mg/l	ND	lb	3	600/625-1 MODIFIED	0.020
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.006
ACENAPHTHYLENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.010
ANTHRACENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.0006
BENZIDINE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.040
BENZO(A)ANTHRACENE	ND	mg/L	ND		ND	mg/L	ND		3	600-625-1 MOD.	0.023
BENZO(A)PYRENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.008
3,4-BENZO-FLUORANTHENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1	0.014
BENZO(GH) PHERYLENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.012
BENZO(K) FLUORANTHENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.008
BIS (2-CHLOROTHOXY) METHANE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.016
BIS (2-CHLOROETHYL) – ETHER	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.017
BIS (2-CHLOROISO-PROPYL) ETHER	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.017
BIS (2-ETHYLHEXYL) PHTHALATE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.008
4-BROMOPHENYL PHENYL ETHER	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.008
BUTYL BENZYL PHTHALATE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.008
2-CHLORONAPH-THALENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.008
4-CHLORPHENYL PHENYL ETHER	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.010
CHRYSENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.008
DI-N-BUTYL PHTHALATE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1	0.008
DI-N-OCTYL PHTHALATE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.008
DIBENZO (A,H) ANTHRACENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.008
1,2-DICHLORO-BENZENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.005
1,3-DICHLORO-BENZENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.005
1,4-DICHLORO-BENZENE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.005
3,3-DICHLORO-BENZIDINE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.050
DIETHYL PHTHALATE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MOD.	0.006
DIMETHYL PHTHALATE	ND	mg/L	ND		ND	mg/L	ND		3	600/625-1 MODIFIED	0.005

780-1605 (10-20)

FACILITY NAME: PEVELY WWTP | PERMIT NO.: MO- 0040142 | OUTFALL NO.: 002

PART D – EXPANDED EFFLUENT TESTING DATA

18. 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	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	RL 0.050
2,6-DINITRO-TOLUENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.050
1,2-DIPHENYL-HYDRAZINE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
FLUORANTHENE	ND	mg/L	ND	lb/L	ND	mg/L	ND	lb/L	3	600/625-1 MODIFIED	0.007
FLUORENE	ND	mg/L	ND	lb/L	ND	mg/L	ND	lb/L	3	600/625-1 MOD.	0.010
HEXACHLOROBENZENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
HEXACHLOROBUTADIENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
HEXACHLOROCYCLO-PENTADIENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600 - 625-1 MODIFIED	0.020
HEXACHLOROETHANE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
INDENO (1,2,3-CD) PYRENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.011
ISOPHORONE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
NAPHTHALENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
NITROBENZENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
N-NITROSODI-PROPYLAMINE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
N-NITROSODI-METHYLAMINE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
N-NITROSODI-PHENYLAMINE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
PHENANTHRENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
PYRENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.010
1,2,4-TRICHLOROBENZENE	ND	mg/L	ND	lb	ND	mg/L	ND	lb	3	600/625-1 MODIFIED	0.005

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.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PEVELY WWTP	MO- [redacted] 0040142	002

PART E – TOXICITY TESTING DATA

19. 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	21	20	19
Test Method Number	5TH Ed. EPA-821-R-02-012	EPA 821-R-02-013	
Final Report Number	EAS-LOG# 2602824	# 60329804	
Outfall Number	002	002	002
Dates Sample Collected	1/27/21	2/24/2020	
Date Test Started	1/26/21	2/23/2020	
Duration	48 HRS.	7-DAYS	
B. Toxicity Test Methods Followed			
Manual Title	STANDARD METHODS WATER WW	STANDARD METHODS	
Edition Number and Year of Publication	18TH 1992	EPA-821-R-02-013, NOV. 2002	
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	1	1	
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:	OUTFALL 002	OUTFALL 002	
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.	OUTFALL NO.
PEVELY	MO- 0040142	

PART E – TOXICITY TESTING DATA

19. TOXICITY TESTING DATA (continued) 21 20 19

	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	MODERATELY HARD RECONSTITUTED	MODERATELY HARD RECONSTITUTED	MOD. HARD SYNTHETIC
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	> 100%	> 100%	> 100%
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	YES	YES	YES
Salinity	YES	YES	YES
Temperature	YES	YES	YES
Ammonia	YES	YES	YES
Dissolved Oxygen	YES	YES	YES
L. Test Results			
Acute:			
Percent Survival in 100% Effluent	100%		100%
LC_{50}	> 100%		> 100%
95% C.I.	1.035 - 1.505 g/L		0.814 g/L - 1.480 g/L
Control Percent Survival	> 90% OR GREATER		90% OR GREATER
Other (Describe)			
Chronic:			
NOEC		100 %	
IC_{25}		> 100	
Control Percent Survival		80% OR GREATER	
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?	YES	YES	YES
Was reference toxicant test within acceptable bounds?	YES	YES	YES
What date was reference toxicant test run (MM/DD/YYYY)?	01/30/2021	02/25/2020	06/12/2019
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.	OUTFALL NO.
Revely WWTP	MO- 0040142	002

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

20. GENERAL INFORMATION

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

☐ Yes ☑ No

20.2 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 3

Number of CIUs

21. INDUSTRIES CONTRIBUTING MORE THAN 5% 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: Ardagh Glass Inc.

MAILING ADDRESS: 1500 Ardagh Group Dr.

CITY	STATE	ZIP CODE
Revely	MO	63070

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

Glass Container Manufacturer

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

Principal Product(s): Glass Containers

Raw Material(s): Sand, Limestone, Soda Ash, Recycled Glass

21.3 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.

150,000 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.

22,000 gpd ☑ Continuous ☐ Intermittent

21.4 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?

21.5 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.	OUTFALL NO.
Pevely WWTP	MO- 0040142	002

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

20. GENERAL INFORMATION

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

☐ Yes ☒ No

20.2 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 3

Number of CIUs ___

21. INDUSTRIES CONTRIBUTING MORE THAN 5% 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: METALTEK INTERNATIONAL – CARONDELET DIVISION

MAILING ADDRESS	CITY	STATE	ZIP CODE
8600 COMMERCIAL BLVD.	PEVELY	MO	63070

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

FOUNDRY PRODUCING STAINLESS STEEL CASTINGS

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

Principal Product(s): HEAT AND CORROSION RESISTANT CASTINGS

Raw Material(s): STEEL PUNCHINGS, OLD CASTINGS, NICKEL, CHROME

21.3 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.

1,205 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.

7,043 gpd ☐ Continuous ☒ Intermittent

21.4 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?

21.5 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.	OUTFALL NO.
Pevely WWTP	MO- 0040142	002

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

20. GENERAL INFORMATION

20.1 Does the treatment works have, or is it subject to, an approved pretreatment program?
☐ Yes ☒ No

20.2 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 3
Number of CIUs ___

21. INDUSTRIES CONTRIBUTING MORE THAN 5% 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
DDP Specialty Electronic Materials US, LLC

MAILING ADDRESS	CITY	STATE	ZIP CODE
500 Dow Industrial Drive	Pevely,	MO	63070

21.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge
Foam Producer, used in Building/Home Construction - Peak Months - Summer

21.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.
Principal ~~Product~~ Raw(s): Foam - Polystyrene Co-Polymer
Product ~~Raw~~ Material(s): Extruded Polystyrene

21.3 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.
3,283 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.
105 gpd ☐ Continuous ☑ Intermittent

21.4 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?

21.5 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.	OUTFALL NO.
PEVELY WWTP	MO- 0040142	002

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

22.1 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

22.2 Method by which RCRA waste is received. (Check all that apply)
☐ Truck ☐ Rail ☐ Dedicated Pipe N/A

22.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

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

23.1 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.

23.2 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).

23.3 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)

23.4 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.

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CITY OF PEVELY
401 North Main St.
Pevely, MO 63070

Attention: Dale King

March 1, 2021
Lab No. 21E-0194
Invoice No. INSTL4808
PO No. 10325

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 02/09/21, 07:30

UNITS: Milligrams per Liter (mg/L) except as otherwise noted

RESULTS:

ANALYTE	RESULTS	RL	TEST METHOD	DATE OF ANALYSIS
pH, std. units	7.45	—	4500 H^+ B	02/09/2021
Biological Oxygen Demand	ND	10	5210 B	02/10/2021
E.coli, Colonies/100 mL	2990	100	9222 D	02/10/2021
Total Suspended Solids	9	5	2540 D	02/11/2021
Total Phosphorus	0.98	0.20	200.7	02/15/2021
Total Kjeldahl Nitrogen	1.9	0.2	4500-N_{org} B	02/15/2021
Cyanide, Total	ND	0.005	335.4	02/11/2021
Nitrate + Nitrite-N	14.4	0.1	300.0	02/11/2021
Ammonia-N	0.3	0.2	4500-NH_3 B,C	02/18/2021
Total Residual Chlorine	0.02	0.02	HACH 8167	02/09/2021
Dissolved Oxygen	9.42	—	D.O. PROBE	02/09/2021
Oil & Grease	ND	5	1664	02/12/2021
Total Hardness as $CaCO_3$	318	1.0	2540B / 200.7	02/15/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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March 1, 2021
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Invoice No. INSTL4808
PO No. 10325

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 02/09/21, 07:30

METHOD: 200.7 (ICP-AES) & 200.8 (ICP-AES)

UNITS: Milligrams per Liter (mg/L)

ANALYTE	RESULTS	RL	DATE OF ANALYSIS
Aluminum	ND	0.10	02/15/2021
Antimony	ND	0.02	02/18/2021
Arsenic	ND	0.02	02/18/2021
Beryllium	ND	0.02	02/18/2021
Cadmium	ND	0.02	02/18/2021
*Chromium, Trivalent	ND	0.01	02/18/2021
*Chromium, Hexavalent	ND	0.01	02/18/2021
Copper	ND	0.05	02/15/2021
Iron	0.17	0.05	02/15/2021
Lead	ND	0.02	02/18/2021
Mercury	ND	0.002	02/18/2021
Nickel	ND	0.02	02/18/2021
Selenium	ND	0.02	02/18/2021
Silver	ND	0.05	02/15/2021
Thallium	ND	0.02	02/18/2021
Zinc	ND	0.05	02/18/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

* Hexavalent and Trivalent Chromium determined by total chromium less than 0.01 mg/L

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March 1, 2021
Lab No. 21E-0194
Invoice No. INSTL4808
PO No. 10325

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 02/09/21, 07:30

METHOD: 600 / 624-1 Modified

UNITS: Milligrams per Liter (mg/L)

RESULTS:

VOLATILE ORGANIC COMPOUNDS

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
1,1,1-Trichloroethane	ND	0.002	1	02/10/2021
1,1,2,2-Tetrachloroethane	ND	0.002	1	02/10/2021
1,1,2-Trichloroethane	ND	0.0005	1	02/10/2021
1,1-Dichloroethane	ND	0.002	1	02/10/2021
1,1-Dichloroethene	ND	0.002	1	02/10/2021
1,2-Dichloroethane	ND	0.002	1	02/10/2021
1,2-Dichloropropane	ND	0.002	1	02/10/2021
1,2-Dichlorobenzene	ND	0.002	1	02/10/2021
1,3-Dichlorobenzene	ND	0.002	1	02/10/2021
1,4-Dichlorobenzene	ND	0.002	1	02/10/2021
2-Chloroethyl vinyl ether	ND	0.005	1	02/10/2021
Acrolein	ND	0.020	1	02/10/2021
Acrylonitrile	ND	0.005	1	02/10/2021
Benzene	ND	0.0005	1	02/10/2021
Bromodichloromethane	ND	0.002	1	02/10/2021
Bromoform	ND	0.002	1	02/10/2021
Bromomethane	ND	0.005	1	02/10/2021
Carbon tetrachloride	ND	0.002	1	02/10/2021
Chlorobenzene	ND	0.002	1	02/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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Invoice No. INSTL4808
PO No. 10325

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 02/09/21, 07:30

UNITS: Milligrams per Liter (mg/L)

VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Chloroform	ND	0.002	1	02/10/2021
Chloromethane	ND	0.005	1	02/10/2021
Dibromochloromethane	ND	0.002	1	02/10/2021
Ethylbenzene	ND	0.002	1	02/10/2021
Methylene chloride	ND	0.002	1	02/10/2021
Tetrachloroethene	ND	0.0005	1	02/10/2021
Toluene	ND	0.002	1	02/10/2021
trans-1,2-Dichloroethene	ND	0.002	1	02/10/2021
trans-1,3-Dichloropropene	ND	0.002	1	02/10/2021
Trichloroethene	ND	0.002	1	02/10/2021
Vinyl chloride	ND	0.002	1	02/10/2021
Surr: 1,2-Dichloroethane-d4	108.0 % rec.	80 - 120%		
Surr: 4-Bromofluorobenzene	96.9 % rec.	80 - 120%		
Surr: Dibromofluoromethane	100.3 % rec.	80 - 120%		
Surr: Toluene-d8	104.6 % rec.	80 - 120%		

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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Attention: Dale King

March 1, 2021
Lab No. 21E-0194
Invoice No. INSTL4808
PO No. 10325

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 02/09/21, 07:30

METHOD: 600 / 625-1 Modified

UNITS: Milligrams per Liter (mg/L)

RESULTS:

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
1,2- Diphenylhydrazine	ND	0.010	1	02/10/2021
2,4,6-Trichlorophenol	ND	0.008	1	02/10/2021
2,4-Dichlorophenol	ND	0.008	1	02/10/2021
2,4-Dimethylphenol	ND	0.008	1	02/10/2021
2,4-Dinitrophenol	ND	0.126	1	02/10/2021
2,4-Dinitrotoluene	ND	0.015	1	02/10/2021
2,6-Dinitrotoluene	ND	0.006	1	02/10/2021
2-Chloronaphthalene	ND	0.006	1	02/10/2021
2-Chlorophenol	ND	0.010	1	02/10/2021
2-Nitrophenol	ND	0.011	1	02/10/2021
3,3-Dichlorobenzidine	ND	0.050	1	02/10/2021
4,6-Dinitro-2-methylphenol	ND	0.072	1	02/10/2021
4-Bromophenyl phenyl ether	ND	0.006	1	02/10/2021
p-Chloro-m-cresol	ND	0.009	1	02/10/2021
4-Chlorophenyl phenyl ether	ND	0.013	1	02/10/2021
4-Nitrophenol	ND	0.007	1	02/10/2021
Acenaphthene	ND	0.006	1	02/10/2021
Acenaphthylene	ND	0.010	1	02/10/2021
Anthracene	ND	0.006	1	02/10/2021
Benzidine	ND	0.040	1	02/10/2021
Benzo(a)anthracene	ND	0.023	1	02/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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Invoice No. INSTL4808
PO No. 10325

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 02/09/21, 07:30

UNITS: Milligrams per Liter (mg/L)

SEMI-VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Benzo(a)pyrene	ND	0.008	1	02/10/2021
Benzo(b)fluoranthene	ND	0.014	1	02/10/2021
Benzo(g,h,i)perylene	ND	0.012	1	02/10/2021
Benzo(k)fluoranthene	ND	0.008	1	02/10/2021
Bis(2-chloroethoxy)methane	ND	0.016	1	02/10/2021
Bis(2-chloroethyl)ether	ND	0.017	1	02/10/2021
Bis(2-chloroisopropyl)ether	ND	0.017	1	02/10/2021
Bis(2-ethylhexyl)phthalate	ND	0.008	1	02/10/2021
Butyl benzyl phthalate	ND	0.008	1	02/10/2021
Chrysene	ND	0.008	1	02/10/2021
Dibenzo(a,h)anthracene	ND	0.008	1	02/10/2021
Diethyl phthalate	ND	0.006	1	02/10/2021
Dimethyl phthalate	ND	0.005	1	02/10/2021
Di-n-butyl phthalate	ND	0.008	1	02/10/2021
Di-n-octyl phthalate	ND	0.008	1	02/10/2021
Fluoranthene	ND	0.007	1	02/10/2021
Fluorene	ND	0.006	1	02/10/2021
Hexachlorobenzene	ND	0.006	1	02/10/2021
Hexachlorobutadiene	ND	0.003	1	02/10/2021
Hexachlorocyclopentadiene	ND	0.020	1	02/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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CITY OF PEVELY
401 North Main St.
Pevely, MO 63070

Attention: Dale King

March 22, 2021
Lab No. 21E-0324
Invoice No. INSTL5549
PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

UNITS: Milligrams per Liter (mg/L) except as otherwise noted

RESULTS:

ANALYTE	RESULTS	RL	TEST METHOD	DATE OF ANALYSIS
pH, std. units	7.26	---	4500 H^+ B	03/09/2021
Biological Oxygen Demand	< 10	10	5210 B	03/10/2021
E.coli, Colonies/100 mL	3940	100	9222 D	03/10/2021
Total Suspended Solids	< 5	5	2540 D	03/19/2021
Total Phosphorus	2.19	0.20	200.7	03/10/2021
Total Kjeldahl Nitrogen	2.5	0.2	4500-N_{org} B	03/12/2021
Cyanide, Total	<0.005	0.005	335.4	03/15/2021
Nitrate + Nitrite-N	13.4	0.1	300.0	03/16/2021
Ammonia-N	2.2	0.2	4500-NH_3 B,C	03/11/2021
Total Residual Chlorine	0.03	0.02	HACH 8167	03/09/2021
Dissolved Oxygen	8.30	---	D.O. PROBE	03/09/2021
Oil & Grease	< 5	5	1664	03/12/2021
Total Hardness as $CaCO_3$	324	1.0	2540B / 200.7	03/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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CITY OF PEVELY
401 North Main St.
Pevely, MO 63070

Attention: Dale King

March 22, 2021
Lab No. 21E-0324
Invoice No. INSTL5549
PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

METHOD: 200.7 (ICP-AES) & 200.8 (ICP-AES)

UNITS: Milligrams per Liter (mg/L)

ANALYTE	RESULTS	RL	DATE OF ANALYSIS
Aluminum	ND	0.10	03/10/2021
Antimony	ND	0.02	03/10/2021
Arsenic	1.18	0.02	03/15/2021
Beryllium	ND	0.02	03/10/2021
Cadmium	ND	0.02	03/10/2021
*Chromium, Trivalent	ND	0.01	03/10/2021
*Chromium, Hexavalent	ND	0.01	03/10/2021
Copper	ND	0.05	03/10/2021
Iron	ND	0.05	03/10/2021
Lead	< 0.02	0.02	03/15/2021
Mercury	<0.002	0.002	03/15/2021
Nickel	ND	0.02	03/10/2021
Selenium	ND	0.03	03/10/2021
Silver	ND	0.05	03/10/2021
Thallium	ND	0.02	03/10/2021
Zinc	ND	0.05	03/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

* Hexavalent and Trivalent Chromium determined by total chromium less than 0.01 mg/L

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Attention: Dale King

March 22, 2021
Lab No. 21E-0324
Invoice No. INSTL5549
PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

METHOD: 600 / 624-1 Modified

UNITS: Milligrams per Liter (mg/L)

RESULTS:

VOLATILE ORGANIC COMPOUNDS

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
1,1,1-Trichloroethane	ND	0.002	1	03/11/2021
1,1,2,2-Tetrachloroethane	ND	0.002	1	03/11/2021
1,1,2-Trichloroethane	ND	0.0005	1	03/11/2021
1,1-Dichloroethane	ND	0.002	1	03/11/2021
1,1-Dichloroethene	ND	0.002	1	03/11/2021
1,2-Dichloroethane	ND	0.002	1	03/11/2021
1,2-Dichloropropane	ND	0.002	1	03/11/2021
1,2-Dichlorobenzene	ND	0.002	1	03/11/2021
1,3-Dichlorobenzene	ND	0.002	1	03/11/2021
1,4-Dichlorobenzene	ND	0.002	1	03/11/2021
2-Chloroethyl vinyl ether	ND	0.005	1	03/11/2021
Acrolein	ND	0.020	1	03/11/2021
Acrylonitrile	ND	0.005	1	03/11/2021
Benzene	ND	0.0005	1	03/11/2021
Bromodichloromethane	ND	0.002	1	03/11/2021
Bromoform	ND	0.002	1	03/11/2021
Bromomethane	ND	0.005	1	03/11/2021
Carbon tetrachloride	ND	0.002	1	03/11/2021
Chlorobenzene	ND	0.002	1	03/11/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

UNITS: Milligrams per Liter (mg/L)

VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Chloroform	ND	0.002	1	03/11/2021
Chloromethane	ND	0.005	1	03/11/2021
Dibromochloromethane	ND	0.002	1	03/11/2021
Ethylbenzene	ND	0.002	1	03/11/2021
Methylene chloride	ND	0.002	1	03/11/2021
Tetrachloroethene	ND	0.0005	1	03/11/2021
Toluene	ND	0.002	1	03/11/2021
trans-1,2-Dichloroethene	ND	0.002	1	03/11/2021
trans-1,3-Dichloropropene	ND	0.002	1	03/11/2021
Trichloroethene	ND	0.002	1	03/11/2021
Vinyl chloride	ND	0.002	1	03/11/2021
Surr: 1,2-Dichloroethane-d4	99.2 % rec.	80 - 120%		
Surr: 4-Bromofluorobenzene	101.2 % rec.	80 - 120%		
Surr: Dibromofluoromethane	97.8 % rec.	80 - 120%		
Surr: Toluene-d8	96.2 % rec.	80 - 120%		

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

CITY OF PEVELY
401 North Main St.
Pevely, MO 63070

Attention: Dale King

March 22, 2021
Lab No. 21E-0324
Invoice No. INSTL5549
PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

METHOD: 600 / 625-1 Modified

UNITS: Milligrams per Liter (mg/L)

RESULTS:

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
1,2- Diphenylhydrazine	ND	0.010	1	03/13/2021
2,4,6-Trichlorophenol	ND	0.008	1	03/13/2021
2,4-Dichlorophenol	ND	0.008	1	03/13/2021
2,4-Dimethylphenol	ND	0.008	1	03/13/2021
2,4-Dinitrophenol	ND	0.126	1	03/13/2021
2,4-Dinitrotoluene	ND	0.017	1	03/13/2021
2,6-Dinitrotoluene	ND	0.006	1	03/13/2021
2-Chloronaphthalene	ND	0.006	1	03/13/2021
2-Chlorophenol	ND	0.010	1	03/13/2021
2-Nitrophenol	ND	0.011	1	03/13/2021
3,3-Dichlorobenzidine	ND	0.050	1	03/13/2021
4,6-Dinitro-2-methylphenol	ND	0.072	1	03/13/2021
4-Bromophenyl phenyl ether	ND	0.006	1	03/13/2021
p-Chloro-m-cresol	ND	0.009	1	03/13/2021
4-Chlorophenyl phenyl ether	ND	0.013	1	03/13/2021
4-Nitrophenol	ND	0.007	1	03/13/2021
Acenaphthene	ND	0.006	1	03/13/2021
Acenaphthylene	ND	0.010	1	03/13/2021
Anthracene	ND	0.006	1	03/13/2021
Benzidine	ND	0.040	1	03/13/2021
Benzo(a)anthracene	ND	0.023	1	03/13/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

UNITS: Milligrams per Liter (mg/L)

SEMI-VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Benzo(a)pyrene	ND	0.008	1	03/13/2021
Benzo(b)fluoranthene	ND	0.014	1	03/13/2021
Benzo(g,h,i)perylene	ND	0.012	1	03/13/2021
Benzo(k)fluoranthene	ND	0.008	1	03/13/2021
Bis(2-chloroethoxy)methane	ND	0.016	1	03/13/2021
Bis(2-chloroethyl)ether	ND	0.017	1	03/13/2021
Bis(2-chloroisopropyl)ether	ND	0.017	1	03/13/2021
Bis(2-ethylhexyl)phthalate	ND	0.008	1	03/13/2021
Butyl benzyl phthalate	ND	0.008	1	03/13/2021
Chrysene	ND	0.008	1	03/13/2021
Dibenzo(a,h)anthracene	ND	0.008	1	03/13/2021
Diethyl phthalate	ND	0.006	1	03/13/2021
Dimethyl phthalate	ND	0.005	1	03/13/2021
Di-n-butyl phthalate	ND	0.008	1	03/13/2021
Di-n-octyl phthalate	ND	0.008	1	03/13/2021
Fluoranthene	ND	0.007	1	03/13/2021
Fluorene	ND	0.006	1	03/13/2021
Hexachlorobenzene	ND	0.006	1	03/13/2021
Hexachlorobutadiene	ND	0.003	1	03/13/2021
Hexachlorocyclopentadiene	ND	0.020	1	03/13/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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March 22, 2021
Lab No. 21E-0324
Invoice No. INSTL5549
PO No. 10333

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 03/09/21, 08:00

UNITS: Milligrams per Liter (mg/L)

SEMI-VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Hexachloroethane	ND	0.005	1	03/13/2021
Indo(1,2,3-cd)pyrene	ND	0.011	1	03/13/2021
Isophorone	ND	0.007	1	03/13/2021
Naphthalene	ND	0.005	1	03/13/2021
Nitrobenzene	ND	0.006	1	03/13/2021
N-Nitrosodimethylamine	ND	0.020	1	03/13/2021
N-Nitroso-di-n-propylamine	ND	0.010	1	03/13/2021
N-Nitrosodiphenylamine	ND	0.010	1	03/13/2021
Pentachlorophenol	ND	0.011	1	03/13/2021
Phenanthrene	ND	0.016	1	03/13/2021
Phenol	ND	0.004	1	03/13/2021
Pyrene	ND	0.006	1	03/13/2021
Surr: 2,4,6-Tribromophenol	90.4 % rec.	28.4 – 122 %		
Surr: 2-Fluorobiphenyl	83.5 % rec.	36.3 – 102%		
Sur: 2-Fluorophenol	49.1 % rec.	12.3 – 72.5 %		
Surr: Nitrobenzene-d5	65.0 % rec.	15 – 314 %		
Surr: phenol-d5	35.6 % rec.	8 – 424 %		
Surr: p-Terphenyl-d14	73.5 % rec.	10 – 112%		

RL: Minimum Reporting Limit
ND: None Detected Above the RL

Steve Root, Manager
Environmental Testing

SR/jlb

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CITY OF PEVELY
401 North Main St.
Pevely, MO 63070

April 22, 2021
Lab No. 21E-0487
Invoice No. INSTL6730

Attention: Dale King

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

UNITS: Milligrams per Liter (mg/L) except as otherwise noted

RESULTS:

ANALYTE	RESULTS	RL	TEST METHOD	DATE OF ANALYSIS
pH, std. units	7.20	---	4500 H^+ B	04/06/2021
Biological Oxygen Demand	<10.0	10	5210 B	04/07/2021
E.coli, Colonies/100 mL	6	1	9222 D	04/06/2021
Total Suspended Solids	7	5	2540 D	04/09/2021
Total Phosphorus	2.5	0.20	200.7	04/13/2021
Total Kjeldahl Nitrogen	1.4	0.2	4500-N_{org} B	04/09/2021
Cyanide, Total	<0.005	0.005	335.4	04/09/2021
Nitrate + Nitrite-N	12.6	0.1	300.0	04/08/2021
Ammonia-N	0.2	0.2	4500-NH_3 B,C	04/09/2021
Dissolved Oxygen	7.70	---	D.O. PROBE	04/06/2021
Oil & Grease	<5	5	1664	04/07/2021
Total Hardness as $CaCO_3$	275	1.0	2540B / 200.7	04/13/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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April 22, 2021
Lab No. 21E-0487
Invoice No. INSTL6730

Attention: Dale King

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

METHOD: 200.7 (ICP-AES) & 200.8 (ICP-AES)

UNITS: Milligrams per Liter (mg/L)

ANALYTE	RESULTS	RL	DATE OF ANALYSIS
Aluminum	<0.10	0.10	04/13/2021
Antimony	<0.02	0.02	04/13/2021
Arsenic	<0.02	0.02	04/16/2021
Beryllium	<0.02	0.02	04/13/2021
Cadmium	<0.02	0.02	04/13/2021
*Chromium, Trivalent	<0.01	0.01	04/16/2021
*Chromium, Hexavalent	<0.01	0.01	04/16/2021
Copper	<0.05	0.05	04/13/2021
Iron	0.17	0.05	04/13/2021
Lead	<0.02	0.02	04/16/2021
Mercury	<0.002	0.002	04/16/2021
Nickel	<0.02	0.02	04/13/2021
Selenium	<0.02	0.02	04/13/2021
Silver	<0.05	0.05	04/13/2021
Thallium	0.03	0.02	04/13/2021
Zinc	0.15	0.05	04/13/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

* Hexavalent and Trivalent Chromium determined by total chromium less than 0.01 mg/L

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April 22, 2021
Lab No. 21E-0487
Invoice No. INSTL6730

Attention: Dale King

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

METHOD: 600 / 624-1 Modified

UNITS: Milligrams per Liter (mg/L)

RESULTS:

VOLATILE ORGANIC COMPOUNDS

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
1,1,1-Trichloroethane	ND	0.005	1	04/10/2021
1,1,2,2-Tetrachloroethane	ND	0.005	1	04/10/2021
1,1,2-Trichloroethane	ND	0.005	1	04/10/2021
1,1-Dichloroethane	ND	0.005	1	04/10/2021
1,1-Dichloroethene	ND	0.005	1	04/10/2021
1,2-Dichloroethane	ND	0.005	1	04/10/2021
1,2-Dichloropropane	ND	0.005	1	04/10/2021
1,2-Dichlorobenzene	ND	0.005	1	04/10/2021
1,3-Dichlorobenzene	ND	0.005	1	04/10/2021
1,4-Dichlorobenzene	ND	0.005	1	04/10/2021
2-Chloroethyl vinyl ether	ND	0.005	1	04/10/2021
Acrolein	ND	0.050	1	04/10/2021
Acrylonitrile	ND	0.010	1	04/10/2021
Benzene	ND	0.005	1	04/10/2021
Bromodichloromethane	ND	0.005	1	04/10/2021
Bromoform	ND	0.005	1	04/10/2021
Bromomethane	ND	0.010	1	04/10/2021
Carbon tetrachloride	ND	0.005	1	04/10/2021
Chlorobenzene	ND	0.005	1	04/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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April 22, 2021
Lab No. 21E-0487
Invoice No. INSTL6730

Attention: Dale King

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

UNITS: Milligrams per Liter (mg/L)

VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Chloroform	ND	0.005	1	04/10/2021
Chloromethane	ND	0.010	1	04/10/2021
Dibromochloromethane	ND	0.005	1	04/10/2021
Ethylbenzene	ND	0.005	1	04/10/2021
Methylene chloride	ND	0.005	1	04/10/2021
Tetrachloroethene	ND	0.005	1	04/10/2021
Toluene	ND	0.005	1	04/10/2021
trans-1,2-Dichloroethene	ND	0.010	1	04/10/2021
trans-1,3-Dichloropropene	ND	0.005	1	04/10/2021
Trichloroethene	ND	0.005	1	04/10/2021
Vinyl chloride	ND	0.005	1	04/10/2021

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ND: None Detected Above the RL

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MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

METHOD: 600 / 625-1 Modified

UNITS: Milligrams per Liter (mg/L)

RESULTS:

SEMI-VOLATILE ORGANIC COMPOUNDS

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
1,2- Diphenylhydrazine	ND	0.010	1	04/10/2021
2,4,6-Trichlorophenol	ND	0.020	1	04/10/2021
2,4-Dichlorophenol	ND	0.010	1	04/10/2021
2,4-Dimethylphenol	ND	0.010	1	04/10/2021
2,4-Dinitrophenol	ND	0.020	1	04/10/2021
2,4-Dinitrotoluene	ND	0.010	1	04/10/2021
2,6-Dinitrotoluene	ND	0.010	1	04/10/2021
2-Chloronaphthalene	ND	0.010	1	04/10/2021
2-Chlorophenol	ND	0.010	1	04/10/2021
2-Nitrophenol	ND	0.010	1	04/10/2021
3,3-Dichlorobenzidine	ND	0.020	1	04/10/2021
4,6-Dinitro-2-methylphenol	ND	0.050	1	04/10/2021
4-Bromophenyl phenyl ether	ND	0.010	1	04/10/2021
4-Chloro-3-Methylphenol	ND	0.010	1	04/10/2021
4-Chlorophenyl phenyl ether	ND	0.010	1	04/10/2021
4-Nitrophenol	ND	0.020	1	04/10/2021
Acenaphthene	ND	0.010	1	04/10/2021
Acenaphthylene	ND	0.010	1	04/10/2021
Anthracene	ND	0.010	1	04/10/2021
Benzidine	ND	0.080	1	04/10/2021
Benzo(a)anthracene	ND	0.010	1	04/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

UNITS: Milligrams per Liter (mg/L)

SEMI-VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Benzo(a)pyrene	ND	0.010	1	04/10/2021
Benzo(b)fluoranthene	ND	0.010	1	04/10/2021
Benzo(g,h,i)perylene	ND	0.010	1	04/10/2021
Benzo(k)fluoranthene	ND	0.010	1	04/10/2021
Bis(2-chloroethoxy)methane	ND	0.010	1	04/10/2021
Bis(2-chloroethyl)ether	ND	0.010	1	04/10/2021
Bis(2-chloroisopropyl)ether	ND	0.010	1	04/10/2021
Bis(2-ethylhexyl)phthalate	ND	0.010	1	04/10/2021
Butyl benzyl phthalate	ND	0.010	1	04/10/2021
Chrysene	ND	0.010	1	04/10/2021
Dibenzo(a,h)anthracene	ND	0.010	1	04/10/2021
Diethyl phthalate	ND	0.010	1	04/10/2021
Dimethyl phthalate	ND	0.010	1	04/10/2021
Di-n-butyl phthalate	ND	0.010	1	04/10/2021
Di-n-octyl phthalate	ND	0.010	1	04/10/2021
Fluoranthene	ND	0.010	1	04/10/2021
Fluorene	ND	0.010	1	04/10/2021
Hexachlorobenzene	ND	0.010	1	04/10/2021
Hexachlorobutadiene	ND	0.010	1	04/10/2021
Hexachlorocyclopentadiene	ND	0.020	1	04/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

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Lab No. 21E-0487
Invoice No. INSTL6730

Attention: Dale King

REPORT OF ANALYSIS

MATERIAL: Water Sample, Pevely Wastewater Treatment Plant
Collected 04/06/2021, 08:15

UNITS: Milligrams per Liter (mg/L)

SEMI-VOLATILE ORGANIC COMPOUNDS CONTINUED

ANALYTE	RESULTS	RL	DILUTION FACTOR	DATE OF ANALYSIS
Hexachloroethane	ND	0.010	1	04/10/2021
Indo(1,2,3-cd)pyrene	ND	0.010	1	04/10/2021
Isophorone	ND	0.010	1	04/10/2021
Naphthalene	ND	0.010	1	04/10/2021
Nitrobenzene	ND	0.010	1	04/10/2021
N-Nitrosodimethylamine	ND	0.010	1	04/10/2021
N-Nitroso-di-n-propylamine	ND	0.010	1	04/10/2021
N-Nitrosodiphenylamine	ND	0.010	1	04/10/2021
Pentachlorophenol	ND	0.050	1	04/10/2021
Phenanthrene	ND	0.010	1	04/10/2021
Phenol	ND	0.010	1	04/10/2021
Pyrene	ND	0.010	1	04/10/2021

RL: Minimum Reporting Limit
ND: None Detected Above the RL

Kimberly Kostelac, Manager
Environmental Testing

KK/tz

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG#2602824
January 28, 2021 through January 30, 2021

RECEIVED
MAY 06 2021
Water Protection Program

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

Environmental Analysis South, Inc.
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REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG#2602824
January 28, 2021 through January 30, 2021

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
TUa Value	<1.00	<1.00
Result of Toxicity Test	Monitor	Monitor

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

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test
TUa < 1.00

Ceriodaphnia dubia 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test
TUa < 1.00

Approved by _____

Sara C. Shields, Chemist

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG#2602824
January 28, 2021 through January 30, 2021

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

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

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

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from ARO (Aquatic Research Organisms) located in Hampton, New Hampshire and shipped overnight for use in the whole effluent toxicity test.

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REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG#2602824
January 28, 2021 through January 30, 2021

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on January 13, 2021 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – LC_{50} = 1.270 g/l 95%CI (1.035-1.505 g/l)
EAS %CV = 9.3%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. ***C. dubia*** - 48 hr. Acute Test – LC_{50} = 0.432 g/l 95%CI (0.269-0.594 g/l)
EAS %CV = 18.8%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR WHOLE EFFLUENT TOXICITY TESTS

RETURN FORM TO: Southeast Regional Office
2155 N. Westwood Blvd. Poplar Bluff, MO 63901

Facility Name	Pevely Wastewater Treatment Plant	Receiving Water	Tributary to Sandy Creek
Permit Number	MO-0040142	Laboratory Name	Environmental Analysis South, Inc.
Outfall	002	Laboratory Report #	MO_2602824

SAMPLE INFORMATION

Sample Number	Sample Collection				Sample Temperature (°C)		pH (SU)	Hand delivered? (If yes, ≤ 4 hrs?	Hold Time ≤ 36 hours?	Sample Acceptable
	Effluent or Upstream	Sample Type	Beginning Date	End Date	At Collection	At Lab	At Lab			
1	Effluent	24 hr composite	01/26/21	01/27/21		7	7.82	■ Y ☐ N	■ Y ☐ N	■ Y ☐ N
2	Upstream	grab	01/27/21	01/27/21		7	7.72	■ Y ☐ N	■ Y ☐ N	■ Y ☐ N
3								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
4								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N

Describe any unusual conditions during sampling that might influence test results

TEST INFORMATION - ACUTE

Test Method:	*C. dubia* 2002.0		*P. promelas* 2000.0	
Date Test Initiated:	01/28/2021			
AEC/IWC Info:	AEC = 100%			
Dilution Series	100%	50%	25%	12.5%
	6.25%			
Dilution Water:	*C. dubia*	RW ■	LW ☐	
	P. promelas	RW ■	LW ☐	
	RW = Receiving Stream Control		LW = Lab Water Control	

Comments:

QA/QC CONDITIONS - ACUTE

	YES	NO
Did test conditions meet all test acceptability criterion required by the specified method?	✓	
Temperatures maintained during test (20 ± 1°C)		✓
Temperatures maintained during test (25 ± 1°C)	✓	
Dissolved oxygen ≥ 4.0 mg/L throughout test?	✓	
Effluent pH maintained within 6.0 - 9.0 SU throughout test?	✓	
Concurrent or monthly reference tests within acceptable limits?	✓	
Were effluent samples modified prior to testing? (ex. filtration, aeration, chemical addition including de-chlorination or pH adjustment)		✓

Comments:

WATER CHEMISTRY (All values reported in mg/L, except for pH and conductivity)

Sample Type	Sample Number	Conductivity (µmhos)	Unionized Ammonia	Hardness	Alkalinity	pH (SU) After Warming	Total Residual Chlorine	Other	Other	Other
Upstream	2602824A	774	<0.010	254	175	7.69	<0.04	DO=10.8		
Effluent	2602824	889	<0.010	289	214	7.49	<0.04	DO=10.7		
Lab Water	RC4271	261	<0.010	70.0	60.4	8.07	<0.04	DO=9.0		

Comments:

TU_a limit = Monitoring only.

Pimephales promelas Acute Results	LC_{50}=	>100%	Confidence Interval % =	N/A	TU_a= <1.0
Ceriodaphnia dubia Acute Results	LC_{50}=	>100%	Confidence Interval % =	N/A	TU_a= <1.0

Receiving Water Controls				Lab Water Controls			
Fathead Minnow		*Ceriodaphnia dubia*		Fathead Minnow		*Ceriodaphnia dubia*	
Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N

Comments:

SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.010	DATE	PHONE NUMBER

Version 1.0

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 06, 2020

Dale King
City of Pevely
9088 Plant Road
Pevely, MO 63070

RE: Project: CHRONIC WET TESTING
Pace Project No.: 60329804

Dear Dale King:
Enclosed are the analytical results for sample(s) received by the laboratory on February 25, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

CHRONIC TOXICITY TEST FOR CITY OF PEVELY

PERMIT # MO-0040142

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

The City of Pevely
Attn: Dale King
9088 Plant Road
Pevely, MO 63070
1-636-475-7769

PREPARED BY:

Pace Analytical Services, Inc.
808 West McKay
Frontenac, KS 66763
1-620-235-0003

March 5, 2020

TABLE OF CONTENTS

SUMMARY

A Chronic Whole Effluent Toxicity Test using the 7-day chronic fathead minnows (Pimephales promelas), static renewal larval survival and growth test, and three brood 7-day chronic Cladoceran (Ceriodaphnia dubia), static renewal survival and reproduction test, was conducted on effluent discharge water collected at CITY OF PEVELY effluent discharge from February 24, 2020 to February 28, 2020. All the test methods followed are as listed in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms."

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 are calculated using effluent concentrations and their corresponding percent mortality data. The 95% confidence intervals are calculated where appropriate by the Spearman-Karber method. Statistical analysis is accomplished by following steps in EPA 821-R-02-013, November 2002 and by use of Toxstat version 3.4.

In minnow section of testing, it was observed that the effluent had no significant effect on the survival of the larvae at the 100% concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 100% for survival. No significant reduction in growth was observed in the 100% effluent concentration. The Toxic Units is <1. The IC25 is >100. The NOEC for growth in effluent was determined to be 100%.

In Cladoceran section of testing, it was observed that the effluent had no significant effect on the survival of the organisms in the 100% effluent concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 100% for survival. No significant reduction in reproduction was observed in the 100% effluent concentrations. The Toxic Units is <1. The IC25 is >100. The NOEC for reproduction in effluent was determined to be 100%.

The chronic toxicity exhibited by the fathead minnows and the Ceriodaphnia treated by the effluent sampled from February 24 to February 28 from the CITY OF PEVELY effluent discharge, is acceptable as described in EPA 821-R-02-013.

INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from CITY OF PEVELY effluent discharge. Chronic toxicity was measured using the Pimephales promelas at larval for survival and growth test and the Ceriodaphnia dubia survival and reproduction test described in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms.". The raw data of the study is stored at Pace Analytical Services, INC. 808 West McKay, Frontenac, KS 66763.

TEST MATERIAL

CITY OF PEVELY personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier on 2-25-20. Subsequent samples followed by delivery on 2-27-20 and on 2-29-20. All samples were stored at ≤ 6° Celsius. Moderately Hard Synthetic was used as a control and also to make the required dilutions in the test as described in EPA 821-R-02-013.

TEST METHODS

Pace used EPA test method 1000.0 for conducting the Fathead Minnow, Pimephales promelas, Larval Survival and Growth Test. EPA test method 1002.0 was used for conducting the Cladoceran, Ceriodaphnia dubia, Survival and Reproduction Test. The tests were conducted to estimate the NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 2-25-20 and carried out until 3-3-20. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Ten larvae were placed in each of at least 4 replicates to make a total of 40 larvae per sample concentration. The Ceriodaphnia tests were carried out in 35ml vials containing 25 ml of test solution. One Neonate was placed in each of 10 replicates to make a total of 10 neonates per sample concentration.

TEST ORGANISMS

The organisms used in these tests were cultured at Pace under controlled temperature and photoperiod conditions and/or were purchased from an external supplier. Pace maintains records of all culture techniques used in producing organisms.

TABLE 1

Permittee: CITY OF PEVELY Effluent discharge.

Date Sampled No. 1: 2-24-20 7:00

No. 2: 2-26-20 9:45

No. 3: 2-28-20 10:45

Test Initiated: 11:35 Date: 2-25-20

Dilution Water used: Moderately Hard Synthetic

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL
(Pimephales promelas)

DATA TABLE FOR GROWTH OF FATHEAD MINNOWS

Effluent Concentration (%)	Average Dry Weight in Milligrams in Replicate Chambers A	B	C	D	Mean Dry Weight (mg)	CV% *
Control 0%	0.524	0.460	0.473	0.460	0.479	6.35
Dilution 1 6.25%	0.447	0.491	0.415	0.451	0.451	6.91
Dilution 2 12.5%	0.539	0.441	0.555	0.450	0.496	11.90
Dilution 3 25%	0.454	0.495	0.597	0.523	0.517	11.65
Dilution 4 50%	0.581	0.453	0.451	0.576	0.515	14.18
Dilution 5 100%	0.446	0.570	0.459	0.594	0.516	14.90

* Coefficient of Variation = Standard Deviation X 100 / Mean

Permittee: CITY OF PEVELY Effluent discharge.

FATHEAD MINNOW SURVIVAL

Conc. %	Percent Survival in Replicate Chambers				Mean Percent Survival			CV %
	A	B	C	D	24hr	48hr	7 day	
Control 0%	100	100	100	100	100	100	100	0.0
Dilution 1 6.25%	100	100	90	100	100	100	97.5	5.94
Dilution 2 12.5%	100	90	100	100	100	100	97.5	5.94
Dilution 3 25%	100	90	100	100	100	100	97.5	5.94
Dilution 4 50%	100	90	100	100	100	100	97.5	5.94
Dilution 5 100%	100	100	100	100	100	100	100	0.0

Permittee: CITY OF PEVELY Effluent discharge.

CERIODAPHNIA SURVIVAL AND REPRODUCTION

DATA TABLE FOR CERIODAPHNIA YOUNG PRODUCTION

Replicate	Control 0%	Dilution 1 6.25%	Dilution 2 12.5%	Dilution 3 25%	Dilution 4 50%	Dilution 5 100%
1	20	24	23	26	26	18
2	20	17	27	17	31	24
3	22	23	22	23	25	19
4	28	25	22	26	26	27
5	14	24	18	22	21	26
6	25	23	24	26	24	23
7	22	19	27	28	17	26
8	25	23	24	16	25	24
9	24	26	23	22	27	26
10	19	20	26	19	24	27
Mean	21.9	22.4	23.6	22.5	24.6	24.0
SD	3.929	2.836	2.716	4.116	3.688	3.197
CV %	17.94	12.66	11.51	18.29	14.99	13.32

CERIODAPHNIA MEAN PERCENT SURVIVAL

	Percent Effluent (%)					
Time Elapsed	Control 0%	Dilution 1 6.25%	Dilution 2 12.5%	Dilution 3 25%	Dilution 4 50%	Dilution 5 100%
24 hrs	100	100	100	100	100	100
48 hrs	100	100	100	100	100	100
7-day	100	100	100	100	100	100
SD	0.000	0.000	0.000	0.000	0.000	0.000
CV %	0.00	0.00	0.00	0.00	0.00	0.00

TABLE 2

SUMMARY OF TEST CONDITIONS FOR THE FATHEAD MINNOW (Pimephales promelas) LARVAL SURVIVAL AND GROWTH TEST

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	500 ml
7. Test solution volume	250 ml
8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	10
11. No. replicates/concentration	4
12. No. larvae/concentration	40
13. Feeding regime	Feed 0.15 g newly hatched brine shrimp nauplii two times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None

TABLE 2 (CONT.)

16. Dilution Water	Moderately Hard Synthetic
17. Effluent concentrations	0%, 6.25%, 12.5%, 25%, 50%, 100%
18. Test duration	7 days
19. Endpoints	Survival and growth
20. Test acceptability	80% or greater survival in the controls, Average dry weight in controls >0.25 mg, Coefficient of variation in the control must not exceed 40%.

TABLE 2 (CONT.)
SUMMARY OF TEST CONDITIONS FOR THE CLADOCERAN (Ceriodaphnia dubia) SURVIVAL AND REPRODUCTION TEST

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	30 ml
7. Test solution volume	25 ml

TABLE 2 (CONT.)

8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	1
11. No. replicates/concentration	10
12. No. larvae/concentration	10
13. Feeding regime	Feed 0.1 ml YCT and 0.1 ml of Algae daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. Dilution Water	Moderately Hard Synthetic
17. Effluent concentrations	0%, 6.25%, 12.5%, 25%, 50%, 100%
18. Test duration	Until 60% or more surviving control females have three broods or a maximum of 8 days.
19. Endpoints	Survival and Reproduction
20. Test acceptability	80% or greater survival in the controls, Average reproduction rate of 15 young / adult. Coefficient of variation in the control must not exceed 40%.

TABLE 2 (SECTION 2)

BIOMONITORING CHRONIC TOXICITY REPORT
FATHEAD MINNOW (Pimephales promelas)
CHEMICAL PARAMETERS CHART

Permittee: CITY OF PEVELY Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.
Timothy Harrell
Mike Bollin
Ethan Castagno

TABLE 2 (SECTION 2)
INITIAL WATER QUALITY
EFFLUENT CONCENTRATION

	Control	100%
PH	7.56	7.82
D.O.	8.30	8.20
Temp	25.0	25.0
Alk	60	232
Hard	88	326
Cond	320	1063
Chlorine	<0.1	<0.1

* D.O. is reported as mg/L
Alkalinity is reported as mg/L CaCO3
Hardness is reported as mg/L CaCO3
Conductance is reported as umhos
Chlorine is reported as mg/L.

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.70	6.50	25.1
6.25% Effluent	7.74	6.50	25.1
12.5% Effluent	7.81	6.40	25.1
25% Effluent	7.96	6.40	25.1
50% Effluent	8.00	6.40	25.1
100% Effluent	8.03	6.40	25.1

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.68	7.10	24.9
6.25% Effluent	7.72	7.10	24.9
12.5% Effluent	7.78	7.10	24.9
25% Effluent	7.90	7.00	24.9
50% Effluent	7.96	6.90	24.9
100% Effluent	7.98	6.90	24.9

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.70	8.33
D.O.	7.10	6.90
Temp	24.8	24.8
Alk	58	226
Hard	94	332
Cond	367	1148

* D.O. is reported as mg/L
Alkalinity is reported as mg/L CaCO3
Hardness is reported as mg/L CaCO3
Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 100. The mean dry weight (growth) of the Pimephales promelas was determined at 0.479 g/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 0.00 and 6.35. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 21.9 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 17.94. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

REFERENCE TOXICANTS

The absence of significant control mortality during this test indicated the health of the organisms and indicated that any significant mortality in the test concentrations was not due to contaminants or variations in testing conditions.

Reference toxicity testing is routinely performed by staff members in our biomonitoring - bioassay laboratory.

Start: 2/11/20 14:30 End: 2/18/20 14:05

Reference Toxicant (NaCl) Pimephales promelas

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
10 g/l	40	9	3	0
8 g/l	40	34	22	3
6 g/l	40	40	35	23
4 g/l	40	40	40	40
2 g/l	40	40	40	39

IC25 (5.00 g/l Sodium Chloride)

Survival NOEC: 4.0 g/l

Reference Toxicant (NaCl) Ceriodaphnia Dubia

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
2.5 g/l	10	6	3	0
2.0 g/l	10	10	9	1
1.5 g/l	10	10	10	9
1.0 g/l	10	10	10	10
0.5 g/l	10	10	10	10

IC25 (1.18 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By: Tim Harrell

Timothy Harrell
Technical Director

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG# 2401423
June 12, 2019 through June 14, 2019

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

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REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG# 2401423
June 12, 2019 through June 14, 2019

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
TUa Result	<1.00	<1.00
Result of Toxicity Test	Monitor	Monitor

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

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 > 100% by the Graphical Method
NOAEC = 100% using Steel's Many-One Rank Test
TUa < 1.00

Ceriodaphnia dubia 48 hour WET results: LC 50 > 100% by the Graphical Method
NOAEC = 100% using Steel's Many-One Rank Test
TUa < 1.00

Approved by _____
Sara C. Shields, Chemist

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG# 2401423
June 12, 2019 through June 14, 2019

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

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

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

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from ARO (Aquatic Research Organisms) located in Hampton, New Hampshire and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Pevely Wastewater Treatment Plant
Outfall 002 (composite) AEC = 100%
MO-0040142
EAS LOG# 2401423
June 12, 2019 through June 14, 2019

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on June 5, 2019 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – LC_{50} = 1.147 g/l 95%CI (0.814 g/l -1.480 g/l)
EAS %CV = 14.5%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. ***C. dubia*** - 48 hr. Acute Test – LC_{50} = 0.394 g/l 95%CI (0.211 g/l - 0.576 g/l)
EAS %CV = 23.2%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

LITERATURE CITED:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR WHOLE EFFLUENT TOXICITY TESTS

RETURN FORM TO: Southeast Regional Office
2155 N. Westwood Blvd. Poplar Bluff, MO 63901

Facility Name	Pevely Wastewater Treatment Plant	Receiving Water	Tributary to Sandy Creek
Permit Number	MO-0040142	Laboratory Name	Environmental Analysis South, Inc.
Outfall	002	Laboratory Report #	MO_2401423

SAMPLE INFORMATION

Sample Number	Sample Collection				Sample Temperature (°C)		pH (SU)	Hand delivered? (If yes, ≤ 4 hrs?	Hold Time ≤ 36 hours?	Sample Acceptable
	Effluent or Upstream	Sample Type	Beginning Date	End Date	At Collection	At Lab	At Lab			
1	2401423Eff	composite	06/11/19	06/12/19		11	8.15	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
2	2401423A Upstr	grab	06/12/19			12	8.03	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
3								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
4								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N

Describe any unusual conditions during sampling that might influence test results

TEST INFORMATION - ACUTE

Test Method:	*C. dubia* 2002.0		*P. promelas* 2000.0	
Date Test Initiated:	06/12/2019			
AEC/IWC Info:	AEC = 100%			
Dilution Series	100%	50%	25%	12.5%
	6.25%			
Dilution Water:	*C. dubia*	RW ☒	LW ☐	
	P. promelas	RW ☒	LW ☐	
	RW = Receiving Stream Control		LW = Lab Water Control	

Comments:

QA/QC CONDITIONS - ACUTE

	YES	NO
Did test conditions meet all test acceptability criterion required by the specified method?	✓	
Temperatures maintained during test (20 ± 1°C)		✓
Temperatures maintained during test (25 ± 1°C)	✓	
Dissolved oxygen ≥ 4.0 mg/L throughout test?	✓	
Effluent pH maintained within 6.0 - 9.0 SU throughout test?	✓	
Concurrent or monthly reference tests within acceptable limits?	✓	
Were effluent samples modified prior to testing? (ex. filtration, aeration, chemical addition including de-chlorination or pH adjustment)		✓

Comments:

WATER CHEMISTRY (All values reported in mg/L, except for pH and conductivity)

Sample Type	Sample Number	Conductivity (µmhos)	Unionized Ammonia	Hardness	Alkalinity	pH (SU) After Warming	Total Residual Chlorine	Other	Other	Other
Upstream	2401423A	909	<0.010	344	271	8.35	<0.04	DO=8.4		
Effluent	2401423	939	<0.010	284	195	8.01	<0.04	DO=9.3		
Lab Water	RC4232	248	<0.010	68.0	58.0	8.22	<0.04	DO=8.6		

Comments:

TUa limit = Monitoring only.

Pimephales promelas Acute Results	LC50=	>100%	Confidence Interval % =	N/A	TUa=	<1.00
Ceriodaphnia dubia Acute Results	LC50=	>100%	Confidence Interval % =	N/A	TUa=	<1.00

Receiving Water Controls				Lab Water Controls			
Fathead Minnow		*Ceriodaphnia dubia*		Fathead Minnow		*Ceriodaphnia dubia*	
Survival ≥ 90%	☒ Y ☐ N	Survival ≥ 90%	☒ Y ☐ N	Survival ≥ 90%	☒ Y ☐ N	Survival ≥ 90%	☒ Y ☐ N

Comments:

SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.010	DATE	PHONE NUMBER
		573-204-8817

Version 1.0