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-0089109
Owner:	City of Nevada
Address:	110 S. Ash, Nevada, MO 64772
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Nevada Municipal WWTP
Facility Address:	16517 S. 1338 Road, Nevada, MO 64772
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

June 1, 2024
Effective Date

May 31, 2029
Expiration Date

John Hoke, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – See Special Condition #19.
The use or operation of this facility shall be by or under the supervision of a Certified B Operator.
Influent lift station / earthen flow equalization basin / grit chamber / bar screen / 2 aeration basins / 4 clarifiers / ultraviolet disinfection / 2 aerobic digesters / sludge holding tank / biosolids are land applied / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater.

Design population equivalent is 22,500.
Design flow is 2.0 MGD.
Actual flow is 1.78 MGD.
Design sludge production is 365 dry tons/year.

Legal Description:	Sec. 1, T35N, R32W, Vernon County
UTM Coordinates:	X=376757, Y=4189525
Receiving Stream:	Little Dry Wood Creek (P)
First Classified Stream and ID:	Little Dry Wood Creek (P) (1325) 303(d) List
USGS Basin & Sub-watershed No.:	(10290104-0406)

Permitted Feature INF – Influent Monitoring Location – Headworks

Legal Description:	Sec. 1, T35N, R32W, Vernon County
UTM Coordinates:	X=377376, Y=4189588

Permitted Feature SM2 – Instream Monitoring – Downstream – approximately 0.15 miles downstream of Outfall #001 – See Special Condition #17

Legal Description:	Sec. 1, T35N, R32W, Vernon County
UTM Coordinates:	X=376636, Y=4189652
Receiving Stream:	Little Dry Wood Creek (P)
First Classified Stream and ID:	Little Dry Wood Creek (P) (1325) 303(d) List
USGS Basin & Sub-watershed No.:	(10290104-0406)

OUTFALL #001	TABLE A-1. 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-1** shall become effective on **June 1, 2024** 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	
				MONTHLY TOTAL	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Total Flow	MG			*	once/month	calculated
EFFLUENT PARAMETER(S)	**UNITS**	**DAILY MAXIMUM**	**WEEKLY AVERAGE**	**MONTHLY AVERAGE**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Flow	MGD	*		*	once/day***	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		15	10	once/week	composite**
Total Suspended Solids	mg/L		15	10	once/week	composite**
E. coli (**Note 1**)	#/100mL		1,030	206	once/week	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	 5.8 11.8		 1.4 2.9	once/week	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/week	composite**
Nitrate + Nitrite	mg/L	*		*	once/week	composite**
Oil & Grease	mg/L	15		10	once/month	grab
Copper, Total Recoverable	µg/L	26.9		13.8	once/month	composite**
Sulfate	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**	**DAILY MINIMUM**		**MONTHLY AVERAGE MINIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Dissolved Oxygen	mg/L	5.5		5.5	once/month	grab
EFFLUENT PARAMETER(S)			**UNITS**	**MONTHLY AVERAGE MINIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Biochemical Oxygen Demand$_5$ – Percent Removal (**Note 2, Page 5**)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (**Note 2, Page 5**)			%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE JULY 28, 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.
*** Once each day includes Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday.
**** pH is measured in pH units and is not to be averaged.

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

OUTFALL #001	TABLE A-1 (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-1** shall become effective on **June 1, 2024** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: Q						
Aluminum, Total Recoverable	µg/L	*		*	once/quarter †	composite**
Boron, Total Recoverable	µg/L	*		*	once/quarter †	composite**
Cobalt, Total Recoverable	µg/L	*		*	once/quarter †	composite**
Fluoride	mg/L	*		*	once/quarter †	composite**
α-Terpineol	µg/L	*		*	once/quarter †	grab
ρ-Cresol	µg/L	*		*	once/quarter †	grab
Benzoic Acid	µg/L	*		*	once/quarter †	grab
Phenol	µg/L	*		*	once/quarter †	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter †	composite**

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE OCTOBER 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.

† See table below for quarterly sampling requirements.

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

OUTFALL #001	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 **June 1, 2024**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS			
		MONTHLY AVERAGE	MONTHLY TOTAL §	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M					
Total Phosphorus	mg/L	*		once/week	composite**
Total Phosphorus	lbs.		*	once/month	calculated
Total Nitrogen (**Note 3**)	mg/L	*		once/week	composite**
Total Nitrogen	lbs.		*	once/month	calculated

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

PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		ANNUAL AVERAGE ¥	ANNUAL TOTAL Φ	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: A					
Total Phosphorus	mg/L	*		once/year	calculated
Total Phosphorus	lbs.		29,284	once/year	calculated
Total Nitrogen (**Note 3**)	mg/L	*		once/year	calculated
Total Nitrogen	lbs.		154,061	once/year	calculated

MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**; THE FIRST REPORT IS DUE JUNE 28, 2025.

* Monitoring requirement only.

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

§ - The facility shall calculate pounds per month by using the monthly average concentration in mg/L multiplied by 8.34 and multiplied by the total monthly flow in MG.

¥ Annual Average is calculated as the average of the 12 calendar months (January 1st through December 31st) of weekly samples in mg/L.

Φ Annual Total is calculated as the sum of the 12 calendar months (January 1st through December 31st) of monthly totals in pounds (lbs.).

Note 2 – 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.

Note 3 – Total Nitrogen consists of Total Kjeldahl Nitrogen and Nitrate + Nitrite.

OUTFALL #001	TABLE A-3. 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-4** must be achieved as soon as possible but no later than **June 1, 2034**. These interim effluent limitations in **Table A-3** are effective beginning **June 1, 2024** and remain in effect through **May 31, 2034** or as soon as possible. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Chloride	mg/L	*		*	once/month	composite**
MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE JULY 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.

OUTFALL #001	TABLE A-4. 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-4** shall become effective on **June 1, 2034**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: M						
Chloride	mg/L	321		208	once/month	composite**
MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE July 28, 2034.						

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

OUTFALL #001	TABLE A-5. WHOLE EFFLUENT TOXICITY 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-5** shall become effective on **June 1, 2024** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: WA						
Acute Whole Effluent Toxicity (**Note 4**)	TU_a	*			once/year	composite**
ACUTE WET TEST MONITORING REPORTS SHALL BE SUBMITTED **ANNUALLY**. THE FIRST REPORT IS DUE SEPTEMBER 28, 2025.						
eDMR Limit Set: WC						
Chronic Whole Effluent Toxicity (**Note 5**)	TU_c	*			once/permit cycle	composite**
CHRONIC WET TEST REPORTS SHALL BE SUBMITTED **ONCE PER PERMIT CYCLE** THE FIRST REPORT IS DUE SEPTEMBER 28, 2026.						

* 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 4 – The Acute WET test shall be conducted during the years 2024, 2025, and 2027. See Special Condition #14 for additional requirements.

Note 5 – The Chronic WET test shall be conducted once per permit cycle during the year 2026. An Acute WET test is not required during the year of the Chronic test. See Special Condition #15 for additional requirements.

PERMITTED FEATURE INF	TABLE B-1. INFLUENT MONITORING REQUIREMENTS

The monitoring requirements in **Table B-1** shall become effective on **June 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	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: IM						
Biochemical Oxygen $Demand_5$ (**Note 2, Page 5**)	mg/L			*	once/month	composite**
Total Suspended Solids (**Note 2, Page 5**)	mg/L			*	once/month	composite**
Ammonia as N	mg/L			*	once/month	composite**
Total Phosphorus	mg/L			*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L			*	once/month	composite**
Nitrate + Nitrite	mg/L			*	once/month	composite**
MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE JULY 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.

PERMITTED FEATURE SM2 ‡	TABLE C-1. INSTREAM MONITORING REQUIREMENTS

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

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: DM						
Hardness, Total	mg/L	*		*	once/month	grab
Temperature	°C	*		*	twice/month ⁂	grab
pH	SU	*		*	twice/month ⁂	grab
MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE JULY 28, 2024.						

* Monitoring requirement only.
‡ See Special Condition #17 for additional requirements.
⁂ Samples are to be collected with a minimum of 7 days between sampling events.

D. SCHEDULE OF COMPLIANCE

Chloride
The facility shall attain compliance with the final effluent limitations in **Table A-4** as soon as reasonably achievable but no later than **10 years** from the effective date of this permit. The ten-year schedule of compliance will allow the facility to collect data, evaluate current facility and pretreatment operations, and mitigate potential costs associated with the new final effluent limits.

1. 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.

2. Within **10 years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits for Chloride.

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

E. 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. See Special Condition #20 for additional information regarding requirements in Standard Condition Part III.

The facility shall monitor biosolids twice per permit cycle for the Priority Pollutants listed in 40 CFR 122.21, Appendix D, Tables II and III. This supersedes the once per year requirement for Priority Pollutants listed in Table 5 of Standard Conditions Part III, Section J, No. 1.

F. 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. This does not include instream monitoring locations.

4. Report as no-discharge when a discharge does not occur during the report period. For instream samples, report as "C – No Discharge" if no stream flow occurs 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.
   (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 Southwest 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. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
   (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
      i. The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
      ii. The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
   (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
   (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (d) The laboratory shall not chemically dechlorinate the sample.
   (e) The Allowable Effluent Concentration (AEC) is 100%; the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
   (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.

(g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

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

15. Expanded Effluent Testing
    Permittee must sample and analyze for the pollutants listed in 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 (MO-780-1805 dated 10-20), Part D – Expanded Effluent Testing Data, #18. The permittee shall provide this data with the permit renewal application. A minimum of three samples taken within four and one-half years prior to the date of the permit application must be provided. Samples must be representative of the seasonal variation in the discharge from each outfall. Approved and sufficiently sensitive testing methods listed in 40 CFR 136.3 must be utilized. 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 measured pollutant or pollutant parameter; or 2) the method minimum level is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or 3) the method has the lowest minimum level of the analytical methods approved under 40 CFR part 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established.

16. Receiving Water Monitoring Conditions
    a) Downstream receiving water samples should be taken at the location specified on Page 2 of this permit. The downstream receiving water sample should be collected at a point downstream of the facility's effluent where the water is visibly flowing in the stream but upstream of where any other known discharges or tributaries enter the stream channel. In the event that a safe, accessible location is not present at the location listed, a suitable location can be negotiated with the Department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface if possible.
    b) When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) from where the sample was collected. These observations shall be submitted with the sample results.
    c) Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
        a. If turbidity in the stream increases notably; or
        b. If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hour.
    d) Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.

e) To obtain accurate measurements, pH analyses should be performed on-site in the receiving stream where possible. However, due to high flow conditions, access, etc., it may be necessary to collect a sample in a bucket or other container. When this is necessary, care must be taken not to aerate the sample upon collection. If for any reason samples must be collected from an alternate site from the one listed in the permit, the permittee shall report the location with the sample results.
f) Please contact the Department if you need additional instructions or assistance.

17. Pretreatment: The permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 10 CSR 20-6.100. The approved pretreatment program is hereby incorporated by reference.
    (a) The permittee shall submit to the Department via the Electronic Discharge Monitoring Report (eDMR) Submission System on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
        (1) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
        (2) A summary of the status of Industrial User compliance over the reporting period;
        (3) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
        (4) Any other relevant information requested by the Department.
    (b) The permittee shall continue to develop local limits as necessary and effectively enforce such limits, per 40 CFR 403.5(c)(1). The permittee shall submit to the Department a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1) by **December 1, 2024**, pursuant to 40 CFR 122.44(j)(2)(ii). All POTWs are required to use Form 780-2954, Part I, to complete the local limits review under 40 CFR 122.44(j)(2)(ii), and Part II of the form as needed for the detailed reevaluation of local limits. See instructions for both Parts I and II, respectively, for the review and reevaluation. Please contact the Department's pretreatment coordinator for further guidance. Should revision of local limits be deemed necessary, it is recommended that revisions follow the US Environmental Protection Agency's guidance document *Local Limits Development Guidance*. EPA833-R04-002A. July 2004.

18. Samples for Outfall #001 shall be collected prior to the location where treated effluent is combined with the discharge from the Nevada drinking water treatment plant.

19. Within 90 days of the effective date of this permit, the permittee shall update its process for evaluating new and/or expanded industrial users (and any other potential sources of concern to the POTW) to include an evaluation of PFAS loadings. Such evaluation should include PFAS data from similar facilities under common ownership as the proposed new/expanded industrial user as well as representative PFAS sampling of the new/expanded user's waste streams as soon as representative samples are available.

20. Within 12 months of the effective date of this permit, the permittee shall provide the Department for its review an initial evaluation of likely non-domestic sources of significant PFAS loadings to the sewer system, as well as the POTW's proposed approach to work with those sources to identify and implement feasible minimization strategies, if found. Both targeted (draft method 1633) and non-targeted (draft method 1621) PFAS sampling should be considered as appropriate. Unless the POTW is aware of information to the contrary, the evaluation should prioritize Significant Industrial Users, followed by Industrial Users and, finally, other non-domestic sources of potential concern. Submit initial evaluation and minimization strategy via the eDMR system as an attachment.

21. Beginning in the second year of the permit cycle, the permittee's annual pretreatment report shall include the latest list of potential significant PFAS sources and summary of actions taken to (1) characterize PFAS loadings from priority potential sources, (2) efforts to reduce or eliminate PFAS loadings from those sources, and (3) adjustments in approach based on the findings.
    (a) Both targeted (draft method 1633) and non-targeted (draft method 1621) PFAS sampling should be considered as appropriate.
    (b) PFAS data which is derived from unapproved methods and shared with DNR should be submitted to DNR via an uncertified attachment in the eDMR system.

G. 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 Sections 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-0089109
NEVADA MUNICIPAL WASTEWATER TREATMENT FACILITY

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

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

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

Part I – Facility Information

Application Date: 11/09/2015
Expiration Date: 05/12/2016

Facility Type and Description: POTW
Influent lift station / earthen flow equalization basin / grit chamber / bar screen / 2 aeration basins / 4 clarifiers / ultraviolet disinfection / 2 aerobic digesters / sludge holding tank / biosolids are land applied / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	3.1	Secondary	Domestic

Comments:

The permit writer has updated permitted feature locations in this permit. The previous permit did account for mixing in the receiving stream and the permit writer included mixing considerations in this permit where appropriate. The facility description was updated to accurately describe systems and operations. An alternative frequency for sampling biosolids Priority Pollutants has been approved, see Part E, Standard Conditions.

Changes to effluent sampling requirements (permitted feature **Outfall #001**):

- Total Flow reporting has been added to ensure mass loading of TP and TN are correctly calculated.
- BOD_5, TSS, Total Phosphorus, and Total Nitrogen limits have been recalculated. The permit writer developed performance-based limits for these parameters to be protective of the receiving stream. Sampling frequency for Total Phosphorus and Total Nitrogen will be weekly instead of monthly to representatively calculate the annual average limit and annual total limit. See Part II of the Factsheet for more information.
- Ammonia limits have been recalculated using DMR data, site specific instream data for pH and Temperature taken downstream of the facility, and instream data collected during a Water Quality Review study conducted by the Department. The calculated limits exceeded the previous permit limits. As the Marmaton River is achieving instream dissolved oxygen criteria, the existing ammonia limits have been kept as this loading allows for the water quality standard to be met.
- New – Effluent monitoring for Total Kjeldahl Nitrogen and Nitrate + Nitrite is included in this permit as it is required per 10 CSR 20-7.015(9)(D)8. However, the Department has required a once per week sampling frequency to match the frequency of Total Nitrogen. As the permit previously required Total Nitrogen monitoring which is calculated from Total Kjeldahl Nitrogen and Nitrate + Nitrite the only additional sampling cost will be due to the increased sampling frequency.

- Total Recoverable Copper limits have been recalculated and sampling frequency will go from twice per year to monthly.
- Chloride will have effluent limits after a 10 year schedule of compliance.
- New – Sulfate monitoring only is included with monthly sampling frequency to match the frequency of Chloride.
- New – This permit includes monitoring requirements for Total Recoverable Aluminum, Total Recoverable Boron, Total Recoverable Cobalt, Fluoride, α-Terpineol, ρ-Cresol, and Benzoic Acid with quarterly sampling frequency. These parameters have been included as the facility accepts landfill leachate. Data collected over the permit cycle will be reviewed at renewal to determine if a future effluent limitation is necessary to be protective water quality.
- Phenol will be monitoring only instead of limit. Phenol and Zinc will go from twice per year to quarterly. These parameters are included in the ELG for the landfill industry found at 40 CFR Part 445 and have been retained in the permit as the facility accepts landfill leachate. Data collected over the permit cycle will be reviewed at renewal to determine if a future effluent limitation is necessary to be protective water quality
- Acute WET testing requirements were changed from pass/fail to monitoring only for toxic units.
- NEW - This permit requires a Chronic WET testing be taken once per permit cycle with monitoring only for toxic units.
- This permit removes monitoring requirements for Total Recoverable Chromium III, Total Recoverable Iron, and Dissolved Chromium VI as the RPA determined no reasonable potential for these pollutants.

Changes to influent monitoring requirements (permitted feature **INF**):

- The addition of influent nutrient monitoring requirements for Ammonia as N, Total Phosphorous, Total Kjeldahl Nitrogen, and Nitrate + Nitrite with a monthly sampling frequency.

Changes to in stream sampling requirements:

- SM1 - Removal of all upstream sampling requirements; SM1 is no longer a permitted feature in this permit.
- SM2 - Removal of requirements for Flow, Ammonia as N, Dissolved Oxygen and Chlorophyll a.
- SM2 - Addition of in-stream hardness monitoring due to hardness dependent metals.

See Part VI of the Fact Sheet for further information regarding the addition and removal of effluent parameters.

Special conditions were updated to include:

New requirements:

- Special condition #1 - the requirement to submit compliance monitoring data electronically via the eDMR system;
- Special condition #5 - requirements for reporting non-detects;
- Special Condition #6 - failure to pay fees associated with this permit is a violation;
- Special Conditions #10, #11, #12, and #13 are new requirements related to facility maintenance;
- Special Condition #15 - requirements for conducting the Chronic WET test;
- Special Condition #16 - requirement for expanded effluent testing;
- Special Condition #19 - requirement for effluent sampling location;
- Special Condition #20, #21, #22 – voluntary PFAS evaluationprogram.

Updated conditions include: #2, #3, #4, #7, #8, #9, #14, #17, and #18

Removed requirements:

- to cease discharge and connect to a facility with an area-wide management plan due to the facility not currently being located within the jurisdiction of a higher continuing authority;
- for general criteria as a special condition as the permit writer evaluated each narrative statement in Part II – Effluent Limitations and Monitoring Requirements for reasonable potential to cause or contribute to an excursion of the criteria and established numeric effluent limitations where necessary;
- for changes in discharges of toxic substances (however, additional pollutant loading must be reviewed according to the antidegradation policy).

Part II – Effluent Limitations and Monitoring Requirements

OUTFALL #001 – MAIN FACILITY OUTFALL

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

OUTFALL #001 - RECEIVING STREAM INFORMATION

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Little Dry Wood Creek (303 (d) List)	P	1325	AHP-WWH, HHP, IRR, LWP, SCR, WBC-B	10290104-0406	Directly Discharges
Marmaton River	P	1308	AHP-WWH, HHP, IRR, LWP, SCR, WBC-B		3.13

*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
Little Dry Wood Creek (P)	0.1	0.1	1.0

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0.025	0.025	0.25	0.0025	0.0025	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 discharges to a 303(d) listed stream. Little Dry Wood Creek is listed on the 2020 Missouri 303(d) List for Dissolved Oxygen.
  - o It is unknown at this time if the facility is a source of the above listed pollutant(s) or considered to contribute to the impairment of Little Dry Wood Creek. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.
- ✓ This facility discharges to a stream with an EPA approved TMDL. This facility discharges within the watershed of the Marmaton River, which has a TMDL for Dissolved Oxygen approved in 2010.
  - o The TMDL was written to achieve instream Dissolved Oxygen levels in the Marmaton River that would meet the applicable water quality criterion. During fall of 2022 the Department conducted a reassessment of the stream impairment for Dissolved Oxygen and found that the stream is no longer impaired for Dissolved Oxygen. The Nevada WWTF is not causing or contributing to an impairment of the Marmaton River. No further pollutant reductions are necessary to achieve the goal of the TMDL and current pollutant loading from the Nevada WWTF should be maintained. This permit includes performance-based limits for Total Nitrogen, Total Phosphorous, BOD_5, and TSS to maintain the water quality standard of Dissolved Oxygen in the stream.
- ✓ 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			Monthly Total	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Flow	MGD	1, 7			*	***	1/month	monthly	M
PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit/ Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
BOD_5	mg/L	1, 7		15	10	28/20	1/week	weekly	C
TSS	mg/L	1, 7		15	10	28/20	1/week	weekly	C
Total Kjeldahl Nitrogen	mg/L	1, 7	*		*	***	1/week	weekly	C
Nitrate + Nitrite	mg/L	1, 7	*		*	***	1/week	weekly	C
Copper, Total Recoverable	µg/L	2, 3	26.9		13.8	16/13	1/month	monthly	C
Sulfate	mg/L	1, 3	*		*	***	1/month	monthly	C
Aluminum, Total Recoverable	µg/L	7	*		*	***	1/quarter	quarterly	C
Boron, Total Recoverable	µg/L	7	*		*	***	1/quarter	quarterly	C
Cobalt, Total Recoverable	µg/L	7	*		*	***	1/quarter	quarterly	C
Fluoride, Total Recoverable	µg/L	7	*		*	***	1/quarter	quarterly	C
α-Terpineol	µg/L	7	*		*	***	1/quarter	quarterly	G
ρ-Cresol	µg/L	7	*		*	***	1/quarter	quarterly	G
Benzoic Acid	µg/L	7	*		*	***	1/quarter	quarterly	G
Phenol	µg/L	7	*		*	184/71	1/quarter	quarterly	G
Zinc	µg/L	7	*		*	twice/year	1/quarter	quarterly	C

table continues on next page

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit/ Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
Chloride – Interim Limits	mg/L	7	*		*	*/*	1/month	monthly	C
Chloride – Final Limits	mg/L	2, 3	321		208	*/*	1/month	monthly	C
Acute Whole Effluent Toxicity	TUa	1, 9	*			Pass/ Fail	1/year	annually	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***	1/permit cycle	1/permit cycle	C

PARAMETER	Unit	Basis for Limits	Monthly Average		Monthly Total	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
Total Phosphorus	mg/L	7	*			*	1/week	weekly	C
Total Phosphorus	lbs.	7			*	***	1/week	weekly	M
Total Nitrogen	mg/L	7	*			*	1/week	weekly	C
Total Nitrogen	lbs.	7			*	***	1/week	weekly	M

PARAMETER	Unit	Basis for Limits	Annual Average		Annual Total	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
Total Phosphorus	mg/L	7	*			***	1/year	annually	M
Total Phosphorus	lbs.	7			29,284	***	1/year	annually	M
Total Nitrogen	mg/L	7	*			***	1/year	annually	M
Total Nitrogen	lbs.	7			154,061	***	1/year	annually	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 #001 – DERIVATION AND DISCUSSION OF LIMITS:

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

- **Total Flow**. Flow is required as a monthly total in order to calculate TP and TN loading as a monthly mass.

- **Biochemical Oxygen Demand (BOD_5).** The Department has the ability to require more stringent limitations than what is established in 10 CSR 20-7.015(8). 10 CSR 20-7.015(8)(A)3.D.(I) allows the Department to set the BOD_5 and TSS limits for existing facilities, based upon an analysis of past performance, rounded up to the next five milligrams per liter (5 mg/L) range. The permit writer conducted a review of data submitted by the facility for BOD_5 and calculated a monthly average limit using the 95th percentile of monthly average data, and then rounded up to the next 5 mg/L.

  The 95th percentile of monthly average data for BOD_5 from November 2018 to October 2023 was 10 mg/L, which is already equivalent to a 5 mg/L range, thus the Average Monthly Limit is 10 mg/L. Per the Department's 2009 Dissolved Oxygen Modeling and Biochemical Oxygen Demand Effluent Limit Development Administrative Guidance document, the BOD_5 Average Weekly Limit is calculated by multiplying the AML by 1.5. The AWL was calculated to be 15 mg/L.

  AML = 10 mg/L

  AWL = AML * 1.5 = 10 * 1.5 = 15 mg/L
  AWL = 15 mg/L

- **Total Suspended Solids (TSS).** The Department has the ability to require more stringent limitations than what is established in 10 CSR 20-7.015(8). 10 CSR 20-7.015(8)(A)3.D.(I) allows the Department to set the BOD_5 and TSS limits for existing facilities, based upon an analysis of past performance, rounded up to the next five milligrams per liter (5 mg/L) range. The permit writer conducted a review of data submitted by the facility for TSS and calculated a monthly average limit using the 95th percentile of monthly average data, and then rounded up to the next 5 mg/L.

The 95th percentile of monthly average data for TSS from November 2018 to October 2023 was 6 mg/L, which rounded up to the next 5 mg/L provided an Average Monthly Limit of 10 mg/L. Per the Department's 2009 Dissolved Oxygen Modeling and Biochemical Oxygen Demand Effluent Limit Development Administrative Guidance document, the TSS Average Weekly Limit is calculated by multiplying the AML by 1.5. The AWL was calculated to be 15 mg/L.

AML = 10 mg/L

AWL = AML * 1.5 = 6 * 1.5 = 9 mg/L
AWL = 15 mg/L

- ***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 = 5th root of (1)(4)(6)(10)(5) = 5th root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen**. Operating permit retains Daily Maximum of 5.8 mg/L and Monthly Average of 1.4 mg/L during April 1 – September 30 and Daily Maximum 11.8 mg/L and Monthly Average 2.9 mg/L during October 1 – March 31. The effluent limits of the previous permit were compared to the Department's current method for derivation of ammonia limits, see table below. The more stringent limits from either the old permit or the Department's current ammonia derivation method are established as the effluent limits in this permit to prevent prohibited backsliding. Additionally, the retained limits have been protective of the Marmaton River as it is no longer impaired for Dissolved Oxygen.

Month	MDL - Previous permit	MDL - Calculated	AML - Previous permit	AML - Calculated
January	11.8	28.0	2.9	5.6
February	11.8	28.0	2.9	5.6
March	11.8	28.0	2.9	5.6
April	5.8	23.3	1.4	2.6
May	5.8	23.3	1.4	2.6
June	5.8	23.3	1.4	2.6
July	5.8	23.3	1.4	2.6
August	5.8	23.3	1.4	2.6
September	5.8	23.3	1.4	2.6
October	11.8	28.0	2.9	5.6
November	11.8	28.0	2.9	5.6
December	11.8	28.0	2.9	5.6

Cells highlighted in green are Ammonia limits that are the most protective and do not increase loading on the receiving stream.

The Department's current method for derivation of ammonia:
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	12.6	7.2	5.2	28.0
February	12.6	7.2	5.2	28.0
March	12.6	7.2	5.2	28.0
April	25.4	7.4	2.4	23.3
May	25.4	7.4	2.4	23.3
June	25.4	7.4	2.4	23.3
July	25.4	7.4	2.4	23.3
August	25.4	7.4	2.4	23.3
September	25.4	7.4	2.4	23.3
October	12.6	7.2	5.2	28.0
November	12.6	7.2	5.2	28.0
December	12.6	7.2	5.2	28.0

*site specific downstream pH and temperature data were used. This facility is within the Central Irregular Plains Ecoregion.

January, February, March, October, November, & December
Chronic WLA:
C_e = ((3.1 + 0.25)5.2 – (0..25 * 0.01))/3.1 = 5.6 mg/L

Acute WLA:
C_e = ((3.1 + 0.0025)28.0 – (0.0025 * 0.01))/3.1 = 28.0 mg/L

Chronic WLA = AML = **5.6** mg/L
Acute WLA = MDL = **28.0** mg/L

April, May, June, July, August, & September
Chronic WLA:
C_e = ((3.1 + 0.25)2.4 – (0.25 * 0.01))/3.1 = 2.6 mg/L

Acute WLA:
C_e = ((3.1 + 0.0025)23.3 – (0.0025 * 0.01))/3.1 = 23.3 mg/L

Chronic WLA = AML = **2.6** mg/L
Acute WLA = MDL = **23.3** mg/L

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

- **Total Kjeldahl Nitrogen & Nitrate + Nitrite**. Effluent monitoring for Total Kjeldahl Nitrogen and Nitrate + Nitrite are required per 10 CSR 20-7.015(9)(D)8.

- **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.

- **Dissolved Oxygen**. Operating permit retains 5.5 mg/L as a Daily Minimum and Monthly Average Minimum. As the goal of the Marmaton River TMDL has been meet it has been determined the retained effluent limit is protective of water quality in the Marmaton River. Additionally, this facility discharges to Little Dry Wood Creek, which is on the 303(d) list for dissolved oxygen. As the Little Dry Wood Creek is impaired for dissolved oxygen, reasonable potential to cause or contribute to an excursion of either the general or specific criteria may exist.

- **Fluoride**. Monitoring only requirements have been included in this permit. This parameter is new to the permit and has been added based on the permit writer's best professional judgment as Fluoride is a pollutant of concern in landfill leachate.

- **α-Terpineol**. Monitoring only requirements have been included in this permit. This parameter is new to this permit and has been added using the permit writer's best professional judgment. It is found in the ELG for the landfill industry found at 40 CFR Part 445. It is a common component of leachate.

- **ρ-Cresol**. Monitoring only requirements have been included in this permit. This parameter is new to this permit and has been added using the permit writer's best professional judgment. It is found in the ELG for the landfill industry found at 40 CFR Part 445. It is a common component of leachate.

- **Benzoic Acid**. Monitoring only requirements have been included in this permit. This parameter is new to this permit and has been added using the permit writer's best professional judgment. It is found in the ELG for the landfill industry found at 40 CFR Part 445. It is a common component of leachate.

- **Phenol**. Monitoring only requirements have been included in this permit. This facility accepts landfill leachate and Phenol is a parameter included in the ELG for the landfill industry found at 40 CFR Part 445. It is the permit writer's best professional judgement to include monitoring requirements in this permit to collect data over the permit cycle. Data will be reviewed at renewal to reassess this determination.

- **Total Phosphorus**. Operating permit establishes 29,284 lbs. as an Annual Total Limit (ATL) and establishes Annual Average, Monthly Average, and Monthly Total monitoring only requirements. The permit writer conducted a review of data submitted by the facility for Total Phosphorus and determined that the 95th percentile of monthly average data for Total Phosphorus from November 2018 to October 2023 was 4.81 mg/L. The permit writer then converted the concentration to an annual mass limit. (4.81 mg/L x 8.34 x 2.0 MGD x 365 days = 29,284 lbs. The permit writer determined that the facility is capable of meeting 29,284 lbs. as an Annual Total Limit (ATL). The permit writer established this limit using best professional judgment.

- **Total Nitrogen**. Operating permit establishes 154,061 lbs. as an Annual Total Limit (ATL) and establishes Annual Average, Monthly Average, and Monthly Total monitoring only requirements. The permit writer conducted a review of data submitted by the facility for Total Nitrogen and determined that the 95th percentile of monthly average data for Total Nitrogen from November 2018 to October 2023 was 25.31 mg/L. The permit writer then converted the concentration to an annual mass limit. (25.3 mg/L x 8.34 x 2.0 MGD x 365 days = 154,061 lbs. The permit writer determined that the facility is capable of meeting 154,061 lbs. as an ATL. The permit writer established this limit using best professional judgment.

- **Chloride**. Protection of Aquatic Life. Acute AQL: 860 mg/L and Chronic AQL: 230 mg/L.

  Acute WLA: Ce = ((3.094 + 0.003) * 860 – (0.003 * 0)) / 3.094 = 860.834
  Chronic WLA: Ce = ((3.094 + 0.025) * 230 – (0.025 * 0)) / 3.094 = 231.858

  LTAa: = 860.834 * 0.501 = 431.262 [CV: 0.327, 99th Percentile]
  LTAc: = 231.858 * 0.694 = 160.963 [CV: 0.327, 99th Percentile]
  use most protective LTA: 160.963

  Daily Maximum: MDL = 160.963 * 1.996 = 319.8 = **321 mg/L** [CV: 0.321, 99th Percentile]
  Monthly Average: AML = 160.963 * 1.289 = 207.6 = **208 mg/L** [CV: 0.321, 95th Percentile, n=4]

- **Sulfate**. Chloride is a known pollutant in the effluent; however, Sulfate has never been tested for. Sampling is required to determine if this facility has reasonable potential to violate the water quality standard for Chloride + Sulfate [10 CSR 20-7.031(5)(L)]. Monitoring only requirements have been included in this permit. Data collected over the permit cycle will be reviewed at renewal to determine if a future effluent limitation is necessary to protect water quality.

- **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.

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. Ecoregion water hardness for Central Irregular Plains of 200 mg/L is used in the calculation below. This value represents the 50th percentile (median) for all watersheds in-stream hardness values through the Ecoregion.

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
Copper	0.960	0.960

Conversion factors for Cu is hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 200 mg/L.

✓ **Copper, Total Recoverable**. Protection of Aquatic Life Acute Criteria = 25.8 µg/L, Chronic Criteria = 16.2 µg/L. The hardness value of **200 mg/L** represents the 50th percentile (median) for Level III Ecoregional Hardness for Central Irregular Plains. (Little Dry Wood Creek)

Acute AQL WQS: $e^{(1.0166 * \ln 200 - 3.062490)} * (1.136672 - \ln 200 * 0.041838) = 25.815$ [at Hardness 200]
Chronic AQL WQS: $e^{(0.7977 * \ln 200 - 3.909)} * (1.101672 - \ln 200 * 0.041838) = 16.193$ [at Hardness 200]

Acute WQS: 25.815 ÷ 0.96 = 26.891 µg/L [Total Recoverable Conversion]
Chronic WQS: 16.193 ÷ 0.96 =16.868 µg/L [Total Recoverable Conversion]

Set WQS to WLA (when no mixing considerations) see mixing below:

Acute WLA: $C_e = ((3.094 + 0.003)*26.891 - (0.003 * 0.0)) \div 3.094 = 26.917$ µg/L
Chronic WLA: $C_e = ((3.094 + 0.025)*16.868 - (0.025 * 0.0)) \div 3.094 = 17.004$ µg/L

LTA_a: 26.917 (0.336) = 9.052 µg/L [CV = 0.568, 99th Percentile]
LTA_c: 17.004 (0.544) = 9.251 µg/L [CV = 0.568, 99th Percentile]

Use most protective number of LTA_a or LTA_c.

MDL: 9.052 (2.974) = **26.9** µg/L [CV = 0.568, 99th Percentile]
AML: 9.052 (1.521) = **13.8** µg/L [CV = 0.568, 95th Percentile, n = 4]

- **Aluminum, Total Recoverable**. The permit renewal application listed an industrial contributor which uses Aluminum in their production process. The facility had not been required to do testing for Aluminum in the past. Using the permit writer's best professional judgment, reasonable potential to cause or contribute to an excursion of either the general or specific criteria may exist. In order to determine if a future effluent limitation is necessary to protect water quality, this permit includes monitoring requirements to collect data over the permit cycle. Data will be reviewed at renewal to assess if reasonable potential exists.

- **Boron, Total Recoverable**. Monitoring only requirements have been included in this permit. This parameter is new to the permit and has been added based on the permit writer's best professional judgment as Boron is a pollutant of concern in landfill leachate.

- **Cobalt, Total Recoverable**. Monitoring only requirements have been included in this permit. This parameter is new to the permit and has been added based on the permit writer's best professional judgment as Cobalt is a pollutant of concern in landfill leachate

- **Zinc, Total Recoverable**. Monitoring only requirements have been included in this permit. This facility accepts landfill leachate and Phenol is a parameter included in the ELG for the landfill industry found at 40 CFR Part 445. It is the permit writer's best professional judgement to include monitoring requirements in this permit to collect data over the permit cycle. Data will be reviewed at renewal to reassess this determination.

Whole Effluent Toxicity

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

  ✓ Acute Allowable Effluent Concentrations (AECs) for facilities that discharge to Class P 100%, 50%, 25%, 12.5%, & 6.25%.

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

  ✓ Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Class P are 100%, 50%, 25%, 12.5%, & 6.25%.

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 changes to the following parameters. Copper will go from twice per year to monthly, and Zinc and Phenol will go from twice per year to quarterly. Sulfate will be monthly to match the frequency of Chloride. The Total Phosphorous and Total Nitrogen parameters must now be sampled once per week in order to representatively calculate the annual average limit and annual total limit. Sampling for Total Kjeldahl Nitrogen and Total Kjeldahl Nitrogen must be once per week to match the frequency of Total Nitrogen. This increased sampling frequency will provide adequate data to the Department to determine if the facility is meeting the permit limits. Sampling frequency for new parameters Total Recoverable Aluminum, Total Recoverable Boron, Total Recoverable Cobalt, Fluoride, α-Terpineol, ρ-Cresol, and Benzoic Acid have been established at quarterly sampling frequency to provide adequate data to the Department to determine if the facility has reasonable potential to cause an excursion of water quality standards. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)7.A.

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

Acute Whole Effluent Toxicity

- ✓ No less than **ONCE/YEAR**:
  - Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
  - Facility incorporates a pretreatment program.
  - Facility has Water Quality-based effluent limitations for toxic substances (other than NH_3).

Chronic Whole Effluent Toxicity

- ✓ No less than **ONCE/PERMIT CYCLE**:
  - POTW facilities with a design flow of greater than 1.0 million gallons per day, but less than 10 million gallons per day, shall conduct and submit to the Department a chronic WET test no less than once per five years.

Sampling Type Justification: As per 10 CSR 20-7.015, samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, *E. coli*, Oil & Grease, Dissolved Oxygen, α-Terpineol, ρ-Cresol, Benzoic Acid, and Phenol 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	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
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
Nitrate + Nitrite	mg/L	1	*		*	***	1/month	monthly	C

* - Monitoring requirement only.
*** - Parameter not previously established in previous state operating permit.
**** - C = Composite
G = Grab

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review
5. Antidegradation Policy
6. Water Quality Model
7. Best Professional Judgment
8. TMDL or Permit in lieu of TMDL
9. WET Test Policy
10. Multiple Discharger Variance
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, Nitrate + Nitrite, and Ammonia. Influent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate + Nitrite, 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, Nitrate + Nitrite, and Ammonia parameters were per 10 CSR 20-7.015(9)(D)8. The sampling and reporting frequencies for influent BOD and TSS have been established to match the required reporting frequency of these parameters in the effluent for percent removal.

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.

PERMITTED FEATURE SM2 – INSTREAM MONITORING (DOWNSTREAM)

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

CHANGES TO INSTREAM MONITORING TABLE:

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

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

Basis for Limitations Codes:

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

PERMITTED FEATURE SM2 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

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

- **Temperature and pH**. Monitoring requirement only. This data will be used during the next permit renewal to calculate Ammonia limits, as Ammonia toxicity is Temperature and pH dependent.

Sampling Frequency Justification: The sampling and reporting frequency for Total Hardness has been established to match the required sampling frequency of the metals parameters in the effluent as their toxicity is hardness dependent. The sampling and reporting frequency for pH and Temperature has been established at twice per month to provide sufficient data to the department upon renewal for consideration of site specific conditions for Ammonia toxicity.

Sampling Type Justification: For the purposes of instream data collection, and as the downstream water quality should be consistent over a 24 hour period, grab samples are sufficient. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

OUTFALL #001 – GENERAL CRITERIA CONSIDERATIONS:

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

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on August 10, 2018, no evidence of an excursion of this criterion has been observed by the department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with the 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, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

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

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

✓ 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.

- **Total Recoverable Chromium III, Iron, and Dissolved Chromium VI**. As a result of a Reasonable Potential Analysis, it was determined that there is no reasonable potential to cause an excursion of water quality standards for Total Recoverable Chromium III, Iron, or Dissolved Chromium VI in the receiving stream. Therefore monitoring requirements have been removed. This determination will be reassessed at renewal. Please see **Appendix – RPA Results** for more information. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (new DMR data and new instream hardness 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.

- **Total Recoverable Copper**. Effluent limitations for copper were calculated utilizing effluent data submitted by the facility and the 50th percentile of the ecoregion hardness data (200 mg/L hardness) per the recently EPA approved water quality standard for hardness. Previous limitations were calculated utilizing the default state-wide value of 162 mg/L hardness. As a result the daily maximum limitation as well as the monthly average limitation for copper has become less stringent but is still protective of water quality. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (new DMR data and new instream hardness data). This new information justifies the application of a less stringent effluent limitation at the time of permit issuance. Also, the revision of the effluent limit also meets the requirements of the safety clause, as the revision of the effluent limit will not result in a violation of a water quality standard.

- **Phenol**. A Reasonable Potential Analysis (RPA) was conducted for Phenol using new DMR data. As a result of the RPA, it was determined there is no reasonable potential to cause an excursion of the water quality standard for Phenol in the receiving stream. Therefore final effluent limits for Phenol have been removed and monitoring only is required to collect data over the permit cycle so this determination can be reassessed during the next renewal. Please see **Appendix – RPA Results** for more information. 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 application of a less stringent effluent limitation at the time of permit issuance. Also, the revision of the effluent limit also meets the requirements of the safety clause, as the revision of the effluent limit will not result in a violation of a water quality standard.

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

- **Instream Monitoring (SM1 and SM2)**. Upstream monitoring at SM1 for flow, temperature, ammonia as N, dissolved oxygen, pH and chlorophyll-α have been removed. Downstream monitoring at SM2 for flow, ammonia as N, dissolved oxygen, and chlorophyll-α have been removed. This permit included in stream monitoring in the past because of the Marmaton River TMDL. As the Marmaton River has re-attained uses and is no longer impaired the Department has made a determination that monitoring of stream conditions for these parameters is no longer needed. The Department does not believe the additional instream data is needed at this time. This new information justifies the removal of the monitoring requirements at the time of permit issuance. 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.

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.

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 January 1, 2034 for industrial facilities unless an alternative implementation date is requested 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.

ANTIDEGRADATION:

✓ 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. Upgrades were previously completed in 2010-2011. Although upgrades were complete which resulted in an increase in design flow, construction was proposed and approved prior to the adoption of the Missouri Antidegradation Implementation Procedure. Therefore, antidegredation review was not required.

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(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.

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 10, 2018. The inspection showed an unsatisfactory finding with a failure to comply with laboratory procedure required by Standard Conditions Part I.

CONTINUING AUTHORITY:
Each application for an operating permit shall identify the person, as that term is defined in section 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. The continuing authority is a Level 3 Authority. There is no approved Clean Water Act Section 208 plan in Vernon 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 discharges into a lake watershed for Harry S. Truman Lake where numeric lake nutrient criteria are applicable, per 10 CSR 20-7.031(5)(N), and has a design flow greater than 0.1 MGD. Should the lake within this watershed be identified as impaired due to nutrient loading, the Department will conduct watershed modeling to determine if this facility has reasonable potential to cause or contribute to the impairment. Consequently, effluent limitations may be established at a later date based on the modeling results. For more information, please see the Department's Nutrient Criteria Implementation Plan at: https://dnr.mo.gov/document-search/nutrient-criteria-implementation-plan-july-27-2018. See **Part VI. Effluent Limits Determination**, below for more information.

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: Mark Mendenhall
Certification Number: 6217
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.
  - o The facility is a mechanical plant and is required to conduct operational control monitoring as follows:

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

PFAS VOLUNTARY SAMPLING:

The department is implementing voluntary sampling of per-and polyfluoroalkyl substances, or more commonly known as PFAS. PFAS are a group of compounds common in industrial processes which degrade slowly in the environment and have suspected health effects such as cancer, decreased immune response, hepatotoxicity, and low infant birth weight. Domestic POTWs may receive wastewater from industries which utilize PFAS. Future regulatory approaches may include 1) EPA requiring additional testing for facilities within industry groups having the highest likelihood of discharging PFAS; 2) EPA promulgation of Effluent Limitation Guidelines for these facilities; and 3) EPA designation of PFAS as CERCLA hazardous substances prior to 2024, per their PFAS Strategic Roadmap. Removal technologies for PFAS remain both traditionally expensive and resource-intensive. As such, understanding this facility's effluent concentrations will inform process improvements. The department recommends sampling using CWA Test Method 1633, found here: https://www.epa.gov/system/files/documents/2022-07/2nd%20Draft%20of%20Method%201633%20June%202022%20508-compliant.pdf

- ✓ This facility receives wastewater from a metal finisher. PFAS are primarily used as wetting agents, mist and fume suppressants, agents to reduce mechanical wear, or surface coatings to reduce corrosion. PFAS are especially prevalent in chromium electroplating facilities. It is advisable to test this facility's influent, effluent, and biosolids for all 40 analytes described in CWA Test Method 1633. Anticipated detected analytes include PFBS, PFHxS, PFOS, 4:2 FTSA, 6:2 FTSA, 8:2 FTSA, PFBA, PFPeA, PFHxA, PFHpA, and PFOA. Sample results may be submitted as an attachment in the eDMR system.

- ✓ This facility receives wastewater from a manufacturer of pulp, paper, or paperboard. PFAS are primarily used as nonstick, moisture-resistant coatings by facilities that manufacture food contact papers and packaging. It is advisable to test this facility's influent, effluent, and biosolids for all 40 analytes described in CWA Test Method 1633. Anticipated detected analytes include PFBS, PFOS, 6:2 FTSA, PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnDA, PFDoDA, PFTrDA, and PFTeDA. Sample results may be submitted as an attachment in the eDMR system.

- ✓ This facility receives wastewater from an industrial facility that manufactures organic chemicals, plastics, synthetic fibers or resin products, including those that manufacture PFAS or process PFAS in production of such products. Because these facilities use a variety of proprietary blends of PFAS and EPA has not conducted a study on PFAS in this industry, it is advisable to test this facility's influent, effluent, and biosolids for all 40 analytes described in CWA Test Method 1633. Sample results may be submitted as an attachment in the eDMR system.

- ✓ This facility receives leachate from a landfill. While landfills do not directly produce PFAS, garbage treated with PFAS ranging from food wrappers, to clothing, and more, are all received by landfills. When stormwater percolates through PFAS-impacted garbage, this collects and concentrates into leachate, a high strength waste. As landfills are the catch-all for a variety of PFAS products, it is advisable to test this facility's influent, effluent, and biosolids for all 40 analytes described in CWA Test Method 1633. Sample results may be submitted as an attachment in the eDMR system.

- ✓ This facility has joined the PFAS voluntary sampling program to characterize PFAS loading from industrial users. The permit contains special conditions as developed by the department's Per- and Polyfluoroalkyl Substances (PFAS) Workgroup, Permitting and Pretreatment Subgroup which consists of department staff, regulated entities, and members of the public. The conditions require the permittee to evaluate the PFAS contributions of new and expanded industrial users, to provide to the department an initial evaluation of likely non-domestic PFAS sources, the POTW's approach to minimization of PFAS from the identified sources, and to provide an update on the PFAS characterization and minimization in annual pretreatment reports. The special conditions allow both targeted (draft method 1633) and non-targeted (draft method 1621) PFAS sampling. Sampling frequency shall be determined by the facility. All sampling results should be submitted via the Electronic Discharge Monitoring Report (eDMR) Submission System.

PRETREATMENT PROGRAM:

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

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

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

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

- ✓ This permittee has an approved pretreatment program in accordance with the requirements of [40 CFR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved program.

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 Chloride, Copper, Iron, Chromium VI, and Chromium III. Please see **APPENDIX – RPA RESULTS.**

- ✓ A RPD was made for Ammonia, Oil & Grease, Phenol, Zinc, and Dissolved Oxygen, that a potential to violate water quality standards exists. Please see Derivation and Discussion of Limits.

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.

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

- ✓ At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at 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 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit 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 Chloride.

    - The facility has been granted ten (10) years to meet effluent limitations for Chloride at Outfall #001, due to the difficulty of treating chloride in wastewater, the findings of the attached CAFCom, and this community is identified as a Justice 40 (CEJEST) disadvantaged community and EPA IRA disadvantaged community per the attached EPA EJscreen report. Additionally, this facility is subject to total phosphorus target reduction levels in 10 CSR 20-7.015(9)(B)2. which shall be implemented January 1, 2033 for this facility unless the facility receives department approval for an alternative implementation date. This timeline coincides with the schedule of compliance for Chloride, so multiple treatment technologies may need to be observed concurrently. The ten (10) year schedule of compliance will allow the facility to collect data, evaluate current facility and pretreatment operations, and mitigate potential costs associated with the new final effluent limits. All changes will require varying degrees of operational control, study, or infrastructure changes. The department is providing the following options for the facility to meet the onus of as soon as practicable while keeping all options open for future compliance. These include, but are not limited to:
        - Identifying sources of chlorides discharging to the Nevada WWTF and eliminate or regulate through the pretreatment program or other potential chloride treatment technologies.
        - Installation of Chloride removal technology.

The following suggested milestones can be used by the permittee as a timeline toward compliance with new permit requirements. Once the permit holder's engineer has completed facility design with actual costs associated with permit compliance, it may be necessary for the permit holder to request additional time within the schedule of compliance. The Department is committed to review all requests for additional time in the schedule of compliance where adequate justification is provided.

Suggested Milestones during the 10 Year Schedule of Compliance

Year	Milestone(s)
1 – 3	Develop budgeting and acquire consultant services as needed to outline and develop a chloride evaluation plan for the discharge.
4 – 6	Evaluate potential mechanisms for chloride reduction.
7 - 10	Develop budget, provide chloride reduction plan, and select method(s) to reduce chloride discharge from Outfall #001.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:

✓ 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.

✓ The City of Nevada submitted to the Department a No Exposure Certification for Exclusion from NPDES Stormwater Permitting on August 19, 2022. As a result of the submittal of the certification, the permittee is not required to develop and implement a SWPPP at this time. This exclusion will be reevaluated at the time of renewal or during a department inspection.

VARIANCE:

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(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:

✓ 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 MCWL apply: §§§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

☒ Facility is a designated Major.
☒ Facility continuously or routinely exceeds its design flow.

☐ Facility that exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☒ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☒ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

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

40 CFR 122.41(M) - BYPASSES:

✓ This facility does not anticipate bypassing.

Part IV – Cost Analysis for Compliance

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

✓ The Department is required to determine "findings of affordability" because the permit applies to a combined or separate sanitary sewer system for a 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 Section 644. 145.3.

The following table summarizes the results of the cost analysis. See **Appendix – Cost Analysis for Compliance** for detailed information.

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

Annual Median Household Income (MHI)	Estimated Monthly User Rate	Residential Indicator (User Rate as a Percent of MHI)	Financial Capability Indicator	Financial Burden	Schedule of Compliance Length
$45,497	$76.68	2.02%	1.4	High Burden	10 years
Pollution Control Option Selected for Analysis: MBR and blower system					
Estimated Present Worth: $19,277,726					

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 section 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 (Phenol, Copper, and Zinc) for 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 March 15, 2024 through April 15, 2024. No response received.

DATE OF FACT SHEET: DECEMBER 22, 2023

COMPLETED BY:

ASHLEY KNEEMUELLER, ENVIRONMENTAL ANALYST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(573) 526-1503
Ashley.Kneemueller@dnr.mo.gov

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	
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	6
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow	3	3
Flow equalization	5	3
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)**	----	37

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)**	---	37
Grand Total	---	65

☐ - 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
Chloride (mg/L)	860.00	337.17	230.00	334.79	60	255/69	0.33	1.32	YES
Copper, Total Recoverable (µg/L)	26.89	28.63	16.87	28.42	10	10/1.9	0.57	2.87	YES
Iron, TR	n/a	115.52	1000.00	114.69	10	61.5/23.2	0.35	1.88	NO
Chromium VI, Diss.	16.00	9.50	11.00	9.44	10	5/1.15	0.77	1.90	NO
Chromium(III), Total Recoverable	3181.12	135.79	152.06	134.83	10	49/5	1.48	2.77	NO

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

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

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).

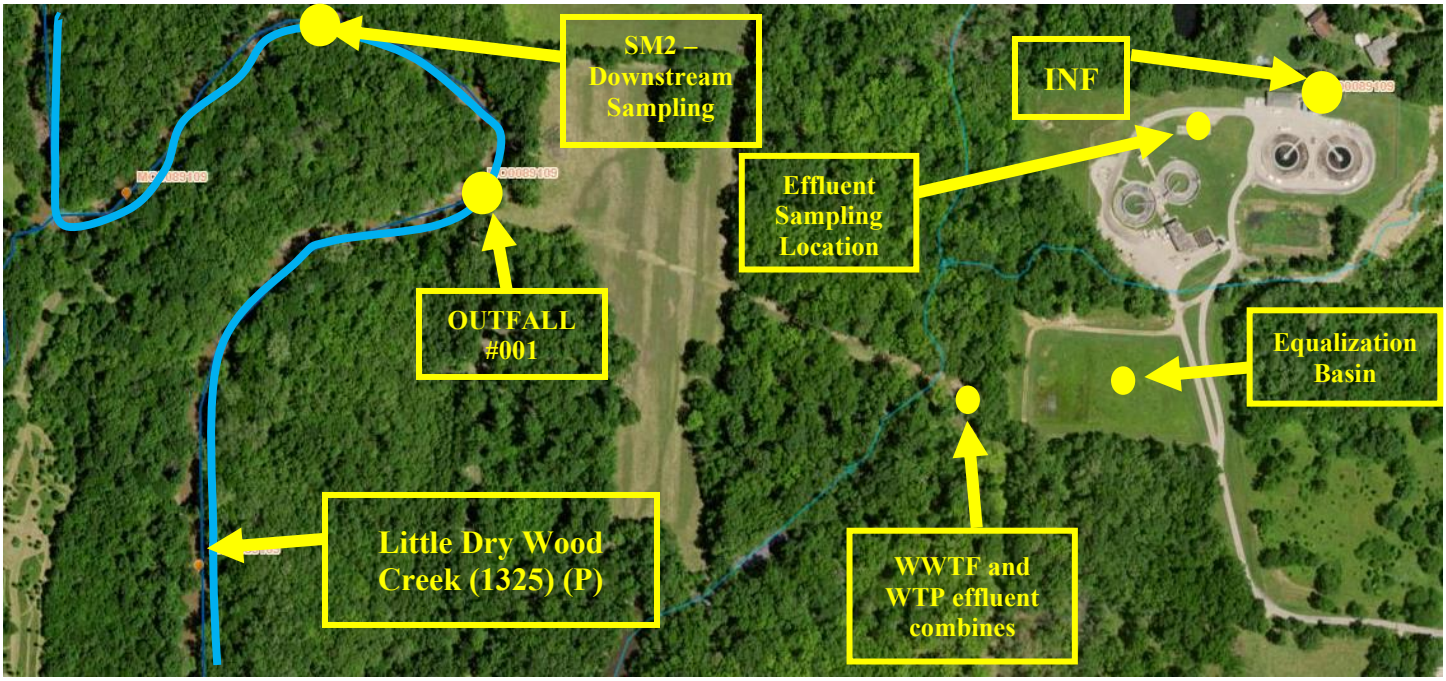
Week 1 = 102 #/100mL
Week 2 (Monday) = 400 #/100mL
Week 2 (Friday) = Non-Detect or <1 #/100mL
Week 3 = 15 #/100mL
Week 4 = Non-Detect or <1 #/100mL

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 – ALTERNATIVE:



APPENDIX – EJSCREEN REPORT:

EPA

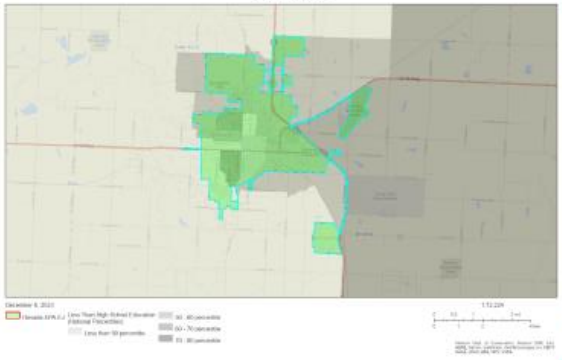
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Nevada, MO

City: Nevada
Population: 8,391
Area in square miles: 9.06

A3 Landscape

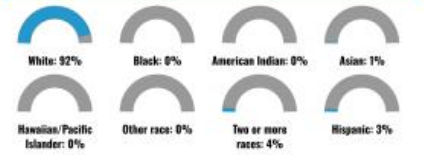


LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	98%
Spanish	1%
Total Non-English	2%

COMMUNITY INFORMATION

BREAKDOWN BY RACE



BREAKDOWN BY AGE

LIMITED ENGLISH SPEAKING BREAKDOWN

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 - 2021. Life expectancy data comes from the Centers for Disease Control.

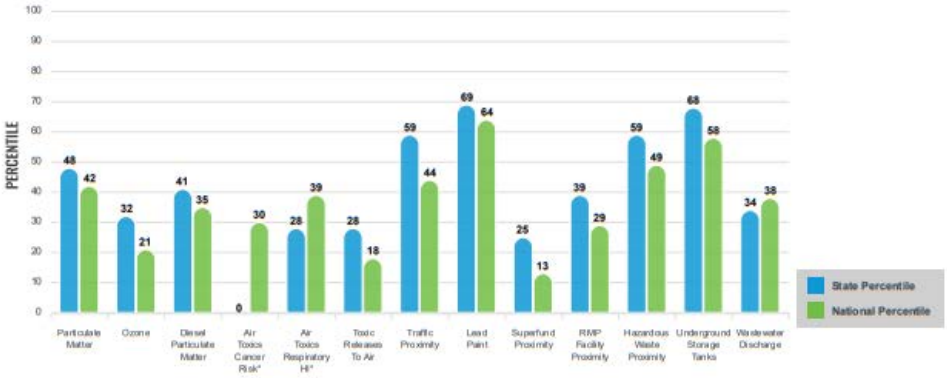
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

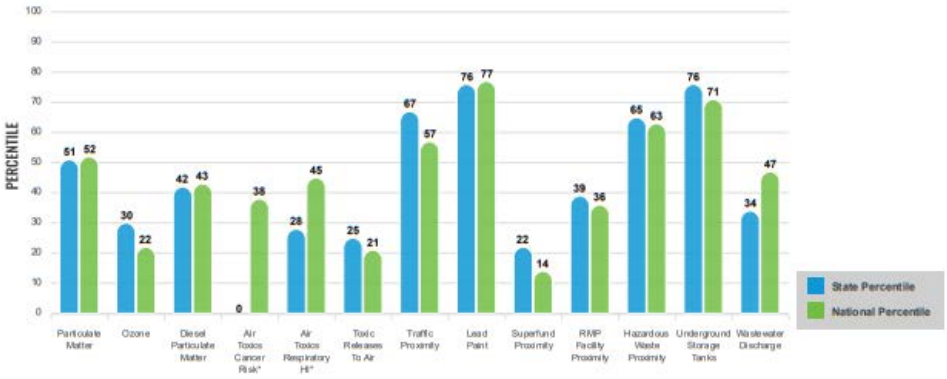
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for City: Nevada

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter ($\mu g/m^3$)	7.64	8.05	33	8.08	36
Ozone (ppb)	56.4	59.9	21	61.6	15
Diesel Particulate Matter ($\mu g/m^3$)	0.134	0.268	28	0.261	27
Air Toxics Cancer Risk* (lifetime risk per million)	20	25	0	25	5
Air Toxics Respiratory HI*	0.26	0.31	0	0.31	4
Toxic Releases to Air	30	4,500	17	4,600	14
Traffic Proximity (daily traffic count/distance to road)	58	110	53	210	43
Lead Paint (% Pre-1960 Housing)	0.45	0.31	71	0.3	70
Superfund Proximity (site count/km distance)	0.015	0.097	16	0.13	10
RMP Facility Proximity (facility count/km distance)	0.081	0.45	24	0.43	22
Hazardous Waste Proximity (facility count/km distance)	0.42	1.3	46	1.9	47
Underground Storage Tanks (count/km^2)	2.6	2	74	3.9	64
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00069	0.49	35	22	45
SOCIOECONOMIC INDICATORS					
Demographic Index	26%	28%	56	35%	44
Supplemental Demographic Index	16%	14%	66	14%	66
People of Color	8%	23%	34	39%	18
Low Income	45%	33%	72	31%	75
Unemployment Rate	4%	5%	60	6%	52
Limited English Speaking Households	0%	1%	79	5%	57
Less Than High School Education	10%	10%	60	12%	57
Under Age 5	5%	6%	46	6%	50
Over Age 64	21%	18%	68	17%	70
Low Life Expectancy	23%	21%	67	20%	78

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	1
Water Dischargers	32
Air Pollution	11
Brownfields	0
Toxic Release Inventory	3

Other community features within defined area:

Schools	8
Hospitals	2
Places of Worship	6

Other environmental data:

Air Non-attainment	No
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for City: Nevada

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	23%	21%	67	20%	78
Heart Disease	8.8	6.9	83	6.1	91
Asthma	10	9.9	58	10	52
Cancer	7.9	6.6	83	6.1	86
Persons with Disabilities	19.1%	15.1%	77	13.4%	83

CLIMATE INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	2%	8%	18	12%	25
Wildfire Risk	2%	5%	88	14%	79

CRITICAL SERVICE GAPS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	17%	16%	60	14%	68
Lack of Health Insurance	10%	10%	53	9%	67
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Footnotes

Report for City: Nevada

APPENDIX – COST ANALYSIS FOR COMPLIANCE:

Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)
Nevada Municipal WWTP, Permit Renewal
City of Nevada
Missouri State Operating Permit #MO-0089109

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 that the permittee will upgrade their facility, or how the permittee will comply with new permit requirements. The results of this analysis are used to determine an adequate compliance schedule for the permit that may mitigate the financial burden of new permit requirements.

New Permit Requirements
The permit requires compliance with new effluent limitations for Chloride, which may require the design, construction, and operation of a different treatment technology. The cost assumptions in this analysis anticipate complete replacement of the existing treatment facility in option 1, and addition of MBR and blower system to the existing system in option 2. For this analysis, the Department has selected the mechanical treatment technology that could be the most practical solution to meet the new requirements for the community.

The permit also requires compliance with new or increased effluent monitoring requirements for Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Nitrogen, Total Phosphorus. Copper, Sulfate, Aluminum, Boron, Cobalt, Fluoride, α-Terpineol, ρ-Cresol, Benzoic Acid, Zinc, Phenol, and Chronic Whole Effluent Toxicity (WET). New influent monitoring requirements include Ammonia, Total Phosphorus, total Kjeldahl Nitrogen, and Nitrate + Nitrite, and new instream monitoring requirements include Hardness.

Flow and Connections
The size of the facility evaluated for upgrades was chosen based on the permitted design flow. If significant population growth is expected in the community, or if a significant portion of the flow is due to inflow and infiltration, then the flows and resulting estimated costs used in a facility plan prepared by a consulting engineer may differ. The number of connections was reported by the permittee on the Financial Questionnaire.

Flow Evaluated: 2.0 MGD	
Connection Type	**Number**
Residential	3,059
Commercial	521
Industrial	11
Total	**3,591**

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. If the financial questionnaire is not submitted with the renewal application, the Department sends a request to complete the form with the welcome correspondence. 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".

The Department estimates the cost for reconstruction of a treatment plant using a software program from Hydromantis[1] titled CapdetWorks. CapdetWorks is a preliminary design and costing software program for wastewater treatment plants utilizing national indices, such as the Marshall and Swift Index and Engineering News Records Cost Index, to price the development of capital, operating, maintenance, material, and energy costs for various treatment technologies. The program works from national indices; therefore, estimated costs will vary from actual costs, as each community is unique in its budget commitments and treatment design. Because the methods used to derive the analysis estimate costs that tend to be greater than actual costs associated with an upgrade, it reflects a conservative estimate anticipated for a community. The overestimation of costs is due to the fact that it is unknown by the Department what existing equipment and structures will be reused in the upgraded facility before an engineer completes a facility design. For questions associated with CapdetWorks, please contact the Department's Engineering Section at (573) 751-6621.

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 Nevada	
Current Monthly User Rates per 5,000 gallons*	$40.58
Municipal Bond Rating (if applicable)	unknown
Bonding Capacity**	$19,853,495
Median Household Income (MHI) [2]	$45,497
Current Annual Operating Costs (excludes depreciation)	$793,447
Current Outstanding Debt for the Facility	$6,672,700
Amount within the Current User Rate Used toward Payments on Outstanding Debt Related to the Current Wastewater Infrastructure	$38.45

* User Rates were reported by the permittee on the Financial Questionnaire.
** General Obligation Bond capacity allowed by constitution: Cities = up to 20% of taxable tangible property; Sewer districts or villages = up to 5% of taxable tangible property

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

The cost estimates located within this document are for the construction of a disinfection system that is the most practical to facilitate compliance with new permit requirements.

Cost Estimate Assumptions:
- Total Present Worth includes a five percent interest rate to construct and perform annual operation and maintenance of the new treatment plant over the term of the loan, which is 20 years for the mechanical plant option.
- Capital Cost includes design, construction, inspection, and contingency costs from CapdetWorks.
- Operation and maintenance (O&M) includes operations, maintenance, materials, chemical, and electrical costs for the facility on an annual basis. It includes items that are expected to be replaced during operations, such as pumps and is estimated between 15% and 45% of the user rate.
- Estimated user costs per 5,000 gallons per month are calculated using equations that account for debt retirement and annualized operation and maintenance costs over the life of the treatment facility. Estimated user costs are not added to the community's current user rate because they estimate total replacement of the facility.

The following table outlines the estimated costs of the new permit requirements:

Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements			
New Influent Requirements	Frequency	Estimated Cost	Estimated Annual Cost
Total Phosphorus	Monthly	$50.30 x 12	$603.60
Total Kjeldahl Nitrogen	Monthly	$42.70 x 12	$512.40
Nitrate + Nitrite	Monthly	$47.00 x 12	$564.00
Ammonia	Monthly	$51.20 x 12	$614.40
New Effluent Requirements	Frequency	Estimated Cost	Estimated Annual Cost
Total Phosphorus	Weekly β	$50.30 x 40	$2,012
Total Kjeldahl Nitrogen	Weekly β	-	-
Nitrate + Nitrite	Weekly β	-	-
Total Nitrogen	Ω	$93.60 x 40	$3,744

Table continues on next page

New Effluent Requirements	Frequency	Estimated Cost	Estimated Annual Cost
Total Recoverable Copper	Monthly £	$22 x 10	$220
Sulfate	Monthly	$20 x 12	$240
Total Recoverable Zinc	Quarterly £	$22 x 2	$44
Phenol	Quarterly £	$67 x 2	$134
Total Recoverable Aluminum	Quarterly	$22 x 4	$88
Total Recoverable Boron	Quarterly	$27 x 4	$108
Total Recoverable Cobalt	Quarterly	$22 x 4	$88
Fluoride	Quarterly	$26 x 4	$104
VOCs α-Terpineol ρ-Cresol Benzoic Acid	Quarterly	$255 x 4	$1,020
Total metal concentration analysis	Monthly £	$13 x 10	$130
Chronic WET test	Once per permit cycle	$2040 ÷ 5	$408
New Instream Requirements	Frequency	Estimated Cost	Estimated Annual Cost
Hardness	Monthly	$47	$564
Total Estimated Annual Cost of New Sampling and Permit Requirements			$11,198.4

£ - previous permit required twice per year frequency
β – previous permit required monthly frequency
Ω - previous permit required monthly TN which is calculated from TKN and Nitrate + Nitrite.

Mechanical Plant Pollution Control Option 1 Cost Estimates: complete replacement
For the complete replacement option, the Department has estimated costs for nutrient removal and membrane filtration. Sludge handling and sludge treatment are included in the capital, operations, maintenance, and present worth cost estimations. New sampling costs are also included in the following cost estimations.

Criterion 2B Table. Estimated Costs for Complete Replacement Option		
(1)	Estimated Total Present Worth	$84,837,824
	Estimated Capital Cost	$39,600,000
	Estimated Annual Cost of Operation and Maintenance	$3,630,000
	Estimated Monthly Cost Per User	$157.98
	Estimated Monthly Cost of New Sampling and Permit Requirements Per User	$158.24
(2)	Current Monthly Debt Retirement Amount Per User	$38.45
(3)	Total Monthly User Cost*	$196.69
	Total Monthly User Cost as a Percent of MHI [3]	5.19%

* Estimated Monthly Costs + Estimated Monthly Costs of New Sampling and Permit Requirements + Debt Retirement Amount

Mechanical Plant Pollution Control Option Cost Estimates: addition of MBR and blower system
For the addition of technology to the existing plant option, the Department has estimated costs for a MBR and blower system. New sampling costs are also included in the following cost estimations.

Criterion 2B Table. Estimated Costs for Mechanical Plant Pollution Control Option		
(1)	Estimated Total Present Worth	$19,277,726
	Estimated Capital Cost	$11,520,000
	Estimated Annual Cost of Operation and Maintenance	$622,500
	Estimated Monthly Cost Per User	$35.90
	Estimated Monthly Cost of New Sampling and Permit Requirements Per User	$36.16
(2)	Current Monthly Debt Retirement Amount Per User	$38.45
(3)	Total Monthly User Cost*	$76.74
	Total Monthly User Cost as a Percent of MHI [4]	2.02%

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

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

An investment in wastewater treatment will provide several social, environmental, and economic benefits. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri's water quality standards 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 Limits
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 effluent limits for nitrogen and phosphorus 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.

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.

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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.

Leachate Parameters Monitoring
This facility accepts landfill leachate which contains a variety of pollutants of concern including metals and volatile organic compounds. The monitoring of common pollutants of concern in leachate 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.

Whole Effluent Toxicity (WET) test – Monitoring
The WET Test is a quantifiable method of determining if discharge from a facility may be causing toxicity to aquatic life by itself or in combination with receiving stream water. WET tests are required under 10 CSR 20-6.010(8)(A)4 to be performed by specialists properly trained in conducting the test according to 40 CFR 136. This test will help ensure that the existing permit limits are providing adequate protection for aquatic life.

The WET Test monitoring requirement has 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.

Chlorides Limits
The major sources of chloride in surface waters are deicing salt, urban and agricultural runoff, and discharges from municipal wastewater plants, industrial plants, and the drilling of oil and gas wells. Chloride compounds are highly soluble; however, chloride ions do not degrade in the environment and tend to stay in solution once dissolved. High concentrations of chlorides can harm the osmoregulation of aquatic organisms; however, low levels can still negatively impact fish, aquatic bugs, and amphibians.

The effluent limits for chloride 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 reported that their outstanding debt for their current wastewater collection and treatment systems is $6,672,700. The community reported that each user pays $40.58 monthly, of which, 94.8% ($38.45) is used toward payments on the current outstanding debt.

As shown in Criterion 2, the projected user rate plus the amount of the current user rate used toward payments on outstanding debt is $196.63 for the complete replacement option and $76.68 for the addition of MBR and blower system.

(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.
- A schedule of compliance will be provided based on the results of this cost analysis. The schedule of compliance is provided to ensure that the entity has time to reasonably plan for compliance with the new permit requirements. The time provided ensures the entity has time to hire an engineer, develop facility plans, hold community meetings, seek an appropriate funding source, and construct the facility. If it is determined by the permittee that a longer schedule of compliance is necessary due to financial reasons, please contact the Department and request modification of the compliance schedule.

- An integrated plan may be an appropriate option if the community needs to meet other environmental obligations as well as the new requirements within this permit. The integrated plan needs to be well thought out with specific timeframes built into the management plan in which the municipality can reasonably commit. The plan should be designed to allow the municipality to meet Clean Water Act obligations by maximizing infrastructure improvement dollars through the appropriate sequencing of work. For further information on how to develop an integrated plan, please see the Department publication, "Missouri Integrated Planning Framework," at https://dnr.mo.gov/document-search/missouri-integrated-planning-framework-pub2684/pub2684.
- If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, they may use Factor 6 of the Use Attainability Analysis (UAA) 40 CFR 131.10(g)(6) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. For more information on variance requests, please visit the Department's water quality standards webpage at https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/standards/variances.

(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 permittee may apply for State Revolving Fund (SRF) financial support in order to help fund a capital improvements plan. Other loans and grants also exist for which the facility may be eligible. More information can be found on the Department's FAC website at https://dnr.mo.gov/water/business-industry-other-entities/financial-opportunities/financial-assistance-center/wastewater.

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 [2, 5-9] for the City of Nevada

No.	Administrative Unit	Nevada City	Missouri State	United States
1	Population (2021)	8,111	6,141,534	329,725,481
2	Percent Change in Population (2000-2021)	-5.8%	9.8%	17.2%
3	2021 Median Household Income (in 2022 Dollars)	$45,497	$65,928	$74,545
4	Percent Change in Median Household Income (2000-2021)	0.5%	-1.1%	1.1%
5	Median Age (2021)	37.3	38.8	38.4
6	Change in Median Age in Years (2000-2021)	2.0	2.7	3.1
7	Unemployment Rate (2021)	4.5%	4.5%	5.5%
8	Percent of Population Below Poverty Level (2021)	18.7%	12.8%	12.6%
9	Percent of Household Received Food Stamps (2021)	15.7%	10.1%	11.4%
10	(Primary) County Where the Community Is Located	Vernon County		

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

The community reported the following other investments relating to environmental improvements: Upgrades to the water treatment plant estimated at $12,000,000, upgrades to an animal shelter estimated at $1,600,000, and improvements to the sewerage high pressure line and wastewater overflow basin estimated at $1,500,000. All projects have timelines planned for 2022-2024.

(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 following table characterizes the community's overall financial capability to raise the necessary funds to meet the new permit requirements.

Criterion 7A Table. Financial Capability Indicator

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	N/A
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	1
Unemployment Rate (2021)	Beyond 1% below Missouri average of 4.5%	± 1% of Missouri average of 4.5%	Beyond 1% above Missouri average of 4.5%	2
2021 Median Household Income (in 2021 Dollars)	Beyond 25% above Missouri MHI ($65,928)	± 25% of Missouri MHI ($65,928)	Beyond 25% below Missouri MHI ($65,928)	1
Percent of Population Below Poverty Level (2021)	Beyond 10% below Missouri average of 12.8%	± 10% of Missouri average of 12.8%	Beyond 10% above Missouri average of 12.8%	2
Percent of Household Received Food Stamps (2021)	Beyond 5% below Missouri average of 10.1%	± 5% of Missouri average of 10.1%	Beyond 5% above Missouri average of 10.1%	1
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	3
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	1
Total Average Score (Financial Capability Indicator)	--	--	--	1.4

The **Financial Capability Indicator** and the **Residential Indicator** are considered jointly in the Financial Capability Matrix to determine the financial burden that could occur from compliance with the new requirements of the permit.

- Financial Capability Indicator (from Criterion 7): 1.4
- Complete Replacement Indicator (from Criterion 2): 5.19
- Addition of MBR and Blower System Indicator (from Criterion 2): 2.02

Criterion 7B Table. Financial Capability Matrix

Financial Capability Indicator	Residential Indicator (User Rate as a % of MHI)		
	Low (Below 1%)	Mid-Range (1.0% to 2.0%)	High (Above 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Medium Burden	High Burden

- Resulting Financial Burden for Addition of MBR and Blower System: High Burden

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

The community reported the following other relevant local economic conditions: The City of Nevada is seeing a decline in water and sewer residential users, and increasing cost of treatment supplies and chemicals.

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 Nevada has been determined to be a category 1 community. This means that the City of Nevada could potentially face more challenging socioeconomic circumstances over time and may have significant declines in population in the future. The Department has determined an adequate schedule of compliance that will alleviate the potential financial burdens that the City of Nevada may face due to the necessary upgrades required to meet the new permit requirements. If this community experiences a decline in population, which results in the inability to secure the necessary funding for an upgrade to meet the new requirements within this permit, a modification to the schedule of compliance may be necessary. The community may contact the Department and send an application for a modification to the schedule of compliance with justification for the time necessary to comply with this permit.

Conclusion and Finding

As a result of new regulations, the Department is proposing modifications to the current operating permit that may require the permittee to upgrade the facility and construct new control technologies. The Department has considered the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

The Department finds that a MBR and blower system is the most practical and affordable option for the City of Nevada. The construction and operation of a MBR and blower system will ensure that the individuals within the community will not be required to make unreasonable sacrifices in their essential lifestyle or spending patterns or undergo hardships in order to make the projected monthly payments for sewer connections.

In accordance with 40 CFR 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible; therefore, based on this analysis, the permit holder has received a **ten (10)** year schedule of compliance for the design and construction of a MBR and blower system. The following suggested milestones can be used by the permittee as a timeline toward compliance with new permit requirements. Once the permit holder's engineer has completed facility design with actual costs associated with permit compliance, it may be necessary for the permit holder to request additional time within the schedule of compliance. The Department is committed to review all requests for additional time in the schedule of compliance where adequate justification is provided.

Suggested Milestones during the 10 Year Schedule of Compliance

Year	Milestone(s)
1 – 3	Develop budgeting and acquire consultant services as needed to outline and develop a chloride evaluation plan for the discharge.
4 – 6	Evaluate potential mechanisms for chloride reduction.
7 - 10	Develop budget, provide chloride reduction plan, and select method(s) to reduce chloride discharge from Outfall #001.

The Department is committed to reassessing the cost analysis for compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time. Because each community is unique, the Department wants to make sure that each community has the opportunity to consider all options and tailor solutions to best meet their needs. The Department understands the economic challenges associated with achieving compliance, and is committed to using all available tools to make an accurate and practical finding of affordability for Missouri communities. If the community is interested in the funding options available to them, please contact the Financial Assistance Center for more information. https://dnr.mo.gov/water/business-industry-other-entities/financial-opportunities/financial-assistance-center/wastewater.

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

References

1. http://www.hydromantis.com/
2. (A) 2021 MHI in 2021 Dollar: United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2021 Inflation-Adjusted Dollars). https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2021.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) 2022 CPI, 2021 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2022) 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) 2021 MHI in 2022 Dollar = 2021 MHI in 2021 Dollar x 2022 CPI /2021 CPI; 2000 MHI in 2021 Dollar = 2000 MHI in 1999 Dollar x 2022 CPI /1999 CPI.
(E) Percent Change in Median Household Income (2000-2021) = (2021 MHI in 2022 Dollar - 2000 MHI in 2022 Dollar) / (2000 MHI in 2022 Dollar).

3. ($196.69/($45,497/12))100% = 5.19% (replacement + sampling + debt retirement)
4. ($76.74/($45,497/12))100% = 2.02% (addition to existing + sampling + current user rate)
5. (A) Total Population in 2021: United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2021.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 (2000-2021) = (Total Population in 2021 - Total Population in 2000) / (Total Population in 2000).
6. Median Age in 2021: United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2021.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 (2000-2021) = (Median Age in 2021 - Median Age in 2000).
7. United States Census Bureau. 2017-2021 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=ACSST5Y2021.S2301.
8. United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2021.S1701.
9. United States Census Bureau. 2017-2021 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=ACSST5Y2021.S2201.

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

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

FACILITY NAME: Nevada Municipal Wastewater Treatment Facility

PERMIT NO.: 0089109

COUNTY: Vernon

APPLICATION OVERVIEW

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

BASIC APPLICATION INFORMATION

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

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

C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

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

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

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

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

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

SIUs are defined as:

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

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

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

RECEIVED
NOV 09 2015
Water Protection Program

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

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
11/9/15	0 88

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

- ☐ An operating permit for a new or unpermitted facility. Construction Permit # _____
  (Include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)
- ☒ An operating permit renewal: Permit #MO- 0089109 Expiration Date 5/11/16
- ☐ 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
Nevada Municipal Wastewater Treatment Facility		417-448-5118
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
16517 S. 1338 Road	Nevada	MO 64772

2.1 LEGAL DESCRIPTION (Facility Site): NE¼, SW¼, ¼, Sec. 6, T 35N, R 31W — COUNTY: Vernon

2.2 UTM Coordinates Easting (X): 376757 Northing (Y): 4189525
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Little Drywood Creek

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

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
City of Nevada	rmarti@nevada.mo.org	417-448-5504
ADDRESS	CITY	STATE / ZIP CODE
110 S. Ash	Nevada	MO 64772

3.1	Request review of draft permit prior to Public Notice?	☒ YES	☐ NO
3.2	Are you a Publically Owned Treatment Works (POTW)?	☒ YES	☐ NO
	If yes, is the Financial Questionnaire attached?	☐ YES	☒ NO
3.3	Are you a Privately Owned Treatment Facility?	☐ YES	☒ NO
3.4	Are you a Privately Owned Treatment Facility regulated by the Public Service Commission (PSC)?	☐ YES	☒ NO

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

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
City of Nevada	rmarti@Nevada.mo.org	417-448-5504
ADDRESS	CITY	STATE / ZIP CODE
110 S. Ash	Nevada	MO 64772

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)
Mark Mendenhall	WWTP Supervisor	6217
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
mmendenhall@alliancewater.com	417-448-5118	

6. FACILITY CONTACT

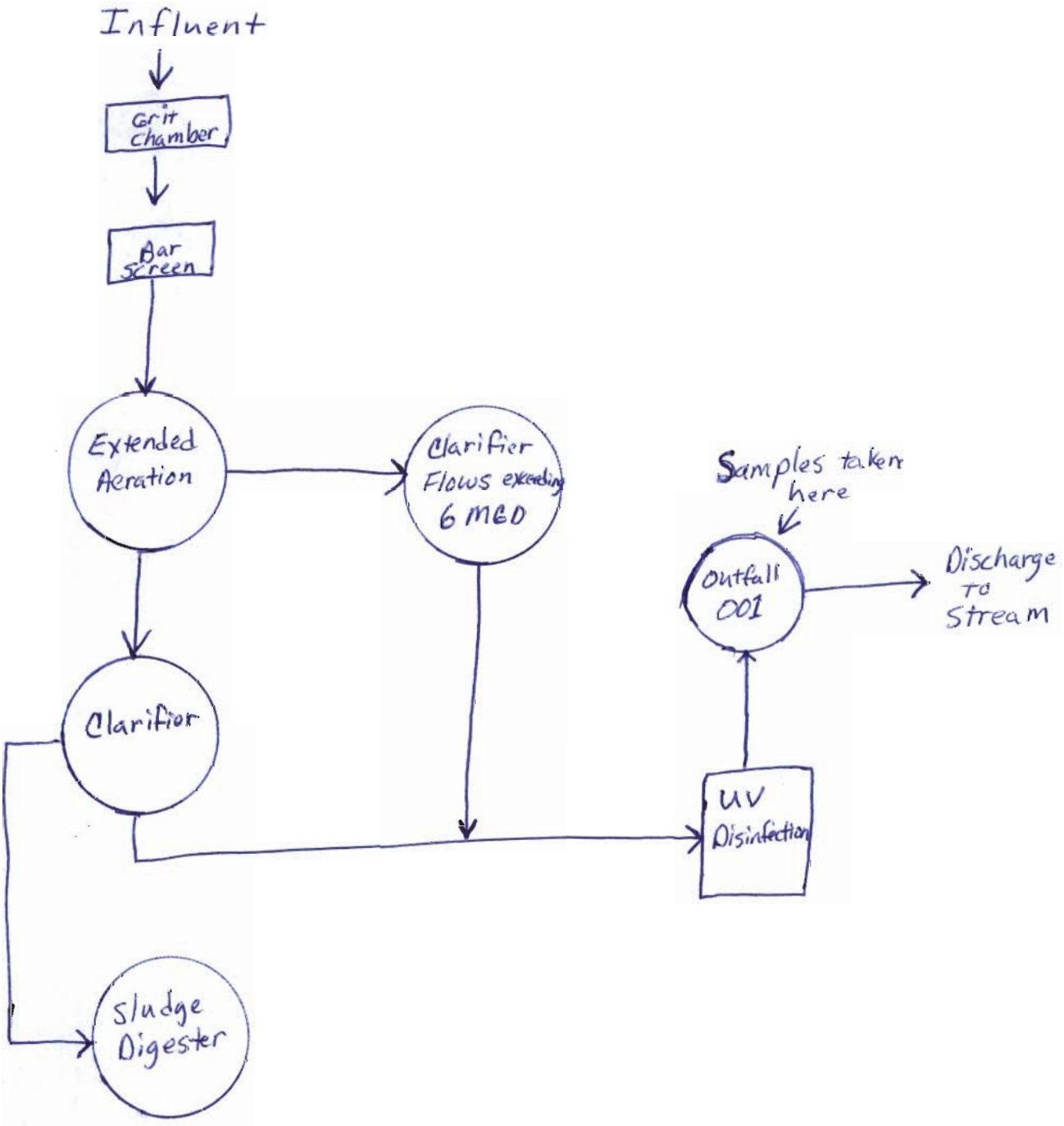
NAME	TITLE	
Mark Mendenhall	WWTP Supervisor	
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
mmendenhall@alliancewater.com	417-448-5118	
ADDRESS	CITY	STATE / ZIP CODE
16517 S. 1338 Road	Nevada	MO 64772

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

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



FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

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

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

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

7.4 Number of people presently connected or population equivalent (P.E.): _____ Design P.E. 22,500

7.5 Connections to the facility: 3,786

Number of units presently connected:

Homes 3,250 Trailers 25 Apartments 20 Other (including industrial) 4

Number of Commercial Establishments: 536

7.6 Design Flow 2.0 MGD | Actual Flow 1.0 MGD

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

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

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

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

(3) industries, (1) is agriculture, (1) is films & coatings, and (1) is metal finishing.

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

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

7.10 Is wastewater land applied? Yes ☐ No ☒

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

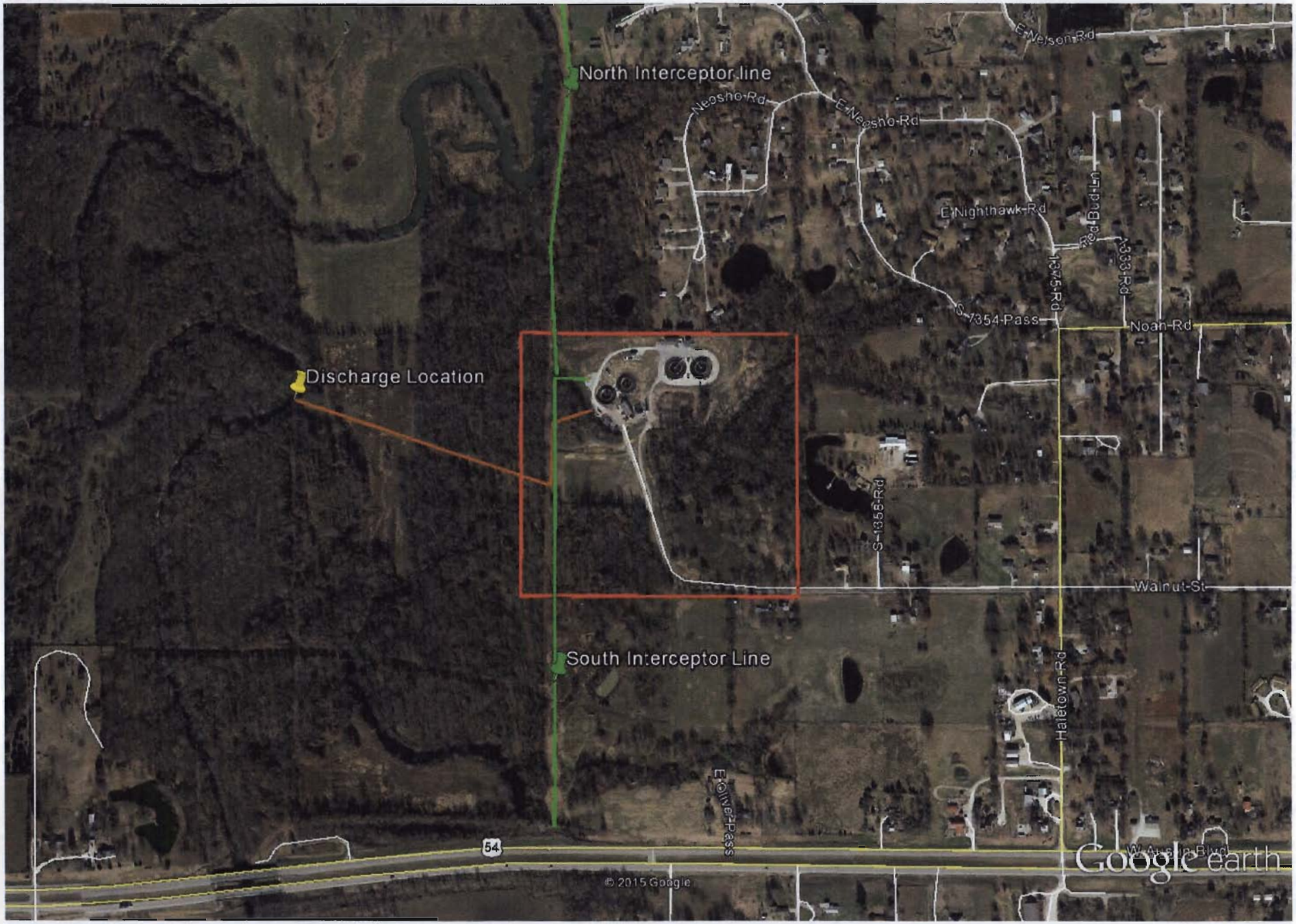
7.11 Does the facility discharge to a losing stream or sinkhole? Yes ☐ No ☒

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

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

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



Google earth

feet 4000

km 1

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

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 365 Actual Dry Tons/Year

9.3 Sludge storage provided: 230K Cubic feet; 180 Days of storage; 3.0 Average percent solids of sludge;

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

9.4 Type of storage:

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

9.5 Sludge Treatment:

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

9.6 Sludge use or disposal:

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

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

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

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

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

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

Land application following 40 CFR 503.

END OF PART A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Length of sanitary sewer collection system in miles
150

10.2 Does significant infiltration occur in the collection system? ☒ Yes ☐ No
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:
Two on going projects to replace old interceptors,
On going I+I program to camara and locate problem area's and make repairs to collection system.

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: Alliance Water Resources, INC.

MAILING ADDRESS: 16517 S. 1338 Road Nevada MO 64772

TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
417-448-5118	mmendenhall@allianceWater.com

RESPONSIBILITIES OF CONTRACTOR
Operate and Maintain WWTP

13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

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

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

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

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.5	S.U.		S.U.	
pH (Maximum)	7.4	S.U.		S.U.	
Flow Rate	3.04	MGD	1.4	MGD	1,095

*For pH report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
		Conc.	Units	Conc.	Units	Number of Samples		
Conventional and Nonconventional Compounds								
BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD_5	15	mg/L	4.7	mg/L	156	SM5210 B./ HACH 10560	
	$CBOD_5$		mg/L		mg/L			
E. COLI		6867	#/100 mL	45	#/100 mL	84	SM 9223 B.	1.0
TOTAL SUSPENDED SOLIDS (TSS)		26	mg/L	5	mg/L	156	SM 2540 D.	
AMMONIA (as N)		4.14	mg/L	1.38	mg/L	156	SM 4500 NH3 D,B-97/1	.10 mg/L
CHLORINE* (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN		9.2	mg/L	8.2	mg/L	36	SM 4500-06/HACH	10360
OIL and GREASE		7.8	mg/L	2.6	mg/L	36	EPA 1664A	5.0 mg/L
OTHER			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

PART C – CERTIFICATION

15. CERTIFICATION

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

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
Randy Martin	CITY OF NEVADA ADMINISTRATIVE SERVICES DIRECTOR

SIGNATURE: Randy D. Martin

TELEPHONE NUMBER WITH AREA CODE: 417-448-5504

DATE SIGNED: 11-2-15

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

Send Completed Form to:

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

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

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

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

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Nevada WWTP	MO- 0089109	001

PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

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

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

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS											
ALUMINUM											
ANTIMONY	ND	ug/L							3	EPA 200.8	1.0 ug/L
ARSENIC	1.6	ug/L			.87	ug/L			3	EPA 200.8	1.0 ug/L
BERYLLIUM	ND	ug/L							3	EPA 200.8	.50 ug/L
CADMIUM	ND	ug/L							3	EPA 200.8	.50 ug/L
CHROMIUM III	ND	mg/L							3	EPA 420.1	.010 mg/L
CHROMIUM VI	ND	mg/L							3	EPA 7196	.010 mg/L
COPPER	6.9	ug/L			4.0	ug/L			3	EPA 200.8	1.0 ug/L
IRON											
LEAD	ND	ug/L							3	EPA 200.8	1.0 ug/L
MERCURY	ND	ug/L							3	EPA 245.1	.20 ug/L
NICKEL	6.2	ug/L			5.3	ug/L			3	EPA 200.8	1.0 ug/L
SELENIUM	ND	ug/L							3	EPA 200.8	1.0 ug/L
SILVER	ND	ug/L							3	EPA 200.8	.50 ug/L
THALLIUM	ND	ug/L							3	EPA 200.8	1.0 ug/L
ZINC	166	ug/L			100	ug/L			3	EPA 200.8	10 ug/L
CYANIDE	ND	mg/L							3	SM 4500-	.0050 mg/L
TOTAL PHENOLIC COMPOUNDS	ND	mg/L							3	EPA 420.1	.050 mg/L
HARDNESS (as $CaCO_3$)	239000	ug/L			224000	ug/L			3	EPA 200.7	500 ug/L
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	ND	ug/L							3	EPA 624	100 ug/L
ACRYLONITRILE	ND	ug/L							3	EPA 624	20 ug/L
BENZENE	ND	ug/L							3	EPA 624	1.0 ug/L
BROMOFORM	ND	ug/L							3	EPA 624	1.0 ug/L
CARBON TETRACHLORIDE	ND	ug/L							3	EPA 624	1.0 ug/L

FACILITY NAME Nevada WWTP PERMIT NO. MO- 0089109 OUTFALL NO. 001

PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
CHLOROBENZENE	ND	ug/L							3	EPA 624	1 ug/L
CHLORODIBROMO-METHANE	ND	ug/L							3	" "	10 ug/L
CHLOROETHANE	ND	ug/L							3	" "	1 ug/L
2-CHLORO-ETHYLVINYL ETHER	ND	ug/L							3	" "	1 ug/L
CHLOROFORM	ND	ug/L							3	" "	1 ug/L
DICHLOROBROMO-METHANE	ND	ug/L							3	" "	1 ug/L
1,1-DICHLORO-ETHANE	ND	ug/L							3	" "	1 ug/L
1,2-DICHLORO-ETHANE	ND	ug/L							3	" "	1 ug/L
TRANS-1,2-DICHLOROETHYLENE	ND	ug/L							3	" "	1 ug/L
1,1-DICHLORO-ETHYLENE	ND	ug/L							3	" "	1 ug/L
1,2-DICHLORO-PROPANE	ND	ug/L							3	" "	1 ug/L
1,3-DICHLORO-PROPYLENE	ND	ug/L							3	" "	1 ug/L
ETHYLBENZENE	ND	ug/L							3	" "	1 ug/L
METHYL BROMIDE	ND	ug/L							3	" "	1 ug/L
METHYL CHLORIDE	ND	ug/L							3	" "	1 ug/L
METHYLENE CHLORIDE	ND	ug/L							3	" "	1 ug/L
1,1,2,2-TETRA-CHLOROETHANE	ND	ug/L							3	" "	1 ug/L
TETRACHLORO-ETHANE	ND	ug/L							3	" "	1 ug/L
TOLUENE	ND	ug/L							3	" "	1 ug/L
1,1,1-TRICHLORO-ETHANE	ND	ug/L							3	" "	1 ug/L
1,1,2-TRICHLORO-ETHANE	ND	ug/L							3	" "	1 ug/L
TRICHLORETHYLENE	ND	ug/L							3	" "	1 ug/L
VINYL CHLORIDE	ND								3	" "	1 ug/L
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	ND	ug/L							3	EPA 625	20.8 ug/L
2-CHLOROPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
2,4-DICHLOROPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
2,4-DIMETHYLPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
4,6-DINITRO-O-CRESOL	ND	ug/L							3	EPA 625	10.4 ug/L
2,4-DINITROPHENOL	ND	ug/L							3	EPA 625	55.6 ug/L
2-NITROPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
4-NITROPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L

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PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
PENTACHLOROPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
PHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
2,4,6-TRICHLOROPHENOL	ND	ug/L							3	EPA 625	5.6 ug/L
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	ND	ug/L							3	EPA 625	5.6 ug/L
ACENAPHTHYLENE	ND	ug/L							3	" "	5.6 ug/L
ANTHRACENE	ND	ug/L							3	" "	5.6 ug/L
BENZIDINE	ND	ug/L							3	" "	55.6 ug/L
BENZO(A)ANTHRACENE	ND	ug/L							3	" "	5.6 ug/L
BENZO(A)PYRENE	ND	ug/L							3	" "	5.6 ug/L
3,4-BENZO-FLUORANTHENE	ND	ug/L							3	" "	5.6 ug/L
BENZO(GH) PHERYLENE	ND	ug/L							3	" "	5.6 ug/L
BENZO(K) FLUORANTHENE	ND	ug/L							3	" "	5.6 ug/L
BIS (2-CHLOROTHOXY) METHANE	ND	ug/L							3	" "	5.6 ug/L
BIS (2-CHLOROETHYL) – ETHER	ND	ug/L							3	" "	6.7 ug/L
BIS (2-CHLOROISO-PROPYL) ETHER	ND	ug/L							3	" "	6.7 ug/L
BIS (2-ETHYLHEXYL) PHTHALATE	ND	ug/L							3	" "	5.6 ug/L
4-BROMOPHENYL PHENYL ETHER	ND	ug/L							3	" "	5.6 ug/L
BUTYL BENZYL PHTHALATE	ND	ug/L							3	" "	5.6 ug/L
2-CHLORONAPH-THALENE	ND	ug/L							3	" "	5.6 ug/L
4-CHLORPHENYL PHENYL ETHER	ND	ug/L							3	" "	5.6 ug/L
CHRYSENE	ND	ug/L							3	" "	5.6 ug/L
DI-N-BUTYL PHTHALATE	ND	ug/L							3	" "	5.6 ug/L
DI-N-OCTYL PHTHALATE	ND	ug/L							3	" "	5.6 ug/L
DIBENZO (A,H) ANTHRACENE	ND	ug/L							3	" "	5.6 ug/L
1,2-DICHLORO-BENZENE	ND	ug/L							3	EPA 8270	10.2 ug/L
1,3-DICHLORO-BENZENE	ND	ug/L							3	" "	10.2 ug/L
1,4-DICHLORO-BENZENE	ND	ug/L							3	" "	10.2 ug/L
3,3-DICHLORO-BENZIDINE	ND	ug/L							3	EPA 625	22.2 ug/L
DIETHYL PHTHALATE	ND	ug/L							3	" "	5.6 ug/L
DIMETHYL PHTHALATE	ND	ug/L							3	" "	5.6 ug/L

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
2,4-DINITRO-TOLUENE	ND	ug/L							3	EPA 625	6.7 ug/L
2,6-DINITRO-TOLUENE	ND	ug/L							3	EPA 625	5.6 ug/L
1,2-DIPHENYL-HYDRAZINE	ND	ug/L							3	EPA 8270	10.2 ug/L
FLUORANTHENE	ND	ug/L							3	" "	5.6 ug/L
FLUORENE	ND	ug/L							3	" "	5.6 ug/L
HEXACHLOROBENZENE	ND	ug/L							3	" "	5.6 ug/L
HEXACHLOROBUTADIENE	ND	ug/L							3	" "	5.6 ug/L
HEXACHLOROCYCLO-PENTADIENE	ND	ug/L							3	" "	5.6 ug/L
HEXACHLOROETHANE	ND	ug/L							3	" "	5.6 ug/L
INDENO (1,2,3-CD) PYRENE	ND	ug/L							3	" "	5.6 ug/L
ISOPHORONE	ND	ug/L							3	" "	5.6 ug/L
NAPHTHALENE	ND	ug/L							3	" "	5.6 ug/L
NITROBENZENE	ND	ug/L							3	" "	5.6 ug/L
N-NITROSODI-PROPYLAMINE	ND	ug/L							3	" "	5.6 ug/L
N-NITROSODI-METHYLAMINE	ND	ug/L							3	" "	5.6 ug/L
N-NITROSODI-PHENYLAMINE	ND	ug/L							3	" "	5.6 ug/L
PHENANTHRENE	ND	ug/L							3	" "	5.6 ug/L
PYRENE	ND	ug/L							3	" "	5.6 ug/L
1,2,4-TRICHLOROBENZENE	ND	ug/L							3	" "	5.6 ug/L

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.
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PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA

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

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

A. POTWs with a design flow rate greater than or equal to 1 million gallons per day
B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)
C. POTWs required by the permitting authority to submit data for these parameters

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

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: _____ chronic 5 acute

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

	Most Recent	2ND Most Recent	3RD Most Recent
A. Test Information			
Test Method Number	EPA 2000 and 2002	EPA 2000 and 2002	EPA 2000 and 2002
Final Report Number	6020/896	60153263	60129414
Outfall Number	001	001	001
Dates Sample Collected	9/2/15	9/9/14	9/17/13
Date Test Started	9/2/15	9/10/14	9/17/13
Duration	48 hr	48 hr	48 hr
B. Toxicity Test Methods Followed			
Manual Title	Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine organisms		
Edition Number and Year of Publication	USEPA, 2002	USEPA, 2002	USEPA, 2002
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	Yes	Yes	Yes
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:	at outfall 001	at outfall 001	at outfall 001
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	☒ Synthetic	☒ Synthetic	☒ Synthetic
Receiving Water	☒ upstream	☒ upstream	☒ upstream

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PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA (continued)

	Most Recent	Second Most Recent	Third Most Recent
I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh Water	✓	✓	✓
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	100%, 50%, 25%, 12.5%, 6.25%	100%, 50%, 25% 12.5%, 6.25%	100%, 50%, 25% 12.5%, 6.25%
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	✓	✓	✓
Salinity			
Temperature	✓	✓	✓
Ammonia	✓	✓	✓
Dissolved Oxygen	✓	✓	✓
L. Test Results			
Acute:			
Percent Survival in 100% Effluent	100%	100%	100%
LC_{50}	>100%	>100%	>100%
95% C.I.			
Control Percent Survival	>90%	>90%	>90%
Other (Describe)			
Chronic:			
NOEC			
IC_{25}			
Control Percent Survival			
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)?	09/02/2015	08/13/2014	08/27/2013
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.
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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

18. GENERAL INFORMATION

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

☒ Yes ☐ No

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

Number of non-categorical SIUs 2

Number of CIUs 1

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

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

NAME				
	Platinum Aerostructures			
MAILING ADDRESS	CITY	STATE	ZIP CODE	
1200 East Highland Avenue	Nevada	MO	64772	

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

metal finishing

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

Principal Product(s): aircraft repair

Raw Material(s): aluminum sheets

19.3 Flow Rate

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

2000 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.

1000 gpd ☒ Continuous ☐ Intermittent

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

a. Local Limits ☒ Yes ☐ No

b. Categorical Pretreatment Standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory? 40 CFR 433.17

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

☐ Yes ☒ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

18. GENERAL INFORMATION

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

☒ Yes ☐ No

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

Number of non-categorical SIUs 2

Number of CIUs 1

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

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

NAME Murphy/Brown

MAILING ADDRESS	CITY	STATE	ZIP CODE
1300 Murphy Mill Road	Nevada	MO	64772

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

Wash out Semi-trailer's

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

Principal Product(s): Swine/hog waste

Raw Material(s): corn/swine

19.3 Flow Rate

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

8,000 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.

gpd ☐ Continuous ☐ Intermittent

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

a. Local Limits ☒ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☐ No

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

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

☐ Yes ☒ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

18. GENERAL INFORMATION

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

☒ Yes ☐ No

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

Number of non-categorical SIUs 2

Number of CIUs 1

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

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

NAME: 3M Company

MAILING ADDRESS	CITY	STATE	ZIP CODE
2120 E. Austin Blvd.	Nevada	MO	64772

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

Film production

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

Principal Product(s): Adhesive film

Raw Material(s):

19.3 Flow Rate

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

20,000 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.

20,000 gpd ☒ Continuous ☐ Intermittent

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

a. Local Limits ☒ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☐ No

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

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

☐ Yes ☒ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

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

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

20.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

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

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

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

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

21.4 Waste Treatment

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

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

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

If intermittent, describe the discharge schedule:

END OF PART F

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO. MO-	OUTFALL NO.

PART G – COMBINED SEWER SYSTEMS

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

22. GENERAL INFORMATION

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

A. All CSO Discharges.

B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)

C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.

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

A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.

B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.

C. Locations of In-Line or Off-Line Storage Structures.

D. Locations of Flow-Regulating Devices.

E. Locations of Pump Stations.

22.3 Percent of collection system that is combined sewer

22.4 Population served by combined sewer collection system

22.5 Name of any satellite community with combined sewer collection system

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

23.1 Description of Outfall

a. Outfall Number

b. Location

c. Distance from Shore (if applicable) _____ ft

d. Depth Below Surface (if applicable) _____ ft

e. Which of the following were monitored during the last year for this CSO?

☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO

☐ CSO Flow Volume ☐ Receiving Water Quality

f. How many storm events were monitored last year?

23.2 CSO Events

a. Give the Number of CSO Events in the Last Year Events ☐ Actual ☐ Approximate

b. Give the Average Duration Per CSO Event

Hours ☐ Actual ☐ Approximate

c. Give the Average Volume Per CSO Event

Million Gallons ☐ Actual ☐ Approximate

d. Give the minimum rainfall that caused a CSO event in the last year _____ inches of rainfall

23.3 Description of Receiving Waters

a. Name of Receiving Water

b. Name of Watershed/River/Stream System

c. U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)

d. Name of State Management/River Basin

e. U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)

23.4 CSO Operations

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

END OF PART G

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

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

PART A – BASIC APPLICATION INFORMATION

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

1.1 **Fees Information:**

DOMESTIC OPERATING PERMIT FEES – PRIVATE

Annual operating permit fees are based on flow.

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

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

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

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

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

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

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

2.1 Self-explanatory.

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

2.3-2.4 Self-explanatory.

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

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

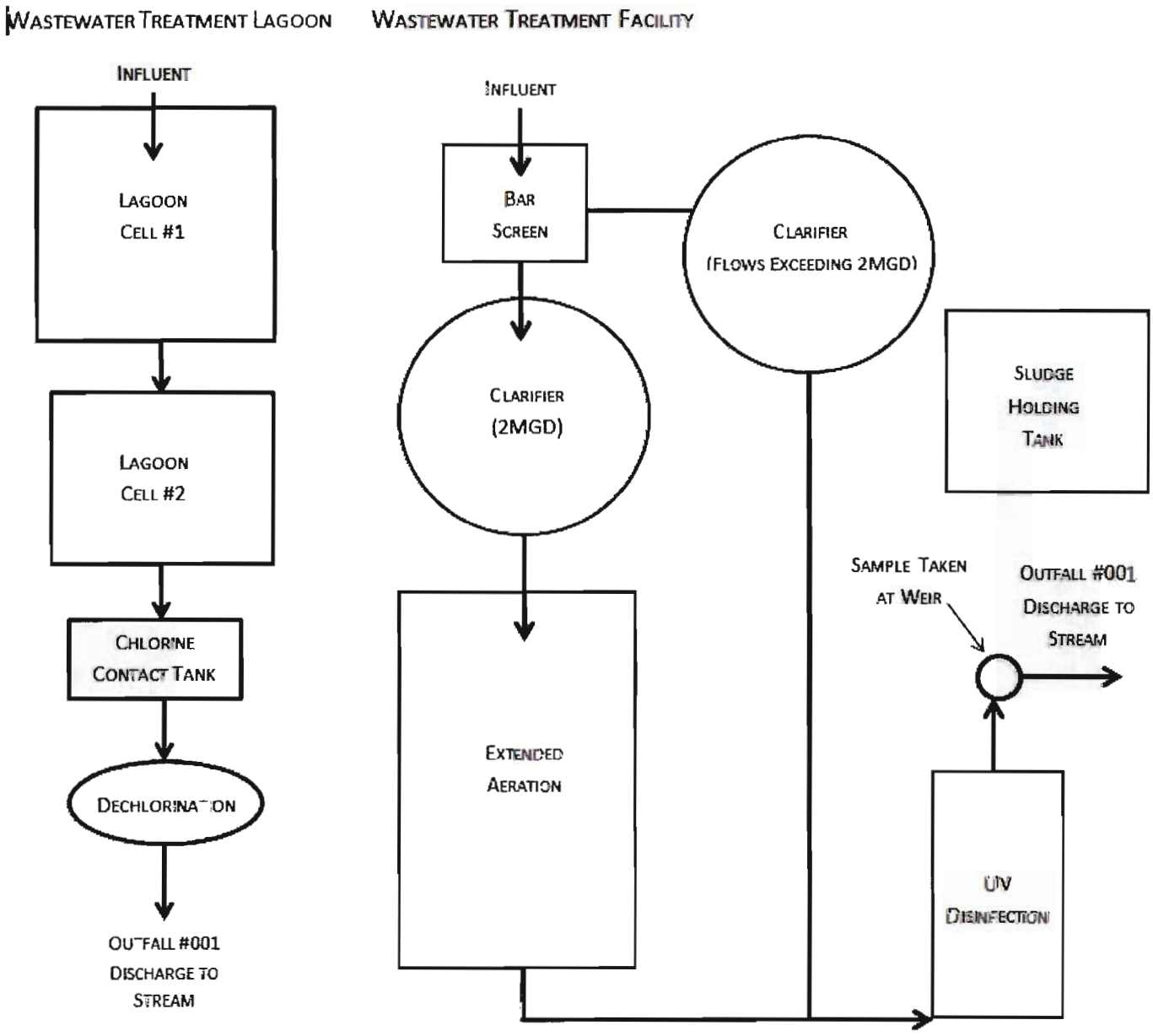
3.2-3.4 Self-explanatory.

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

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

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

7.1 Process Flow Diagram Examples



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

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

7.4-7.8 Self – explanatory.

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

7.10-8. Self-explanatory

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

9.2-9.9 Self – explanatory.

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

PART B – ADDITIONAL APPLICATION INFORMATION

10.-14. Self-explanatory

PART C – CERTIFICATION

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

PART D – EXPANDED EFFLUENT TESTING DATA

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

PART E – TOXICITY TESTING DATA

17. Self- explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

18. Federal regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.

18.1 Self – explanatory

18.2 A noncategorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
   i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
   ii. Contributes a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   iii. Is designated as an SIU by the control authority.

19.-21.4 Self-explanatory.

PART G – COMBINED SEWER SYSTEMS

22.-23.4 Self-explanatory.

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

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

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

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

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

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. Definitions

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

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

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

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

2. Identification of Industrial Discharges

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

3. Application Information

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

4. Notice to the Department

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
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.