STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

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

Permit No.	MO-0025275
Owner:	City of Portageville
Address:	301 East Main, Portageville, MO 63873
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Portageville Wastewater Treatment Facility
Facility Address:	West Main and McCrate Avenue, Portageville, MO 63873
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

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

FACILITY DESCRIPTION

See Page 2

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

March 1, 2017 — Effective Date
January 1, 2020 — Modification Date

Edward B. Galbraith, Director, Division of Environmental Quality

December 31, 2020 — Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall(s) #002 – Discharges from these outfalls are no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii).

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "C" Operator.
Influent lift station / screening / grit removal / oxidation ditch / three (3) clarifiers / aerobic digester /UV disinfection/ sludge is land applied.
Design population equivalent is 5317.
Design flow is 561,000 gallons per day.
Actual flow is 320,000 gallons per day.
Design sludge production is 111 dry tons/year.

Legal Description:	NE ¼, NW ¼, Sec. 36, T21N, R12E, New Madrid County
UTM Coordinates:	X= 794856, Y= 4035767
Receiving Stream and ID:	Portage Open Bay (C) (3960)
First Classified Stream and ID:	Portage Open Bay (C) (3960)
USGS Basin & Sub-watershed No.:	(08020204-0608)

Permitted Feature #SM1 – Instream Monitoring
Instream monitoring location – Upstream – See Special Condition #21

Receiving Stream and ID:	Portage Open Bay (C) (3960)
USGS Basin & Sub-watershed No.:	(08020204-0608)

Permitted Feature #SM2 – Instream Monitoring
Instream monitoring location – Downstream – See Special Condition #21

Receiving Stream and ID:	Portage Open Bay (C) (3960)
USGS Basin & Sub-watershed No.:	(08020204-0608)

OUTFALL #001

TABLE A-1
FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **January 1, 2020**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/weekday †	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		15	10	once/month	composite**
Total Suspended Solids	mg/L		20	15	once/month	composite**
E. coli (Note 1, Page 4)	#/100mL		1030	206	once/week	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	 5.8 11.6		 1.1 2.2	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE NEXT REPORT IS DUE FEBRUARY 28, 2020. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Oil & Grease	mg/L	15		10	once/quarter****	grab
Total Phosphorus	mg/L	*		*	once/quarter****	grab
Total Kjeldahl Nitrogen	mg/L	*		*	once/quarter****	grab
Nitrite + Nitrate	mg/L	*		*	once/quarter****	grab
Cyanide, Amenable to Chlorination (Note 2, Page 4)	µg/L	8.2		4.1	once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter****	grab
Chromium III, Total Recoverable	µg/L	260.0		129.6	once/quarter****	grab
Chromium VI, Total Dissolved	µg/L	15.0		7.5	once/quarter****	grab
Total Chromium	µg/L	*		*	once/quarter****	grab
Copper, Total Recoverable	µg/L	28.1		14.0	once/quarter****	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter****	grab
Nickel, Total Recoverable	µg/L	160.6		80.1	once/quarter****	grab
Silver, Total Recoverable	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE APRIL 28, 2020.						
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ***	SU	6.5		9.0	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE NEXT REPORT IS DUE FEBRUARY 28, 2020.						

† Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
* Monitoring requirement only.
** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.
*** pH is measured in pH units and is not to be averaged.
**** See table on Page 4 for quarterly sampling requirements.

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

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

Note 2 – This effluent limit is below the accepted minimum quantification level (ML). The Department has determined the current acceptable ML of Cyanide amenable to chlorination to be 10 µg/L when using SM 4500-CN^-G. Cyanides Amenable to Chlorination after Distillation in *Standard Methods for the Examination of Water and Wastewater*, 22nd Edition. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 10 µg/L will be considered violations of the permit and values less than the minimum quantification level of 10 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of Cyanide in excess of the effluent limits stated in the permit.

OUTFALL #001

TABLE A-3
WHOLE EFFLUENT TOXICITY
FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Acute Whole Effluent Toxicity (See Special Condition #20)	TU_a	*			once/year	composite**

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE NEXT REPORT IS DUE JANUARY 28, 2020.

TABLE B
INFLUENT MONITORING REQUIREMENTS

The facility is required to meet a removal efficiency of 85% or more as a monthly average. The monitoring requirements shall become effective on **March 1, 2017** and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen $Demand_5$	mg/L	once/month	composite**
Total Suspended Solids	mg/L	once/month	composite**

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE NEXT REPORT IS DUE FEBRUARY 28, 2020.

* 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 #SM1	TABLE C-1 INSTREAM MONITORING REQUIREMENTS

The monitoring requirements shall become effective on **March 1, 2017** and remain in effect until expiration of the permit.

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

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE APRIL 28, 2020.

PERMITTED FEATURE #SM2	TABLE C-2 INSTREAM MONITORING REQUIREMENTS

The monitoring requirements shall become effective on **March 1, 2017** and remain in effect until expiration of the permit.

PARAMETER	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Hardness	mg/L	*		*	once/quarter****	grab
PARAMETER		DAILY MINIMUM		MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE APRIL 28, 2020.

* Monitoring requirement only.
**** See table below for quarterly sampling requirements.

Minimum Sampling Requirements			
Quarter	**Months**	**Instream 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

D. STANDARD CONDITIONS

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

E. SPECIAL CONDITIONS

1. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources has initiated stakeholder discussions on how to best incorporate these new criteria into the State's rules. A date for when this rule change will occur has not been determined. Also, refer to Section VI of this permit's factsheet for further information including estimated future effluent limits for this facility. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at http://dnr.mo.gov/pubs/pub2481.htm.

2. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test including acute and chronic Whole Effluent Toxicity (WET) tests, or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
   (d) Incorporate the requirement to develop a pretreatment program pursuant to 40 CFR 403.8(a) when the Director of the Water Protection Program determines that a pretreatment program is necessary due to any new introduction of pollutants into the Publically Owned Treatment Works or any substantial change in the volume or character of pollutants being introduced.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

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

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

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

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

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

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

E. SPECIAL CONDITIONS (continued)

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

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

10. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide for Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002) or the Departments' CMOM Model located at http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at http://dnr.mo.gov/pubs/pub2574.htm.

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

11. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southeast Regional Office or by using the online Sanitary Sewer Overflow/Facility Bypass Application, located at: http://dnr.mo.gov/modnrcag/ during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.

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

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

14. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.

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

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

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

18. Land application of biosolids shall be conducted in accordance with Standard Conditions III and a Department approved biosolids management plan. Land application of biosolids during frozen, snow covered, or saturated soil conditions in accordance with the additional requirements specified in WQ426 shall occur only with prior approval from the Department.

E. SPECIAL CONDITIONS (continued)

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

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

E. SPECIAL CONDITIONS (continued)

21. 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.

The permittee shall submit to the Department 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:

(a) 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;
(b) A summary of the status of Industrial User compliance over the reporting period;
(c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
(d) Any other relevant information requested by the Department.

Pursuant to 40 CFR 122.44(j)(2)(ii), 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) along with the application for renewal of this permit.

22. Electronic Discharge Monitoring Report (eDMR) Submission System.
(a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
(b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
(1) Collection System Maintenance Annual Reports;
(2) Sludge/Biosolids Annual Reports;
i. In addition to the annual Sludge/Biosolids report submitted to the department, the permittee must submit Sludge/Biosolids Annual Reports electronically using EPA's NPDES Electronic Reporting Tool ("NeT") (https://cdx.epa.gov/).
(3) Pretreatment Program Reports;
(4) Any additional report required by the permit excluding bypass reporting.
After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
(c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
(1) Bypass reporting, See Special Condition #11 for 24-hr. bypass reporting requirements.
(d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
(e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

Missouri Department of Natural Resources
Factsheet Addendum
For Construction Permit/Modification
#MO-0025275
Portageville WWTF

This addendum gives pertinent information regarding minor/simple modification(s) to the above listed operating permit for a public comment process.

An addendum is not an enforceable part of a Missouri State Operating Permit.

Part I – Proposed Construction

The proposed construction includes influent lift station, screening, grit removal, a multi-component oxidation ditch, 3 clarifiers, aerobic digester, and UV disinfection system. The construction increased the design flow to 561,000 gpd (0.561 MGD).

Facility Description:
Influent lift station / screening / grit removal /oxidation ditch / three (3) clarifiers / aerobic digester /UV disinfection/ sludge is land applied. See Addendum Appendix A for process diagram.

Part II – Reason for the Modification

This operating permit is hereby modified to increase the design flow, add UV disinfection, expansion of treatment plant and eDMR reporting requirements. The facility underwent an Antidegradation Review in 2016 for the increased design flow and the connection of industry to the city treatment plant. The construction of the expansion of the treatment plant and the UV disinfection system was covered under CP0001890. The Statement of Work Complete was received November 25, 2019.

This modification removes the schedule of compliance for final compliance with Ammonia and *E. Coli* effluent limits. Additional permit limits being modified are the BOD and TSS effluent to reflect the results of the Antidegradation Review and effluent limits were added for Total Dissolved Chromium VI, Total Recoverable Chromium III and Total Recoverable Nickel. Monitoring for total chromium was added as the pretreatment standard requires its reporting.

Instream dissolved oxygen monitoring was recommended with the Antidegradation Review and is included with the modification.

ANTI-BACKSLIDING:

☒ - 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 IV – Effluent Limits Determination for more information regarding the reasonable potential determinations for each general criterion related to this 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.

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

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

Part III – Antidegradation Review

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

☒ - New and/or expanded discharge, please see **ADDENDUM APPENDIX B FOR ANTIDEGRADATION ANALYSIS.** Under the Antidegradation Analysis, 3 discharging alternatives were evaluated to meet the proposed EPA 2013 ammonia criteria, along with a BOD of 10 mg/L monthly average and a TSS of 15 mg/L monthly average. The Antidegradation Analysis also included the evaluation of metal limits with the connection of industry to the treatment plant. Since the Antidegradation Review was completed, the final design flow of the facility was adjusted to 0.561 MGD rather than the 0.562 MGD.

Part IV – Effluent Limits Determination (Outfall #001)

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:
Please see Addendum Appendix A-Antidegradation Analysis for discussion of effluent limits in this modification, starting on Page 13 of the factsheet.

The following parameters are different from the Antidegradation Review completed in 2016.

- **Ammonia as N.** The Antidegradation Review recommended monitoring only, but the renewal established effluent limits for ammonia. The effluent limits will be carried on as they are water quality based limits. Effluent limits will be reevaluated at renewal.

- **Total Toxic Organics.** With an effective pretreatment program, SRG needs to sample for TTO in their effluent per 40 CFR 433.17 or provide certification as required in 40 CFR 433.12 to the City of Portageville and a copy of the certification needs provided to the Department's pretreatment coordinator. As part of the operating permit renewal application for 2020, the expanded effluent testing required under Form B2 requires the three samples of the individual constituents that make up TTO, plus additional parameters.

- **Chronic WET Test.** The Antidegradation Review recommended Chronic WET testing; however the renewal contained only Acute WET testing due to the facility's design flow; therefore, this modification retains the Acute WET test.

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)).

(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. No evidence of an excursion of these criteria have 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 criteria. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with the secondary treatment technology based effluent limits established in this permit and there has been no indication to the department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criteria in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of these criteria.
(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 these criteria.
(E) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.
(F) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.
(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.
(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of these criteria have 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 criteria. 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 these criteria.

Part V – 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 make a "finding of affordability" on the new environmental requirement(s) within the permit. However, due to no costs associated with the new requirement(s) the department has determined the permit to be affordable based on the eight requirements listed in Section 644.145.4, RSMo.

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

Part VI – Administrative Requirements

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

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit. With permit synchronization, this permit will expire in the **4th Quarter of calendar year 2020.**

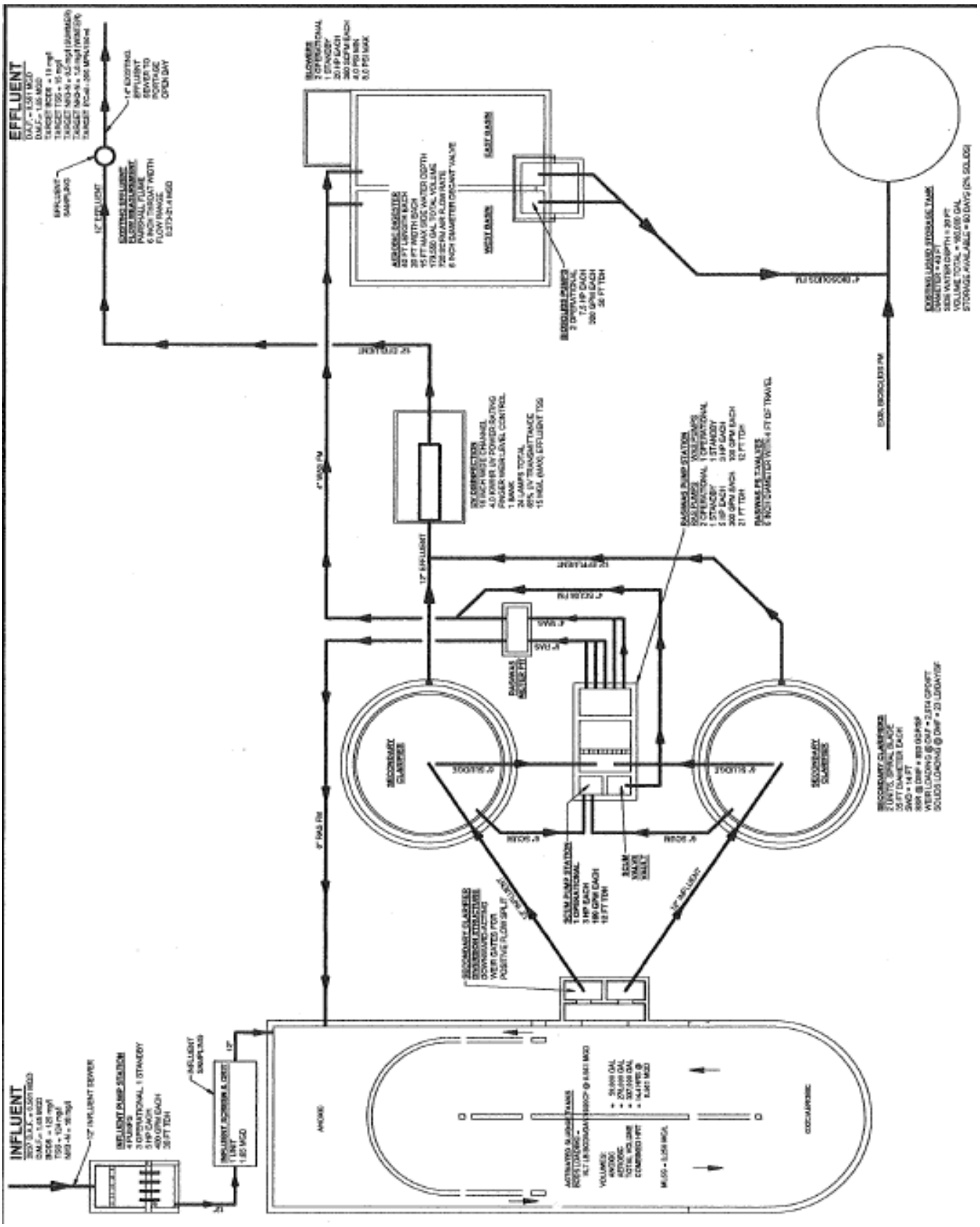
PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No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

✓ The Public Notice period for this operating permit was from March 3, 2017 to April 3, 2017. No responses received.

Date of addendum: February 24, 2017; 12/5/2019

Completed by:
Lease Meyers, EI
Engineering Section
Water Protection Program
leasue.meyers@dnr.mo.gov

ADDENDUM APPENDIX A: PROCESS DIAGRAM



ADDENDUM APPENDIX B: ANTIDEGRADATION ANALYSIS

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

Honorable Floyd Simmons, Mayor
301 East Main Street
Portageville, MO 63873

JAN 08 2016

RE: Water Quality and Antidegradation Review Preliminary Determination for Portageville WWTF, New Madrid Co., MO-0025275

Dear Mr. Simmons:

Enclosed please find the finalized Water Quality and Antidegradation Review (WQAR) for the Antidegradation Report for Portageville dated November 2, 2015,in New Madrid County. The WQAR contains pertinent antidegradation review information based on the use of existing water quality, effluent limitations and monitoring requirements for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Implementation Procedure* (AIP) dated May 2, 2012, U.S. Environmental Protection Agency (US EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources' (department's) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, or a complete application for a construction permit to the Water Protection Program-Engineering Section. These submittals must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited.

To reduce cost and time spent scanning permit applications, plans, and specification, the Water Protection Program's Engineering Section has begun asking for electronic copies of submitted documents in addition to paper copies. While it is not currently a requirement, submittal of electronic documents on a compact disc or other removable electronic media is being proposed in the new rulemaking for 10 CSR 20-6.010. If you have any questions regarding the new technology factsheet, please contact the Engineering Section of the Water Protection Program.

Recycled Paper

Following the department's public notice of draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the department will review any public notice comments received. If significant comments are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final.

Following issuance of the construction permit and completion of the actual facility construction, the department will proceed with the issuance of the operating permit.

If you should have questions regarding the enclosed WQAR, please contact Leasue Meyers by telephone at (573) 751-7906,by e-mail at leasue.meyers@dnr.mo.gov, or by mail at the Missouri Department of Natural Resources, Water Protection Program, PO Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

Refaat Mefrakis, P.E., Chief
Engineering Section

RM:lmk

Enclosure

c: Mr. Jeff Doss, PE, CMT
Mr. David Carani, Geosyntec

Water Quality and Antidegradation Review

For the Protection of Water Quality and Determination of Effluent Limits for Discharge to Portage Bay Open Channel

by

Portageville Wastewater Treatment Facility

December 2015

Table of Contents

1. Facility Information

FACILITY NAME: Portageville WWTF NPDES #: MO0025275

FACILITY TYPE: POTW – SIC #4952
FACILITY DESCRIPTION: As a result of the submitted alternative analysis, the applicant's preferred alternative is expansion of the existing oxidation ditch to a Carrousel oxidation ditch, plus the addition of UV disinfection. The expansion of the Portageville facility is to include flows from the SRG (MO-0001180), an industrial facility in town. The expanded design flow will be 0.562 MGD.

COUNTY:	New Madrid	UTM COORDINATES:	X=794856 / Y=4035768
12- DIGIT HUC:	08020204-0615	LEGAL DESCRIPTION:	NW ¼ , NE ¼, Sec.36, T21N, R12E
EDU*:	Mississippi Alluvial Plain/Little River Drainage	ECOREGION:	North Mississippi River Alluvial Plain

* - Ecological Drainage Unit

2. Water Quality Information

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised May 2, 2012, a facility is required to use *Missouri's Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. Water Quality History:

No receiving water information. Not listed on the 305(b) or 303(d) lists. In review of Portageville's discharge monitoring reports for the last five years (2010-2015), there were no violations of effluent limits. SRG has had trouble meeting existing permit limits and plans to replace their current facility with a completely new facility which will be connected to the city of Portageville. With the construction of the new pretreatment plant at SRG and the changes in process triggers the pretreatment new source performance standards found in 40 CFR 433.17.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.87	Secondary	Portage Open Bay Ditch	0.0

3. Receiving Waterbody Information

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Portage Open Bay Ditch	C	3960	0.0	0.0	0.1	AQL, HHP, IRR, LWW, SCR, WBC(B)
Old Channel Little River	P	3037	0.1	0.1	1.0	AQL, HHP, IRR, LWW, SCR, WBC(B)

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

RECEIVING WATER BODY SEGMENT #1: Portage Open Bay Ditch to Little River
Upper end segment* UTM coordinates: X=794856 / Y=4035768 (Outfall)
Lower end segment* UTM coordinates: X=789656 / Y=4035605 (confluence with Little River))

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

4. General Comments

Geosyntec Consultants and CMT Engineering prepared, on behalf of the City of Portageville, the *Antidegradation Report for the proposed expansion of Portageville WWTF* dated October 27, 2015. Applicant elected to assume that all pollutants of concern (POC) are significantly degrading the receiving stream in the absence of existing water quality. An alternative analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix C was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and no records of endangered species were found for the project area (Appendix B).

Portageville is working with the Department to establish a Pretreatment Program as required in 40 CFR 403 and10 CSR 20-6.100. The establishment of a pretreatment program has requirements for sampling and reporting on the pollutants of concern from industry. The monitoring requirements or effluent limits listed below are based on the sampling completed for the Pretreatment Program, the requirements of 40 CFR 433.17 Pretreatment Standards for New Sources-Metal Finishing Category. Based on the information submitted with the Pretreatment Program and the effluent limits calculated below, there is concern that the facility may have trouble meeting the total recoverable copper and total recoverable nickel effluent limits. Portageville may want to consider a metal translator study, additional stream studies for hardness, or another option to help achieve compliance with metal effluent limits.

5. Antidegradation Review Information

The following is a review of the *Antidegradation Report* dated November 02, 2015.

5.1. Tier Determination

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix C: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants "proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge." (AIP, Page 7). 40 CFR 433.17 is the new source pretreatment performance standards for metal finishing industries. The connection of SRG to Portageville, and SRG's plans to build a new pretreatment facility subject SRG to the pretreatment standards in 40 CFR 433.17 and as such those become parameters of concern for Portageville. The pollutants identified in 40 CFR 433.17are cadmium, copper, lead, nickel, silver, zinc, cyanide, and total toxic organics. Missouri Water Quality Standards do not include total chromium; instead it separates it into chromium III and chromium VI. Missouri Water Quality Standards do not include total cyanide; instead it has cyanide amenable to chlorination. Tier 2 was assumed for all POCs (see Appendix C).

Table 1: Pollutants of Concern and Tier Determination

Pollutants of Concern	Tier*	Degradation	Comment
BOD_5/DO	2	Minimal	
Total Suspended Solids (TSS)	**	Minimal	
Ammonia	2	Significant	Monitoring only
pH	***	Significant	Permit limits applied
Escherichia coli (*E. coli*)	2	Significant	Permit limits applied
Cadmium, Total Recoverable	2	Significant	
Chromium III, Total Recoverable	2	Significant	Permit limits applied
Chromium VI, Total Dissolved	2	Significant	Permit limits applied
Total Chromium	2	Significant	Monitoring only
Copper, Total Recoverable	2	Significant	Permit limits applied
Lead, Total Recoverable	2	Significant	Monitoring only
Nickel, Total Recoverable	2	Significant	Permit limits applied
Zinc, Total Recoverable	2	Significant	Monitoring only
Cyanide	2	Significant	Permit limits applied
Total Phosphorus	2	Significant	Monitoring only
Total Nitrogen	2	Significant	Monitoring only

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

The following Antidegradation Review Summary attachments in Appendix C were used by the applicant:
☒ Attachment A, Tier 2 with significant degradation.

5.2. Existing Water Quality

No existing water quality data was submitted. All POCs were considered to be Tier 2 and significantly degraded in the absence of existing water quality.

5.3. Demonstration of Necessity and Social and Economic Importance

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Two non-discharging alternatives were evaluated. Portageville currently operates as a regional wastewater treatment plant as it accepts wastewater from Portageville and cooling water from SRG. By accepting additional wastewater from SRG, Portageville is expanding its operation as a regional wastewater treatment provider. The nearest neighboring community is over two miles away and is smaller than Portageville and as such does not have capacity. The second no-discharge alternative evaluated was no discharge land application. To land apply 0.561 MGD, a minimum of 334 acres of land is estimated for requirement. Also, the sandy soils present and the potential risk for groundwater contamination eliminated this alternative from being a feasible option.

In planning for the expansion, the facility evaluated what they currently have and new options that can meet the proposed effluent limits, potential growth, and may help them meet nutrient limits and EPA's 2013 Ammonia criteria in the future. All discharging options evaluated were evaluated using the existing oxidation ditch with modifications to expand flow and provide a higher level of treatment; as the existing oxidation ditch provides better than the water quality standards. All options evaluated were to meet at a minimum the following effluent limits, which are more protective than the Water Quality Standards:

Table 2: Alternative Analysis Effluent Design Limits

Parameter	Units	Monthly Effluent Limit
BOD	mg/L	10
TSS	mg/L	15
Ammonia as N-summer	mg/L	0.6
Ammonia as N-winter	mg/L	2.1
Total Phosphorus	mg/L	1.5
Total Nitrogen	mg/L	10
pH	SU	6.5-9.0
Oil and Grease	mg/L	10

While Portageville elected to assume all pollutants as Tier 2 Significantly Degrading, there is a reduction in load expected with the connection of SRG Global to Portageville and the increased treatment at Portageville WWTF.

Table 3: Reduction in Load at Portageville WWTF

Parameter	Existing Limit (mg/L)	Existing Load* (lbs/day)	Proposed Limit (mg/L)	Proposed Load (lbs/day)†	%Change in Load
BOD	45mg/L	150	15 mg/L	70.3	-53.1%
TSS	45 mg/L	150	20 mg/L	93.7	-37.5%

*existing load calculated at 0.4 MGD † proposed load calculated at 0.562 MGD at Portageville WWTF

Table 4: Reduction in Load from SRG with connection to Portageville WWTF

Parameter	Existing Limit (mg/L)	Existing Load* (lbs/day)	Proposed Limit (mg/L)	Proposed Load (lbs/day) †	%Change in Load
TSS	60	321	0	0	-100%
Copper, TR	0.9	4.82	0.028	0.13	-97.3%
Chromium III, TR	2.77	14.83	0.26	1.22	-91.8%
Nickel, TR	3.98	21.3	0.16	0.75	-96.5%

*existing load calculated at 0.642 MGD † proposed load calculated at 0.562 MGD at Portageville WWTF

The base case alternative was the Carrousel oxidation ditch. The Carousel process proposed system includes one train with three tanks-one anaerobic/anoxic tank, one anoxic tank and one oxic tank .An anoxic basin upstream of the Carrousel basin to promote denitrification would be present. The Carrousel system can be operated. The present worth cost at twenty years is $8,267,560 with annual operation and maintenance cost estimates of $225,215. Besides having the lowest capital cost, annual operations, and maintenance cost, the Carrousel process is the preferred alternative as it is deemed operator-friendly, reliable and requires the least amount of day to day adjustments.

The second alternative evaluated was a Vertical Loop Reactor (VLR). The VLR consists for one train with three tanks-an anaerobic reactor, tank to provide simultaneous anoxic/oxic conditions and one to operate in an oxic mode. The VLR can be operated in several configurations. The present worth cost at twenty years is $8,737,408 with annual operation and maintenance cost estimates of $235,915.

The third alternative was a conventional biological nutrient removal (BNR) process. The proposed BNR design consists of three reactors divided between four tanks consisting of one anaerobic, one anoxic and three aerobic tanks. The present worth cost at twenty years is $9,348,730 with annual operation and maintenance cost estimates of $249,557. This is 113% of the base case.

5.3.1. Regionalization Alterative

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional wastewater collection system is mentioned. The applicant provided discussion of this alternative. By connecting SRG Global to Portageville, this provides a regionalization of treatment plants as it will remove the SRG Global process wastewater discharge to Portage Open Bay Ditch, reduce flows from SRG Global and improve the treatment of wastewater to the river.

Needs a Waiver to prevent conflict with area wide management plan approved under Section 208 of the Clean Water Act and/or under 10 CSR 20-6.010(3) (B) 1 or 2 Continuing Authorities? (Y or N) N

5.3.2 Losing Stream Alterative Discharge Location

Under 10 CSR 20-7.015(4) (A), *discharges to losing stream shall be permitted only after other alternatives including land application, discharge to gaining stream and connection to a regional facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons*.
The Discharge does not discharge to a losing stream segment or will not discharge with 2 miles of a losing stream segment.

5.3.3 Social and Economic Importance Evaluation

The applicant first identified the community that will be affected by the proposed degradation of water quality. The affected community is the community of Portageville and the surrounding area of New Madrid and Pemiscot Counties. In the Facility Plan submitted with the Antidegradation Review, the expansion discussion included a number of relevant factors were identified including affordable housing, needed growth, maintaining existing jobs and tax base, and environmental factors. Expansion of the Portageville WWTF will result in improvement to the environment by eliminating an existing discharge at SRG Global. Also the expansion of the Portageville treatment plant to include SRG Global's flows will allow SRG Global to maintain its existing facility and continue to provide jobs to the community. Within a Social and Economic Benefits section each factor was evaluated. Appendix C, Attachment A: Tier 2 with Significant Degradation form contains a summary of this information.

6. General Assumptions of the Water Quality and Antidegradation Review

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

7. Mixing Considerations

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

8. Permit Limits and Monitoring Information

Wasteload Allocation Study Conducted (Y or N):	N	Use Attainability Analysis Conducted (Y or N):	N	Whole Body Contact Use Retained (Y or N):	Y

Table 5: Outfall 001Effluent Limits

Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Basis for Limit (note 2)	Monitoring Frequency
Flow	MGD	*		*	FSR	once/weekday
Biochemical Oxygen Demand$_5$ ***	MG/L		15	10	PEL	once/week
Total Suspended Solids	MG/L		20	15	PEL	once/week
pH	SU	6.5– 9.0		6.5 – 9.0	FSR	once/week
Oil and Grease	MG/L	15		10	PEL/WQBEL	once/month
Ammonia as N (Apr 1 – Sept 30)	MG/L	*		*	PEL/WQBEL	once/month
Ammonia as N (Oct 1 – Mar 31)	MG/L	*		*	PEL/WQBEL	once/month
Escherichia coliform (*E. coli*)	Note 1	1030**		206**	FSR	once/week
Cyanide, amenable to Chlorination †	µG/L	8.2		4.1	PEL/WQBEL	Once/quarter
total Cyanide	µG/L	*		*	FSR	Once/quarter
Cadmium, Total Recoverable	µG/L	*		*	PEL/WQBEL	Once/quarter
Chromium III, Total Recoverable	µG/L	260.0		129.6	PEL/WQBEL	Once/quarter
Chromium VI, Total Dissolved	µG/L	15.0		7.5	PEL/WQBEL	Once/quarter

TOTAL CHROMIUM	µG/L	*		*	FSR	Once/quarter
COPPER, TOTAL RECOVERABLE	µG/L	28.2		14.0	PEL/WQBEL	once/month
LEAD, TOTAL RECOVERABLE	µG/L	*		*	PEL/WQBEL	Once/quarter
NICKEL, TOTAL RECOVERABLE	µG/L	160.6		80.1	PEL/WQBEL	once/month
SILVER, TOTAL RECOVERABLE	µG/L	*		*	PEL/WQBEL	Once/quarter
ZINC, TOTAL RECOVERABLE	µG/L	*		*	PEL/WQBEL	Once/quarter
TOTAL NITROGEN	MG/L	*		*	FSR	Once/quarter
TOTAL PHOSPHORUS	MG/L	*		*	FSR	Once/quarter
TOTAL TOXIC ORGANICS	µG/L	*		*	FSR	Once/year
CHRONIC WET TESTING	TU_C	*			FSR	Once/year

NOTE 1 – COLONIES/100 ML

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

* Monitoring requirements only.

** The Monthly and Weekly Average for *E. coli* shall be reported 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).

*** This facility is required to meet a removal efficiency of 85% or more for BOD_5 and TSS. Influent BOD_5 and TSS data should be reported to ensure removal efficiency requirements are met.

† See Derivation and Discussion below on minimum detection levels for Cyanide, amenable to chlorination.

9. Receiving Water Monitoring Requirements

Upstream monitoring is being required as the facility is required to monitor for Total Phosphorus and Total Nitrogen, as well as having metals effluent limits and monitoring in their permit to allow the development of protective limits in the future.

Site 01. (Upstream)

PARAMETER(S)	UNITS	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen	mg/L	Once/quarter	Grab	Upstream of the discharge to be set by facility, provide that info when applying for operating permit modification Report Date/Time/Location for each sample taken.
Total Phosphorus	mg/L	Once/quarter	Grab	
Total Nitrogen	mg/L	Once/quarter	Grab	

Site 02. (Downstream)

PARAMETER(S)	UNITS	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen	mg/L	Once/quarter	Grab	Downstream of the discharge to be set by facility, provide that info when applying for operating permit modification Report Date/Time/Location for each sample taken.
Hardness as $CaCO_3$	mg/L	Once/quarter	Grab	

10. Derivation and Discussion of Limits

Wasteload allocations and limits were calculated using two methods:

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

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

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

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

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD5 and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. OUTFALL #001 – MAIN FACILITY OUTFALL LIMIT DERIVATION

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

- **Biochemical Oxygen Demand (BOD_5).** Applicant proposed BOD_5 limits of 10 mg/L monthly average, and 20 mg/L average weekly limits were proposed. The proposed effluent limits are more protective than the Water Quality Standard effluent limits of 30 mg/L monthly average and 45 mg/L average weekly limit. Per the Department's Dissolved Oxygen Modeling Guidance, the facility proposed effluent limits of 10 mg/L monthly average with performance data from the existing facility, dissolved oxygen modeling is not required. As a result of this analysis, MDNR staff concludes that the above mentioned effluent limits are protective of beneficial uses and existing water quality. Influent monitoring will be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** Applicant proposed effluent limits of 15 mg/L monthly average and 20mg/L average weekly limit. The proposed effluent limits are more protective than the Water Quality Standard effluent limits of 30 mg/L monthly average and 45 mg/L average weekly limit. Influent monitoring will be required for this facility in its Missouri State Operating Permit.

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

- **Total Ammonia Nitrogen**. Facility currently has monitoring only and in review of the existing discharge monitoring reports; the facility has an average discharge concentration of 0.05 mg/L. Monitoring only is recommended for the expansion as the facility does not show reasonable potential and SRG is not expected to contribute ammonia is in the discharge.

  Water Quality based effluent limits are calculated below to show what the effluent limits would be if the treatment changes at the plant lead to reasonable potential showing at renewal. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

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

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.87 + 0.0)1.5 – (0.0 * 0.01))/0.87$ $C_e = 1.5$ mg/L
Acute WLA: $C_e = ((0.87 + 0.0)12.1 – (0.0 * 0.01))/0.87$ $C_e = 12.1$ mg/L

LTA_c = 1.5 mg/L (0.780) = 1.17 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
LTA_a = 12.1 mg/L (0.321) = 3.89 mg/L [CV = 0.6, 99th Percentile]
MDL = 1.17 mg/L (3.11) = 3.6 mg/L [CV = 0.6, 99th Percentile]
AML = 1.17 mg/L (1.19) = 1.4 mg/L [CV = 0.6, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.87 + 0.0)3.1 – (0.0 * 0.01))/0.87$ $C_e = 3.1$ mg/L
Acute WLA: $C_e = ((0.87 + 0.0)12.1 – (0.0 * 0.01))/0.87$ $C_e = 12.1$ mg/L

LTA_c = 3.1 mg/L (0.780) = 2.42 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
LTA_a = 12.1 mg/L (0.321) = 3.89 mg/L [CV = 0.6, 99th Percentile]
MDL = 2.42 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99th Percentile]
AML = 2.42 mg/L (1.19) = 2.9 mg/L [CV = 0.6, 95th Percentile, n =30]

Notice to Permittee: On August 22, 2013, the Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, *Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013,* is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect aquatic life in water.

The Water Protection Program (WPP) is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The Department has begun discussions about how these new criteria will be implemented. WPP is suggesting that all permittees consider the lower ammonia criteria and adjust the treatment design, if they so choose. Consideration of the future ammonia criteria at this time could avoid a near-future upgrade. More information about the new ammonia criteria for aquatic life protection may be found at: http://dnr.mo.gov/pubs/pub2481.pdf.

From review of the Portageville's existing discharge monitoring reports and that the discharge from SRG is not expected to include ammonia as a pollutant of concern, Portageville appears to meet EPA's 2013 Ammonia Criteria and the design for the expansion includes meeting the 2013 Ammonia Criteria.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Daily Maximum of 1030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d). For facilities greater than 100,00 gpd: At a minimum, weekly monitoring is required during the recreational season (April 1 – October 31), with compliance to be determined by calculating the geometric mean of all samples collected during the reporting period (samples collected during the calendar week for the weekly average, and samples collected during the calendar month for the monthly average). The weekly average requirement is consistent with EPA federal regulation 40 CFR 122.45(d). 10 CSR 20-7.015 (9)(D)6.A, B and C; and 10 CSR 20-7.015 (9)(B)1.A.Please see **GENERAL ASSUMPTIONS OF THE WQAR #7.** The applicant proposes to meet E. Coli effluent limits with UV disinfection.

- **Oil & Grease**. Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

- **Cyanide, amenable to chlorination**. 40 CFR 433.17 identifies cyanide as a pollutant of concern and sets pretreatment standards for it. As Missouri's Water Quality Standards is for Cyanide, amenable to chlorination, both parameters are required for monitoring. Protection of Aquatic Life Chronic and Acute Criteria (g/L) are listed below.

Chronic WLA:	Ce = ((0.87 + 0.0)5 – (0.0 * 0.0))/0.87	Ce = 5 µg/L
Acute WLA:	Ce = ((0.87 + 0.0)22 – (0.0 * 0.0))/0.87	Ce = 22 µg/L

LTAc = 5 (0.527) = 2.64 µg/L	[CV = 0.6, 99th Percentile]
LTAa = 22 (0.321) = 7.1 µg/L	[CV = 0.6, 99th Percentile]
MDL = 2.64 (3.11) = 8.2 µg/L	[CV = 0.6, 99th Percentile]
AML = 2.64 (1.55) = 4.1 µg/L	[CV = 0.6, 95th Percentile, n = 4]

Note: This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved methods. The department has determined the current acceptable ML for Cyanide Amenable to Chlorination (CATC) to be 10 µg/L when using SM 4500-CN^- G. Cyanides Amenable to Chlorination after Distillation in *Standard Methods for the Examination of Water and Wastewater*, 22nd Edition. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values equal to or greater than the minimum quantification level of 10 µg/L will be considered violations of the permit and values less than the minimum quantification level of 10 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of CATC in excess of the effluent limits as stated in the permit.

- **Cyanide**. Monitoring only. 40 CFR 433.17 identifies cyanide as a pollutant of concern and sets pretreatment standards for it.

- **Total Toxic Organics**. Monitoring only. 40 CFR 433.17 identifies total toxic organics as a pollutant of concern and sets pretreatment standards for it. 40 CFR 433.12 allows permittees to certify that TTO's are not discharged in lieu of performing monitoring. With this certification, permittees are required to submit a solvent management plan.

METALS

Hardness Dependent Metals:

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and "The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 210 mg/L. Hardness was determined from data submitted with the Pretreatment Program Submittal.

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 adsorbed 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
Cadmium	0.913	0.878
Chromium III	0.316	0.860
Copper	0.960	0.960
Lead	0.683	0.683
Nickel	0.998	0.997
Silver	0.85	NA
Zinc	0.980	0.980

Conversion factors are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 210 mg/L. Hardness was determined from data submitted with the Pretreatment Program Submittal.

- **Cadmium, Total Recoverable.** Monitoring only. 40 CFR 433.17 identifies cadmium as a pollutant of concern and sets pretreatment standards for it. For the discharge from Portageville, monitoring only is recommended. Protection of Aquatic Life Chronic and Acute Criteria (µg/L) are listed below. The effluent limit is calculated below if based on new information or changes in SRG's operations necessitates effluent limits.
  Chronic =0.4/0.878 =0.47 µg/L
  Acute= 9.8/0.93 = 10.71 µg/L

  Chronic WLA: $C_e = ((0.87 + 0.0)0.47 – (0.0 * 0.0))/0.87$ $C_e = 0.5$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)10.71 – (0.0 * 0.0))/0.87$ $C_e = 10.71$ µg/L

  $LTA_c = 0.5\ (0.527) = 0.25$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 10.71\ (0.321) = 3.4$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 0.25 (3.11) = 0.80 µg/L [CV = 0.6, 99th Percentile]
  AML = 0.25 (1.55) = 0.40 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Chromium III, Total Recoverable.** Based on the information submitted in the Pretreatment Program approval, effluent limits are recommended for chromium III, total recoverable. 40 CFR 433.17 identifies total chromium as a pollutant of concern and sets pretreatment standards for it. As Missouri's Water Quality Standards are for Chromium II I and Chromium VI, the parameters are separated. Protection of Aquatic Life Chronic and Acute Criteria (µg/L) are listed below.
  Chronic =136/0.860 =158.26 µg/L
  Acute= 1046/0.316 = 3310.81 µg/L

  Chronic WLA: $C_e = ((0.87+ 0.0)158.26 – (0.0 * 0.0))/0.87$ $C_e = 158.3$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)3310.81 – (0.0 * 0.0))/0.87$ $C_e = 3310.81$ µg/L

  $LTA_c = 158.3\ (0.527) = 83.47$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 3310.81\ (0.321) = 1063$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 83.47 (3.11) = 260.0 µg/L [CV = 0.6, 99th Percentile]
  AML = 83.47 (1.55) = 129.6 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Chromium VI, Total Dissolved.** Based on the information submitted in the Pretreatment Program approval, effluent limits are recommended for chromium VI, total dissolved. 40 CFR 433.17 identifies total chromium as a pollutant of concern and sets pretreatment standards for it. As Missouri's Water Quality Standards are for Chromium II I and Chromium VI, the parameters are separated. Protection of Aquatic Life Chronic and Acute Criteria (µg/L) are listed below.
  Chronic =10 µg/L
  Acute= 15 µg/L

  Chronic WLA: $C_e = ((0.87 + 0.0)10 – (0.0 * 0.0))/0.87$ $C_e = 10$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)15 – (0.0 * 0.0))/0.87$ $C_e = 15$ µg/L

  $LTA_c = 10\ (0.527) = 5.27$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 15\ (0.321) = 4.8$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 4.8 (3.11) = 15.0 µg/L [CV = 0.6, 99th Percentile]
  AML = 4.8 (1.55) = 7.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Total Chromium.** Monitoring only. 40 CFR 433.17 identifies total chromium as a pollutant of concern and sets pretreatment standards for it.

- **Copper, Total Recoverable.** Based on the information submitted in the Pretreatment Program approval, effluent limits are recommended for copper, total recoverable. 40 CFR 433.17 identifies copper as a pollutant of concern and sets pretreatment standards for it. Protection of Aquatic Life Chronic and Acute Criteria µg/L) are listed below.

  Chronic =16.9/0.960 =17.59 µg/L
  Acute= 27.0/0.960 = 28.16 µg/L

  Chronic WLA: $C_e = ((0.87 + 0.0)17.59 – (0.0 * 0.0))/0.87$ $C_e = 17.59$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)28.16 – (0.0 * 0.0))/0.87$ $C_e = 28.16$ µg/L

  $LTA_c = 17.59\ (0.527) = 9.28$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 28.16\ (0.321) = 9.0$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 9.0 (3.11) = 28.2 µg/L [CV = 0.6, 99th Percentile]
  AML = 9.0 (1.55) = 14.0 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Lead, Total Recoverable.** Monitoring only. 40 CFR 433.17 identifies lead as a pollutant of concern and sets pretreatment standards for it. For the discharge from Portageville, monitoring only is recommended. Protection of Aquatic Life Chronic and Acute Criteria (µg/L) are listed below. The effluent limit is calculated below if based on new information or changes in SRG's operations necessitate effluent limits.

  Chronic =5.6/0.683 =8.18 µg/L
  Acute= 143/0.683 = 209.86 µg/L

  Chronic WLA: $C_e = ((0.87 + 0.0)8.18 – (0.0 * 0.0))/0.87$ $C_e = 8.18$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)209.86 – (0.0 * 0.0))/0.87$ $C_e = 209.86$ µg/L

  $LTA_c = 8.18\ (0.527) = 4.3$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 209.86\ (0.321) = 67.38$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 4.3 (3.11) = 13.4 µg/L [CV = 0.6, 99th Percentile]
  AML = 4.3 (1.55) = 6.7 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Nickel, Total Recoverable.** Based on the information submitted in the Pretreatment Program approval, effluent limits are recommended for nickel, total recoverable. 40 CFR 433.17 identifies total chromium as a pollutant of concern and sets pretreatment standards for it. Protection of Aquatic Life Chronic and Acute Criteria (µg/L) are listed below.
  Chronic =97.5/0.997 =97.77 µg/L
  Acute= 878/0.998 = 879.45 µg/L

  Chronic WLA: $C_e = ((0.87 + 0.0)97.77 – (0.0 * 0.0))/0.87$ $C_e = 97.77$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)879.45 – (0.0 * 0.0))/0.87$ $C_e = 879.45$ µg/L

  $LTA_c = 97.77 (0.527) = 51.6$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 879.45 (0.321) = 282.38$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 51.6 (3.11) = 160.6 µg/L [CV = 0.6, 99th Percentile]
  AML = 51.6(1.55) = 80.1 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Silver, Total Recoverable.** Monitoring only. 40 CFR 433.17 identifies silver as a pollutant of concern and sets pretreatment standards for it. For the discharge from Portageville, monitoring only is recommended. Protection of Aquatic Life Acute Criteria (µg/L) is listed below. The effluent limit is calculated below if based on new information or changes in SRG's operations necessitate effluent limits.
  Acute= 11.5/0.850= 13.58 µg/L

  Acute WLA: $C_e = ((0.87 + 0.0)13.58 – (0.0 * 0.0))/0.87$ $C_e = 13.58$ µg/L

  $LTA_a = 13.58 (0.321) = 4.36$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 4.36 (3.11) = 13.6 µg/L [CV = 0.6, 99th Percentile]
  AML = 4.36 (1.55) = 6.8 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Zinc, Total Recoverable.** Monitoring only. 40 CFR 433.17 identifies zinc as a pollutant of concern and sets pretreatment standards for it. For the discharge from Portageville, monitoring only is recommended. Protection of Aquatic Life Chronic and Acute Criteria (µg/L) are listed below. The effluent limit is calculated below if based on new information or changes in SRG's operations necessitate effluent limits.
  Chronic =220.17/0.986 =224.66 µg/L
  Acute= 220.17/0.986 =224.66 µg/L

  Chronic WLA: $C_e = ((0.87 + 0.0)224.66 – (0.0 * 0.0))/0.87$ $C_e = 224.66$ µg/L
  Acute WLA: $C_e = ((0.87 + 0.0)224.66 – (0.0 * 0.0))/0.87$ $C_e = 224.66$ µg/L

  $LTA_c = 224.66 (0.527)$ 118.5 µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 224.66 (0.321) = 72.14$ µg/L [CV = 0.6, 99th Percentile]
  MDL = 72.14 (3.11) = 224.7 µg/L [CV = 0.6, 99th Percentile]
  AML = 72.14 (1.55) = 112.0 µg/L [CV = 0.6, 95th Percentile, n = 4]

NUTRIENTS

- **Total Phosphorus and Total Nitrogen**. Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Once per quarter sampling for one permit cycle or up to 5 years if permit cycle is less than 5 years.

WHOLE EFFLUENT TOXICITY

- **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 WET test is required as the facility discharges to a Class C stream with no mixing and the facility receives industrial flow and has effluent limits or monitoring for metals and other toxics.

10.2 Instream Monitoring Derivation

- **Dissolved Oxygen.** Monitoring only requirement. Dissolved Oxygen measurements are to be taken during the period from one hour prior to sunrise to one and one-half hour after sunrise.

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

- **Total Hardness.** Facility has effluent limits for metals. Total hardness monitoring required to calculate effluent limits for metals appropriately.

11. ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION

The proposed expanded facility discharge, Portageville WWTF, 0.562 MGD will result in significant degradation of the segment identified in Portage Open Bay Ditch. Expansion of the oxidation ditch was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations. The cost effectiveness of the other technologies were evaluated, and the expansion of the oxidation ditch was found to be cost effective and was determined to be the preferred alternative.

It has also been determined that the other treatment options presented (VLR and BNR) may also be considered reasonable alternatives provided they are designed to be capable of meeting the effluent limitations developed based on the preferred alternative. If any of these options are selected, you may proceed with the appropriate facility plan, construction permit application, or other future submittals without the need to modify this Antidegradation review document.

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

Reviewer: Leasue Meyers, EI
Date: December 11, 2015
Unit Chief: John Rustige, P.E.

Appendix A: Map of Discharge Location

On-line LEVEL 1 Report

Your project information

First Name: David

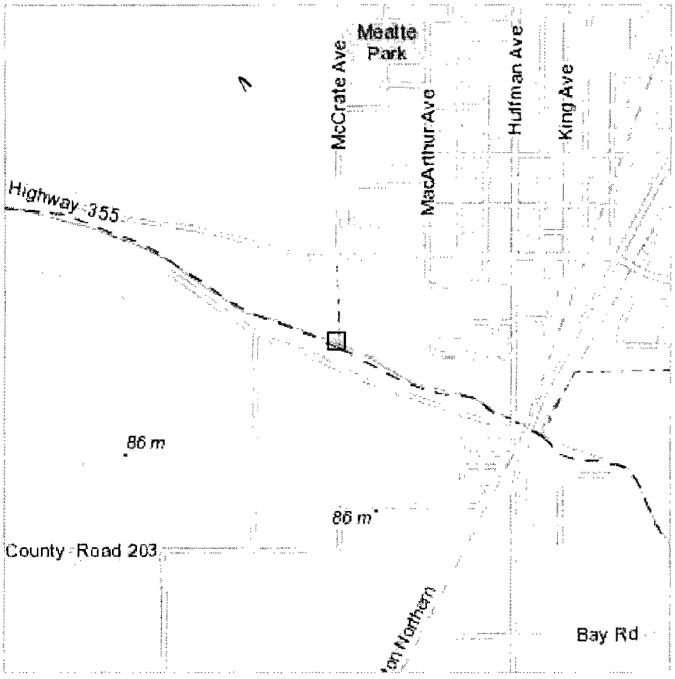
Last Name: Carani

Email Address: dcarani@geosyntec.com

Business: Geosyntec

Project: Facility/Building

Your query information



Details

Cautions related to species/habitats of concern or project type. Please reflect these concerns and recommendations in your plans:

Appendix C: Antidegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, Portageville WWTF.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
WATER QUALITY REVIEW ASSISTANCE/ ANTIDEGRADATION REVIEW REQUEST
PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS

For Office Use Only	
CHECK NUMBER 5512	
DATE RECEIVED 11/2/15	FEE SUBMITTED $250.00 SB

TYPE OF PROJECT ☐ Grant ☑ SRF Loan ☐ All Other Projects

REQUESTER	TELEPHONE NUMBER WITH AREA CODE
Floyd Simmons, Mayor	(573) 379-5789
PERMITTEE / FACILITY NAME	MSOP NUMBER (IF APPLICABLE)
Portageville Wastewater Treatment Facility	MO-0025275
COUNTY	SIC / NAICS CODE
New Madrid County	4952

REASON FOR REQUEST

☐ New Discharge (See Instruction #9) ☐ Upgrade (No expansion) (See AIP) ☑ Expansion ☐ QAPP or Study Review

DESCRIPTION OF PROPOSED ACTIVITY

SRG Global, Inc., will be elliminating their existing facility (MO-0001180) and discharging to the Portageville WWTF. Portageville is expanding/upgrading to accommodate the new flows.

FACILITY INFORMATION

METHOD OF BACTERIA COMPLIANCE

☐ Chlorine Disinfection ☑ Ultraviolet Disinfection ☐ Ozone ☐ Not Applicable

WATER QUALITY ISSUES*

*Water quality issues include: effluent limit compliance issues, notices of violation, water body beneficial uses not attained or supported, etc.

OUTFALL	LOCATION (UTM OR LAT/LONG OR LEGAL DESCRIPTION)	MAPPED[1] (CHECK)	RECEIVING WATER BODY[2]
01	794856; 4035767	✓	Portage Open Bay Ditch

1 Please attach topographic map (See: www.dnr.mo.gov/intemetmapviewer/) with outfall locations clearly marked. For additional outfalls, attach a separate form.
2 Please see general instructions for discharges to streams.

OUTFALL	NEW DESIGN FLOW ** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
01	0.526	Activated sludge	Municipal WW

* Describe predominating character of effluent. Example: Domestic Wastewater, Municipal Wastewater, Industrial Wastewater, Storm water, Mining Leachate, etc.
** If expansion, indicate new design flow.

See General Instructions. Additional information may be needed to complete your request. Your request may be returned if items are missing. The water quality review assistance is a process to determine effluent limits for new facilities or existing facilities seeking to increase loading into the receiving stream.

SIGNATURE Floyd E Simmons "Mayor" DATE 10-14-15

PRINT NAME Floyd E. Simmons (Mayor) EMAIL ADDRESS Floyd.Simmons3413@yahoo.com

TELEPHONE NUMBER WITH AREA CODE 573-379-0324

Applicant supplied (check all that apply):
- ☑ Fee. See Instructions
- ☑ Attachment A – Significant Degradation
- ☐ Attachment B – Minimal Degradation
- ☐ Attachment C – Temporary degradation
- ☐ Attachment D – Tier 1 Review
- ☐ No Degradation Evaluation
- ☑ Heritage Review Determination. See Instruction #8.
- ☐ Geohydrologic Evaluation. See Instruction #9.
- ☐ Tier Analysis for minimal degradation (see Page 3, Tier 2 Reviews).
- ☐ Quality Assurance Project Plan.
- ☐ Time of travel study (see Instruction #3) or model (see Instruction #2).

Submit request to:
Missouri Department of Natural Resources,
Water Protection Program,
ATTN: WPCB Engineering Section
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 573-751-1300
Fax: 573-522-9920

MO 780-1893 (12-14) Page 1 of 4

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

ANTIDEGRADATION REVIEW SUMMARY FOR PUBLIC NOTICE
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Portageville Wastewater Treatment Facility		(573) 379-5789	
ADDRESS (PHYSICAL)	**CITY**	**STATE**	**ZIP CODE**
301 East Main	Portageville	MO	63873

2. OWNER

NAME AND OFFICIAL TITLES			
City of Portageville			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
301 East Main	Portageville	MO	63873
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		
(573) 379-5789	pvillecityclerk@sbcglobal.net		

3. CONTINUING AUTHORITY (The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf)

NAME AND OFFICIAL TITLES			
Same as Owner			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		

4. RECEIVING WATER BODY SEGMENT #1

NAME

Portage Open Bay Ditch (Class C) - Upper end of segment: 795816; 4035413 Lower end of segment: 791877; 4035471

4.1 UPPER END OF SEGMENT (Location of discharge)
UTM _____ OR Lat _____, Long _____

4.2 LOWER END OF SEGMENT
UTM _____ OR Lat _____, Long _____

Per the Missouri Antidegradation Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

5. WATER BODY SEGMENT #2 (IF APPLICABLE. Use another form if a third segment is needed)

NAME

NA

5.1 UPPER END OF SEGMENT
UTM _____ OR Lat _____, Long _____

5.2 LOWER END OF SEGMENT
UTM _____ OR Lat _____, Long _____

6. WET WEATHER ANTICIPATIONS

If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to the antidegradation review report.

What is the Wet Weather Flow Peaking Factor in relation to design flow? 2.9

Wet Weather Design Summary:

An analysis of the flow history for the city yields an average daily water use of approximately 110 gallons per capita per day. It also reveals a peak daily flow to average daily flow multiple of about 3.66. SRG has stated that their industrial pretreatment system would operate in batch modes, allowing interim testing prior to each batch discharge. The intent is for there to be a near continuous flow from one batch tank while filling and testing the alternate tank. The plant and treatment system is in operation 24 hours a day and the discharge will be spread over the same timeframe. SRG has stated that their peak flow would be 260,000 gpd and operate under the same basic conditions. For more information, refer to the preliminary engineering report.

7. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data approved by the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Watershed Protection Section. **Additional information needed with the EWQ data includes**: 1) Date existing water quality data was provided by the Watershed Protection Section, 2) Approval date by the Watershed Protection Section of the QAPP, project sampling plan, and data collected for all appropriate POCs.

Comments/Discussion: NA

8. SUMMARY OF THE POLLUTANTS OF CONCERN AND THE PROPOSED EFFLUENT LIMITS

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. and assumed or demonstrated to cause significant degradation. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

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

Pollutants of Concern*	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5	MG/L	See Attached		
TSS	MG/L			
DISSOLVED OXYGEN	MG/L			
AMMONIA	MG/L			
BACTERIA (E. COLI)	CFUS			

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

*Assumed Tier 2.

9. IDENTIFYING ALTERNATIVES

Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.

Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri in their Tier 2 Reviews with alternative analysis must comply with the requirements set forth in the *New Technology Definitions and Requirements Factsheet* that can be found at: http://dnr.mo.gov/pubs/pub2453.pdf.

Non-degrading alternatives: Land application, regionalization

Alternatives ranging from less-degrading to degrading including Preferred Alternative
(All treatment levels for POCs must at a minimum meet water quality standards):

Alternatives	**Level of Treatment Attainable for each Pollutant of Concern**					
	BOD5	TSS	AMMONIA AS N			
	(MG/L)	MG/L	MG/L			
Carrousel AS (Base Case)	meets	proposed	limits	for	all	POCs
Vertical Loop Reactor	equivalent/better	than	proposed	limits	for all	POCs
Convention BNR	equivalent/better	than	proposed	limits	for all	POCs

10. DETERMINATION OF THE REASONABLE ALTERNATIVE

Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. **Please do not write "See Report" for any box below.**

Practicability Summary:

"The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a.

The non-degrading alternatives identified for the proposed project are not practicable. Land application is not practicable due to geological concerns with the sandy soils that exist in the area and the potential risk of groundwater contamination. In addition, the City does not own 334 contiguous acres of land, either suitable or non-suitable for land application purposes. Regionalization is not practicable because the nearest neighboring community is over 2 miles away and is significantly smaller than Portageville; therefore, it would not have the capacity to accept the City's effluent. Given that the City is expanding to accommodate SRG's discharge, the City's WWTF will be performing the same function as a regional facility. The less-degrading alternatives are practicable.

Economic Efficiency Summary:

Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b.

The base case alternative has the lowest life cycle cost (20-year PW).

Carrousel (Base Case) - $8.3 million
Vertical Loop Reactor - $8.7 million
Convention Biological Nutrient Removal - $9.3 million

Affordability Summary:

Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement."

Assumed affordable.

Preferred Chosen Alternative:

The Carrousel activated sludge (base case) is the preferred alternative.

Reasons for Rejecting the other Evaluated Alternatives:

Results from the alternatives analysis indicate that the base case alternative is the only alternative that is practicable, efficient, and affordable. It will produce a high quality effluent and is the most operator friendly option and is not labor-intensive to operate. Therefore, it is the preferred project alternative.

Comments/Discussion:

11. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.

Identify the affected community:

The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located.: Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project."

The residents of the City of Portageville will be the community most impacted by the project.

Identify relevant factors that characterize the social and economic conditions of the affected community:

Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged.

1) Maintaining existing employment levels, and
2) Making environmental improvements.

Describe the important social and economic development associated with the project:

Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1.

The project will provide necessary wastewater services to accommodate SRG's effluent, thereby helping to ensure that SRG will maintain its Portageville facility and continue to provide manufacturing jobs for City residents. In addition to providing much needed wastewater services, the upgraded WWTF will also result in a number of environmental improvements: will regionalize treatment and reduce outfalls to the receiving stream; will reduce overall effluent BOD, TSS, and metals concentrations; and will include disinfection.

PROPOSED PROJECT SUMMARY:

The City of Portageville is upgrading their existing WWTF to accommodate new flows from SRG's existing facility and is pursuing a Tier 2, significant degradation WQAR for the project. Geosyntec developed effluent limits for the new facility and CMT evaluated appropriate non- and less-degrading alternatives that would meet the required limits. The Carrousel activated sludge facility is the only alternative that is practicable, efficient, and affordable. The upgraded WWTF is also socially and economically important to the City, as it will result in a number of environmental improvements and provide necessary wastewater services to accommodate SRG's effluent, thereby helping to ensure that SRG will maintain its Portageville facility and continue to provide manufacturing jobs for City residents.

Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.

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

SIGNATURE		DATE	10/23/15
NAME AND OFFICIAL TITLES / LICENSE #	Jeffrey Doss #E029363	COMPANY NAME	CMT
ADDRESS	1 Memorial Dr. St. Louis, MO. 63102	CITY / STATE / ZIP CODE	
TELEPHONE NUMBER WITH AREA CODE	314.571.9096	E-MAIL ADDRESS	jdoss@cmtengr.com

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

SIGNATURE	"Mayor"	DATE	10-14-15

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	"Mayor"	DATE	10-14-15

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0025275
PORTAGEVILLE WASTEWATER TREATMENT FACILITY

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

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

A Factsheet is not an enforceable part of an operating permit.
This Factsheet is for a Minor.

Part I – Facility Information

Facility Type: POTW - SIC #4952

January 20202 Modification: The 2017 public notice discussed in the addendum is for the construction of the oxidation ditch, 3 clarifiers, influent pump station, screening, grit works, aerobic digestion and UV disinfection system. The new discharge will be 0.561 MGD and was covered under CP0001890.

Facility Description:
Influent lift station / screening / grit removal / oxidation ditch / two (2) clarifiers / sludge holding basin / sludge is land applied

Application Date: 05/05/15
Expiration Date: 11/01/15

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.62	Secondary	Domestic

Facility Performance History:
This facility was last inspected on June 18, 2015. The conditions of the facility at the time of inspection were found to be satisfactory. A review of monitoring reports submitted by the permittee indicates no effluent limit exceedances in the past five years.

Comments:
This facility is planning on expanding the oxidation ditch to a Carrousel oxidation ditch and adding UV disinfection. This expansion is to include flows from SRG Global (MO-0001180), an industrial facility in Portageville. They will be expanding the design flow to 0.562 MGD. A pretreatment program has also been developed. The Department received a Preliminary Engineering Report/Antidegradation Submittal in November 2015.

This facility discharges to Portage Open Bay 8-20-13 MUDD V1.0 (C) (3960) which is now classified as EPA has approved the Department's new stream classifications. A schedule of compliance has been included in the permit to meet final effluent limitations for *E. coli* which are protective of the WBC-B use designation of the stream.

Comments (continued):
Changes in this permit include the addition of the following effluent parameters: ammonia, *E. coli*, phosphorus, nitrogen, cyanide, chromium III, chromium VI, copper, lead, nickel, silver, and zinc. It includes the addition of the following instream monitoring parameters: phosphorus, nitrogen, and hardness. It includes the removal of temperature monitoring. See Part VII of the Fact Sheet for further information regarding the addition and removal of effluent parameters. Special conditions were updated to include the addition of reporting of Non-detects requirements, pretreatment requirements, instream monitoring requirements, and bypass reporting requirements.

Part II – Operator Certification Requirements

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

Owned or operated by or for a

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

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

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

Operator's Name: Thomas Penrod
Certification Number: 10957
Certification Level: C

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

Part III– Operational Monitoring

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

Part IV – Receiving Stream Information

RECEIVING STREAM(S) TABLE: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
8-20-13 MUDD V1.0	C	3960	IRR, LWW, AQL, HHP, WBC-B, SCR	08020204-0608	Direct Discharge

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

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

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

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

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

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

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (C, E, P, P1)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
8-20-13 MUDD V1.0 (C)	0.0	0.0	0.0

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

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

Permitted Feature #SM2 – Downstream
Downstream hardness monitoring has been added to the permit in order to develop a site-specific hardness for determining reasonable potential and calculating hardness-dependent metals limits.

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

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

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

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

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

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

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

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

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

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

☒ - Permittee land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan.

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

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

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

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

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

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

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

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

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

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

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

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

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

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.
Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the

Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system.

The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

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

SCHEDULE OF COMPLIANCE (SOC):

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

A SOC is not allowed:

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

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

☒ - The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits. The City commented that the estimated timetable for design, bidding, and construction of the new facility is four (4) years and should include adequate time for training, start-up, and discharge permit compliance for *E. coli* and ammonia. The City commented that they will be conducting a metal translator study for copper. They also commented that they will be studying their cyanide situation at the facility further. The schedule has been established at 4 years in accordance with the Department's "Schedule of Compliance, Policy for Staff Drafting Operating Permits". Please see the Cost Analysis for Compliance attached as Appendix E for further detail on how the socio-economic status of the community has impacted this SOC.

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

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

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

☒ - At this time, the permittee is not required to develop and implement a SWPPP.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

☒ - Bypasses occur or have occurred at this facility. A Peak Flow Voluntary Compliance Agreement (VCA) was terminated as the reports required in the agreement were not submitted. The VCA was terminated on February 10, 2012.

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

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation
☒ - This facility does not discharge to a 303(d) listed stream.

Part VI –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Current effluent limitations in this permit are:

Summer – 5.8 mg/L daily maximum, 1.1 mg/L monthly average.
Winter – 11.6 mg/L daily maximum, 2.2 mg/L monthly average.

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

Summer – 2.7 mg/L daily maximum, 0.5 mg/L monthly average.
Winter – 8.6 mg/L daily maximum, 1.6 mg/L monthly average.

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

Operating permits for facilities in Missouri must be written based on current statutes and regulations. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VII – Effluent Limits Determination

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

☐ Missouri or Mississippi River [10 CSR 20-7.015(2)]
☐ Lake or Reservoir [10 CSR 20-7.015(3)]
☐ Losing [10 CSR 20-7.015(4)]
☐ Metropolitan No-Discharge [10 CSR 20-7.015(5)]
☐ Subsurface Water [10 CSR 20-7.015(7)]
☒ All Other Waters [10 CSR 20-7.015(8)]

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	Daily	Monthly	T
BOD_5	mg/L	4		15	10	45/30	Monthly	Monthly	C
TSS	mg/L	4		20	15	45/30	Monthly	Monthly	C
Escherichia coli **	#/100mL	1, 3		1030	206	***	Weekly	Monthly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	5.8		1.1	*/*	Monthly	Monthly	G
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	11.6		2.2	*/*	Monthly	Monthly	G
Oil & Grease	mg/L	1, 3	15		10	15/10	Quarterly	Quarterly	G
Total Nitrogen	mg/L	1	*		*	***	Quarterly	Quarterly	G
Total Phosphorus	mg/L	1	*		*	***	Quarterly	Quarterly	G
Cyanide, Amenable to Chlorination	µg/L	4	8.2		4.1	***	Quarterly	Quarterly	G
Cadmium, Total Recoverable	µg/L	4	*		*	***	Quarterly	Quarterly	G
Chromium III, Total Recoverable	µg/L	4	*		*	***	Quarterly	Quarterly	G
Chromium VI, Total Dissolved	µg/L	4	*		*	***	Quarterly	Quarterly	G
Copper, Total Recoverable	µg/L	4	28.1		14.0	***	Quarterly	Quarterly	G
Lead, Total Recoverable	µg/L	4	*		*	***	Quarterly	Quarterly	G
Nickel, Total Recoverable	µg/L	4	*		*	***	Quarterly	Quarterly	G
Silver, Total Recoverable	µg/L	4	*		*	***	Quarterly	Quarterly	G
Zinc, Total Recoverable	µg/L	4	*		*	***	Quarterly	Quarterly	G
Acute Whole Effluent Toxicity	TUa	1, 9	*			Pass/Fail	Once/permit cycle	Once/permit cycle	C
PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.5		9.0	6.5-9.0	Monthly	Monthly	G

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

**** - C = 24-hour composite
G = Grab
T = 24-hr. total

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

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

- **Biochemical Oxygen Demand (BOD_5).** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

- **Total Suspended Solids (TSS).** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

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

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

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

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.62 + 0.0)1.5 – (0.0 * 0.01))/0.62$
$C_e = 1.5$ mg/L

Acute WLA: $C_e = ((0.62 + 0.0)12.1 – (0.0 * 0.01))/0.62$
$C_e = 12.1$ mg/L

$LTA_c = 1.5$ mg/L (0.371) = 0.56 mg/L [CV = 2.75, 99^{th} Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.097) = 1.17 mg/L [CV = 2.75, 99^{th} Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 0.56 mg/L (10.33) = **5.8 mg/L** [CV = 2.75, 99^{th} Percentile]
AML = 0.56 mg/L (1.95) = **1.1 mg/L** [CV = 2.75, 95^{th} Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.62 + 0.0)3.1 – (0.0 * 0.01))/0.62$
$C_e = 3.1$ mg/L

Acute WLA: $C_e = ((0.62 + 0.0)12.1 – (0.0 * 0.01))/0.62$
$C_e = 12.1$ mg/L

$LTA_c = 3.1$ mg/L (0.347) = 1.08 mg/L [CV = 2.99, 99^{th} Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.093) = 1.12 mg/L [CV = 2.99, 99^{th} Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 1.08 mg/L (10.77) = **11.6 mg/L** [CV = 2.99, 99^{th} Percentile]
AML = 1.08 mg/L (2.03) = **2.2 mg/L** [CV = 2.99, 95^{th} Percentile, n =30]

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

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

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

- **Cyanide, Amenable to Chlorination.** Based on effluent testing submitted upon renewal, it has been determined that there is a reasonable potential for copper to cause a violation of instream water quality standards. Therefore, effluent limits have been established. Protection of Aquatic Life CCC = 5 µg/L, CMC = 22 µg/L, background cyanide = 0 µg/L

  Chronic WLA: $C_e = ((0.62 + 0.0)5 – (0.0 * 0.0))/0.62$
  $C_e = 5$ µg/L

  Acute WLA: $C_e = ((0.62 + 0.0)22 – (0.0 * 0.0))/0.62$
  $C_e = 22$ µg/L

  $LTA_c = 5\ (0.527) = 2.64$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 22\ (0.321) = 7.06$ µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 2.64 (3.11) = **8.2 µg/L** [CV = 0.6, 99th Percentile]
  AML = 2.64 (1.55) = **4.1 µg/L** [CV = 0.6, 95th Percentile, n = 4]

The Water Quality Based Effluent Limit for Cyanide amenable to chlorination was calculated to be 8.2 µg/L (daily maximum limit) and 4.1 µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved Cyanide amenable to chlorination methods. The Department has determined the current acceptable ML of Cyanide Amenable to Chlorination (CATC) to be 10 µg/L when using SM 4500-CN^-G. Cyanides Amenable to Chlorination after Distillation in *Standard Methods for the Examination of Water and Wastewater, 22nd*. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 10 µg/L will be considered violations of the permit and values less than the minimum quantification level of 10 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of cyanide in excess of the effluent limits stated in the permit.

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

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

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960

- **Copper, Total Recoverable**. Based on effluent testing submitted upon renewal, it has been determined that there is a reasonable potential for copper to cause a violation of instream water quality standards. Therefore, effluent limits have been established. Protection of Aquatic Life Chronic Criteria = 16.9 µg/L, Acute Criteria = 27.0 µg/L.

  Chronic = 16.9/0.960 = 17.59 µg/L
  Acute = 27.0/0.960 = 28.16 µg/L

  Chronic WLA: $C_e = ((0.62 + 0.0)17.59 – (0.0 * 0.0))/0.62$
  $C_e = 17.59$ µg/L

  Acute WLA: $C_e = ((0.62 + 0.0)28.16 – (0.0 * 0.0))/0.62$
  $C_e = 28.16$ µg/L

  $LTA_c = 17.59\ (0.527) = 9.28$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 28.16\ (0.321) = 9.04$ µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 9.04 (3.11) = **28.1 µg/L** [CV = 0.6, 99th Percentile]
  AML = 9.04 (1.55) = **14.0 µg/L** [CV = 0.6, 95th Percentile, n = 4]

- **Cadmium, Chromium III, Lead, Nickel, Silver, Zinc, Total Recoverable and Chromium VI, Total Dissolved**. Monitoring only. 40 CFR 433.17 identifies the above parameters as pollutants of concern and sets pretreatment standards for them. For discharges from Portageville, a monitoring only requirement has been established in order to collect data once SRG Global has connected.

Whole Effluent Toxicity.

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

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

Parameters Removed. Temperature monitoring was removed as there is no reasonable potential for it to cause or contribute to an instream excursion of water quality standards.

Sampling Frequency Justification:
Oil & Grease sampling frequency has been reduced to quarterly due to satisfactory facility performance. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)6.A. Acute WET Tests shall be conducted annually for facilities that have Water Quality-based Effluent Limitations for toxic substances (other than NH3). For all other parameters, sampling and reporting frequency was deemed appropriate and retained from the previous permit.

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

PERMITTED FEATURE #SM1 AND #SM2– INSTREAM MONITORING
MONITORING REQUIREMENTS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Nitrogen	mg/L	4	*		*	***	Quarterly	Quarterly	G
Total Phosphorus	mg/L	4	*		*	***	Quarterly	Quarterly	G
Total Hardness	mg/L	4	*		*	***	Quarterly	Quarterly	G

* - Monitoring requirement only.
*** - Parameter not previously established in previous state operating permit.
**** - C = 24-hour 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

PERMITTED FEATURE #SM1 AND #SM2 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

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

- **Total Hardness**. Downstream hardness monitoring has been added to the permit in order to develop a site-specific hardness for determining reasonable potential and calculating hardness-dependent metals limits.

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

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

Part VIII – Cost Analysis for Compliance

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

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

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

Part IX – Administrative Requirements

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

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit. This permit will expire in the 4th Quarter of calendar year 2020.

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

☒ - The Public Notice period for this operating permit was from January 22, 2016 – February 22, 2016. Responses to the Public Notice of this operating permit warranted the modification of effluent limits and/or the terms and conditions of this permit. The Schedule of Compliance has been adjusted to four years for both ammonia and *E. coli*. Because SRG Global will be connecting to the City before upgrades to the facility are completed, metals monitoring has been included in this renewal.

The second Public Notice period for this operating permit was from April 22, 2016 – March 23, 2016. Responses to the Public Notice of this operating permit warranted the modification of effluent limits and/or the terms and conditions of this permit. Effluent limits for chromium and nickel have been removed and a Schedule of Compliance has been established to meet copper and cyanide limits due to comments from Environmental Works.

Due to the major modifications of this permit, this operating permit was placed on Public Notice again from December 2, 2016 – January 3, 2017. No comments were received.

DATE OF FACT SHEET: JANUARY 6, 2016
REVISED DATE: APRIL 6, 2016

COMPLETED BY:

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

Appendices

APPENDIX A - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	-
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	-
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	-
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	-
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	-
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	-
Combined sedimentation/digestion	5	-
Chemical addition (except chlorine, enzymes)	4	-
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Push – button or visual methods for simple test such as pH, Settleable solids	3	-
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	-
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	-
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	-
Land Disposal – low rate	3	-
High rate	5	-
Overland flow	4	-
Total from page **ONE (1)**	----	17

APPENDIX A - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	0
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	-
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	-
Raw wastes subject to toxic waste discharge	6	-
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	-
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	-
Aerated lagoon	8	-
Advanced Waste Treatment Polishing Pond	2	-
Chemical/physical – without secondary	15	-
Chemical/physical – following secondary	10	-
Biological or chemical/biological	12	-
Carbon regeneration	4	-
DISINFECTION		
Chlorination or comparable	5	-
Dechlorination	2	-
On-site generation of disinfectant (except UV light)	5	-
UV light	4	-
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	-
Anaerobic digestion	10	-
Aerobic digestion	6	-
Evaporative sludge drying	2	-
Mechanical dewatering	8	-
Solids reduction (incineration, wet oxidation)	12	-
Land application	6	6
Total from page **TWO (2)**	----	21
Total from page **ONE (1)**	---	17
Grand Total	---	38

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

APPENDIX B – RPA RESULTS:

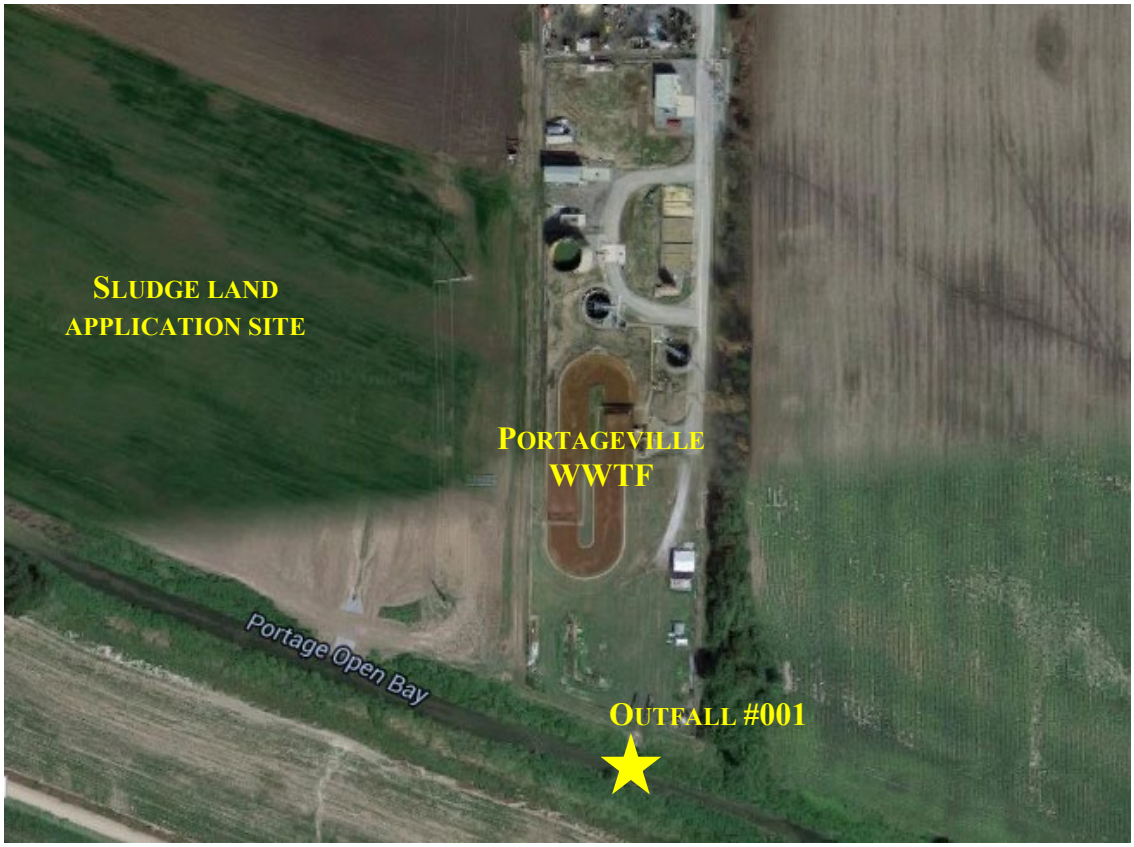
Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	8.61	1.5	8.61	30.00	4.23/0.05	2.75	2.03	YES
Total Ammonia as Nitrogen (Winter) mg/L	12.1	4.04	3.1	4.04	27.00	3.5/0.05	2.99	1.16	YES
Total Ammonia as Nitrogen (Summer) mg/L *(future)*	3.4	8.61	0.7	8.61	30.00	4.23/0.05	2.75	2.03	YES
Total Ammonia as Nitrogen (Winter) mg/L *(future)*	8.1	4.04	2.3	4.04	27.00	3.5/0.05	2.99	1.16	YES

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

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

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

APPENDIX C – OUTFALL LOCATION:



APPENDIX D – FACILITY LAYOUT:

APPENDIX E – COST ANALYSIS FOR COMPLIANCE:

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

Portageville Wastewater Treatment Facility, Permit Renewal
City of Portageville
Missouri State Operating Permit #MO-0025275

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

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

Current Facility Description: Influent lift station / screening / grit removal / oxidation ditch / 2 clarifiers / sludge holding basin / sludge is land applied

Flow evaluated: 562,000 gallons per day

Residential Connections:	1,313
Commercial Connections:	143
Industrial Connections:	1
Total Connections for this facility:	1,457

New Permit Requirements:

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

This permit also requires compliance with the following new parameters to sample quarterly: cyanide, chromium III, chromium VI, copper, lead, nickel, silver, zinc, dissolved oxygen, hardness, phosphorus, and nitrogen. There is also a requirement to perform an annual WET test.

This facility is planning on expanding the oxidation ditch to a Carrousel oxidation ditch and adding UV disinfection. This expansion is to include flows from SRG Global (MO-0001180), an industrial facility in Portageville. They will be expanding the design flow to 0.562 MGD. The size of the facility evaluated for upgrades was chosen based on this future permitted design flow.

Anticipated Costs Associated with Complying with the New Requirements:

Cost associated with disinfection:
The total present worth to add UV disinfection treatment is estimated at $853,352 (*CAPDETWORKS cost estimator was used*). This cost, if financed through user fees, might cost each household approximately $3.28 per month. Due to the design limitations in the CapDet cost estimator, the costs for disinfection have been over estimated. For any flows less than 100,000 gpd, CapDet assumes a flow of 100,000 gpd when estimating the cost for UV disinfection. The assumptions for chlorine disinfection are that the chlorine used will either be in the liquid or gas phase and not the tablets which are used by many smaller facilities.

Cost associated with ammonia limit compliance:
This facility uses an extended aeration oxidation ditch for a secondary treatment technology. Oxidation ditches have been shown capable of treating ammonia to an appropriate level for compliance. The City of Portageville commented that their oxidation ditch won't be capable of compliance with ammonia effluent limits until their upgrades are finished due to the age of the plant and the design of the aeration system at the time it was built. The Department's cost estimator is only capable of estimating the costs for total plant replacement. Because this is not the situation for Portageville WWTF, the Department is unable to estimate costs for ammonia compliance at this time. If the City would like to provide costs to the Department, we could then incorporate them into this cost analysis.

Cost associated with new sampling requirements:
The total cost estimated for new sampling requirements is $2,050 annually. This cost, if financed through user fees, might cost each household an extra $0.12[1] per month.

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

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

Current User Rates:	$9.59
Rate Capacity or Pay as You Go Option:	Pay as You Go
Municipal Bond Rating (if applicable):	permittee reported unknown
Bonding Capacity: *(General Obligation Bond capacity allowed by constitution:* *cities=up to 20% of taxable tangible property* *sewer districts or villages=up to 5% of taxable tangible property)*	$2,200,000
Current outstanding debt for the City:	permittee reported no debt
Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure:	permittee reported no debt

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

A Current Costs

Current operating costs (exclude depreciation):	$167,375
Current user rate:	$9.59

B-1 Estimated Costs for UV Disinfection

Estimated total present worth of pollution control*:	$853,352
Estimated capital cost of pollution control**:	$613,048
Annual cost of operation and maintenance***:	$19,283
Estimated resulting user cost for disinfection per household per month****:	$3.28
Estimated disinfection costs plus current user rate:	$12.87
Estimated resulting user cost per household per month plus the amount within the current user rate used toward payments on outstanding debt:	permittee reported no debt
Median household income(MHI)[2]:	$33,500
Cost per household as a percent of median household income[3]:	0.46%
Estimated cost per household per month plus the amount within the current user rate used toward payments on outstanding debt as a percent of median household income:	permittee reported no debt

CAPDET estimates the total present worth to finance a new UV disinfection system to be approximately $853,352. If financed through user costs, the future user costs have the potential to be estimated at $12.87 per month. These costs assume a 5% interest rate over 20 years. It is the Department's opinion that a UV disinfection system is the most practical treatment option for the future design flow of this facility.

* Total Present Worth includes a five percent interest rate to construct and perform annual operation and maintenance over the term of the loan.
** Capital Cost includes project costs from CapDet with design, inspection and contingency costs.
*** O&M cost shown in Table B includes operations, maintenance, materials, chemical and electrical costs for the facility on an annual basis. It includes items that are expected to replace during operations, such as pumps. O&M is estimated between 15% and 45% of the user cost.
**** The Estimated User Cost shown in Tables B-1 and B-2 is composed of two factors, Operation & Maintenance (O&M), and Debt Retirement Costs.

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

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

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

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

Metals Monitoring
Quarterly monitoring for metals will allow the Department to make a determination if there are any that could cause or contribute to an instream excursion of water quality standards.

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

The community has reported that they have no outstanding debts for the current wastewater collection and treatment systems.

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

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

Socioeconomic Data[4-6]:

Potentially Distressed Populations – City of Portageville	
Unemployment	8.4%
Adjusted Median Household Income (MHI)	$33,500
Percent Change in MHI (1990-2012)	+53.2%
Percent Population Growth/Decline (1990-2012)	-2.9%
Change in Median Age in Years (1990-2012)	+0.7
Percent of Households in Poverty	27.3%
Percent of Households Relying on Food Stamps	34.6%

Opportunity for cost savings or cost avoidance:

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

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

- The facility may propose changes to the schedule of compliance based on their own cost estimate or financial information.

- An integrated plan may be an appropriate option if they community needs to meet other environmental obligations as well as the new requirements within this permit. The integrated plan needs to be well thought out with specific timeframes built into the management plan that the municipality can reasonably commit to. The plan should be designed that will allow each municipality to meet their Clean Water Act obligations by maximizing their infrastructure improvement dollars through the appropriate sequencing of work.

- If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, the permittee may use Factor 6 of the Use Attainability Analysis (UAA) 40 CFR 131.10(g)(6) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. This process could potentially become expensive in itself.

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

The community reported a storm drainage project costing an estimated $550,000. Portageville is also upgrading to increase design flow and install UV disinfection. The costs at this time are unknown.

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

Secondary indicators for consideration:

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

* Financial Capability Indicators are specific to the State of Missouri

Financial Capability (FCI) Indicators Average Score: 1.2
Residential Indicator (RI, from Criteria #2 above): 0.4%

Financial Capability Matrix:

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

Estimated Financial Burden for UV disinfection: Medium Burden

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

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

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

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. The range covers 1,191 score points (-245 to 946).

Based on the assessment tool, the City of Portageville has been determined as a category 2 community. This means that the City of Portageville 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 the City of Portageville may face due to the necessary upgrades required to meet the new permit requirements. If your 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. At that time, please 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 and to increase monitoring.

The Department considered the eight (8) criteria presented in subsection 644.145.3 when evaluating the cost associated with the relevant actions. The Department estimates the resulting monthly user costs for installation of a UV disinfection system in order to meet new *E.coli* effluent limits could be $12.87. Using this analysis, the Department finds that a UV Disinfection system is the most practical and affordable option for your community. The construction and operation of a UV disinfection 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.

The costs for future compliance with ammonia limitations are unknown to the Department. The Department's cost estimator is only capable of estimating the costs for total plant replacement. Because this is not the situation for Portageville WWTF, the Department is unable to estimate costs for ammonia compliance at this time. If the City would like to provide costs to the Department, we could then incorporate them into this cost analysis.

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 including the Rural Population Sustainability Assessment Tool the City of Portageville has received a four (4) year schedule of compliance for the design and construction of a UV disinfection system with an expansion of the current oxidation ditch. The City commented that this is the estimated timetable for design, bidding, and construction of the new treatment system.

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

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

References:

1. http://www.hydromantis.com/
2. The Median Household Income was found using the American Community Survey by the U.S. Census Bureau
3. (12.87/(33,500/12))100 = 0.46%
4. Unemployment data was obtained from Missouri Department of Economic Development (June 2015) – http://www.missourieconomy.org/pdfs/urel1506.pdf
5. Population trend data was obtained from online at: 2012 Census Bureau Population Data - http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=table, 2000 Census Bureau Population Data - http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls, 1990 Census Bureau Population Data - http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf
6. Poverty data – American Community Survey- http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

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

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. Definitions

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

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

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

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

2. Identification of Industrial Discharges

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

3. Application Information

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

4. Notice to the Department

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

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

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

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

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

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

SECTION A – GENERAL REQUIREMENTS

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

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

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

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

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

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

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

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

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

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

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

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

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

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

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

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

SECTION H – CLOSURE REQUIREMENTS

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

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

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

SECTION I – MONITORING FREQUENCY

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

TABLE 5

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

[1] Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

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

[3] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

[4] One sample for each 1,000 dry tons of sludge.

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

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

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

RECEIVED
NOV 25 2019
Water Protection Program

34021

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

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

FOR AGENCY USE ONLY	
CHECK NUMBER	1043
DATE RECEIVED	FEE SUBMITTED
11-25-19	$200.00 BB
JET PAY CONFIRMATION NUMBER	

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

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

☐ An operating permit renewal: Permit #MO- _____ Expiration Date _____

☑ An operating permit modification: Permit #MO- 0025275 Reason: NEW WWTF IN OPERATION

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	
PORTAGEVILLE WASTEWATER TREATMENT FACILITY		573-379-3820	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
WEST MAIN AND MCCRATE AVENUE	PORTAGEVILLE	MO	63873

2.1 LEGAL DESCRIPTION (Facility Site): Sec. 36 , T 21N , R 12E COUNTY: NEW MADRID

2.2 UTM Coordinates Easting (X): +3625187 Northing (Y): -0894210
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: PORTAGE OPEN BAY

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

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

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
CITY OF PORTAGEVILLE	pvillecityclerk@sbcglobal.net	573-379-5789	
ADDRESS	CITY	STATE	ZIP CODE
301 EAST MAIN	PORTAGEVILLE	MO	63873

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

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

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

4. CONTINUING AUTHORITY: 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 PORTAGEVILLE	pvillecityclerk@sbcglobal.net	573-379-5789	
ADDRESS	CITY	STATE	ZIP CODE
301 EAST MAIN	PORTAGEVILLE	MO	63873

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)
THOMAS PENROD	OPERATIONS MANAGER	10957
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
portageville.wwt@gmail.com	573-379-5789	

6. FACILITY CONTACT

NAME	TITLE		
THOMAS PENROD	OPERATIONS MANAGER		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
portageville.wwt@gmail.com	573-379-5789		
ADDRESS	CITY	STATE	ZIP CODE
301 EAST MAIN	PORTAGEVILLE	MO	63873

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

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

FACILITY NAME	
CITY OF PORTAGEVILLE WASTEWATER TREATMENT	
PERMIT NO.	COUNTY
MO-00252775	NEW MADRID

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 milllon 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

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	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.

Flow enters the influent pump station through a 12" influent sewer. The pump station discharges to a headbox where flow is passed through an influent screen and grit removal system. Flow from the grit removal system enters the activated sludge tanks and then splits between 2 secondary clarifiers. The effluent from the secondary clarifiers are combined and passes through the UV disinfection unit and effluent parshall flume flow measurement before discharge into Portage Open Bay. Return activated sludge is pumped back to the Activated Sludge tanks. Secondary clarifier scum and waste activated sludge is pumped to the aerobic digester, where the sludge is stabilized and then pumped to the liquid sludge storage tanks for ultimate disposal on adjacent land.

Influent sampling is collected at the influent screening and grit unit
Effluent sampling is collected at the effluent parshall flume

See attached exhibit 7.1 for process flow diagram

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

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

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

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

7.4 Number of people presently connected or population equivalent (P.E.): 3200 Design P.E. 5317

7.5 Connections to the facility:

Number of units presently connected:

Residential: 1880 Commericial: _____ Industrial 1

7.6 Design Flow 561,000 GPD | Actual Flow 320,000 GPD

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

Discharge will occur during the following months: _____

How many days of the week will discharge occur? _____

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

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

1 CHROME PLATER - SRG PORTAGEVILLE

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

7.9	Does the facility accept or process leachate from landfills?:	Yes ☐	No ☑
7.10	Is wastewater land applied? **If yes**, please attach Form I See: https://dnr.mo.gov/forms/780-1686-f.pdf	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 ☑

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	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. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcdf91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8

Outfall Number 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6	S.U.	6	S.U.	211
pH (Maximum)	7	S.U.	7	S.U.	211
Flow Rate	0.4	MGD	0.3	MGD	211

*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	2	mg/L	2	mg/L	12	5210B	
	$CBOD_5$		mg/L		mg/L			
E. COLI			#/100 mL		#/100 mL			
TOTAL SUSPENDED SOLIDS (TSS)		2	mg/L	2	mg/L	12	2540D	
TOTAL PHOSPHORUS			mg/L		mg/L			
TOTAL KJELDAHL NITROGEN			mg/L		mg/L			
NITRITES + NITRATES			mg/L		mg/L			
AMMONIA AS N			mg/L		mg/L			
CHLORINE* (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN			mg/L		mg/L			
OIL and GREASE			mg/L		mg/L			
OTHER: _____			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	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 111 Actual Dry Tons/Year 45

9.3 Sludge storage provided: 24k Cubic feet; 60 Days of storage; 2 Average percent solids of sludge;

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

9.4 Type of storage:
☑ Holding Tank ☐ Building
☐ Basin ☐ Lagoon
☐ Concrete Pad ☐ Other (Describe) ____

9.5 Sludge Treatment:

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

9.6 Sludge use or disposal:

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

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

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

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

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

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

END OF PART A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	001

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Are there any municipal satellite collection systems connected to this facility? ☐ Yes ☑ No

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

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

10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) 18.2 miles

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

11. BYPASSING

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

12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

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

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

13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

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

N/A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	001

PART C – CERTIFICATION

15. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

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

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

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

16. JETPAY

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

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

17. CERTIFICATION

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

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
FLOYD SIMMONS	MAYOR

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
573-379-5789

DATE SIGNED
11/5/2019

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

Send Completed Form to:

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

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

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

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

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	001

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

20. GENERAL INFORMATION

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

☑ Yes ☐ No

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

Number of non-categorical SIUs 0 ____

Number of CIUs 1 ____

21. 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
SIEGEL-ROBERT AUTOMOTIVE; D.B.A. SRG GLOBAL, INC. - PORTAGEVILLE

MAILING ADDRESS	CITY	STATE	ZIP CODE
101 MEATTE AVENUE	PORTAGEVILLE	MO	63873

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

INJECTION MOLDING, ELECTRO PLATING AND COATING OF PLASTIC

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

Principal Product(s): CHROME PLATED PLASTIC

Raw Material(s): ABS PLASTIC

21.3 Flow Rate

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

80,000 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.

35,000 gpd ☐ Continuous ☑ Intermittent

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

a. Local Limits ☑ Yes ☐ No

b. Categorical Pretreatment Standards ☑ Yes ☐ No

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

Categorical Pretreatment Standards per NPDES permit MO-0001180

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

☐ Yes ☑ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
PORTAGEVILLE WWTF	MO- 0025275	001

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

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

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

22.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

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

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

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

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

23.4 Waste Treatment

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

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

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

If intermittent, describe the discharge schedule:

END OF PART F

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

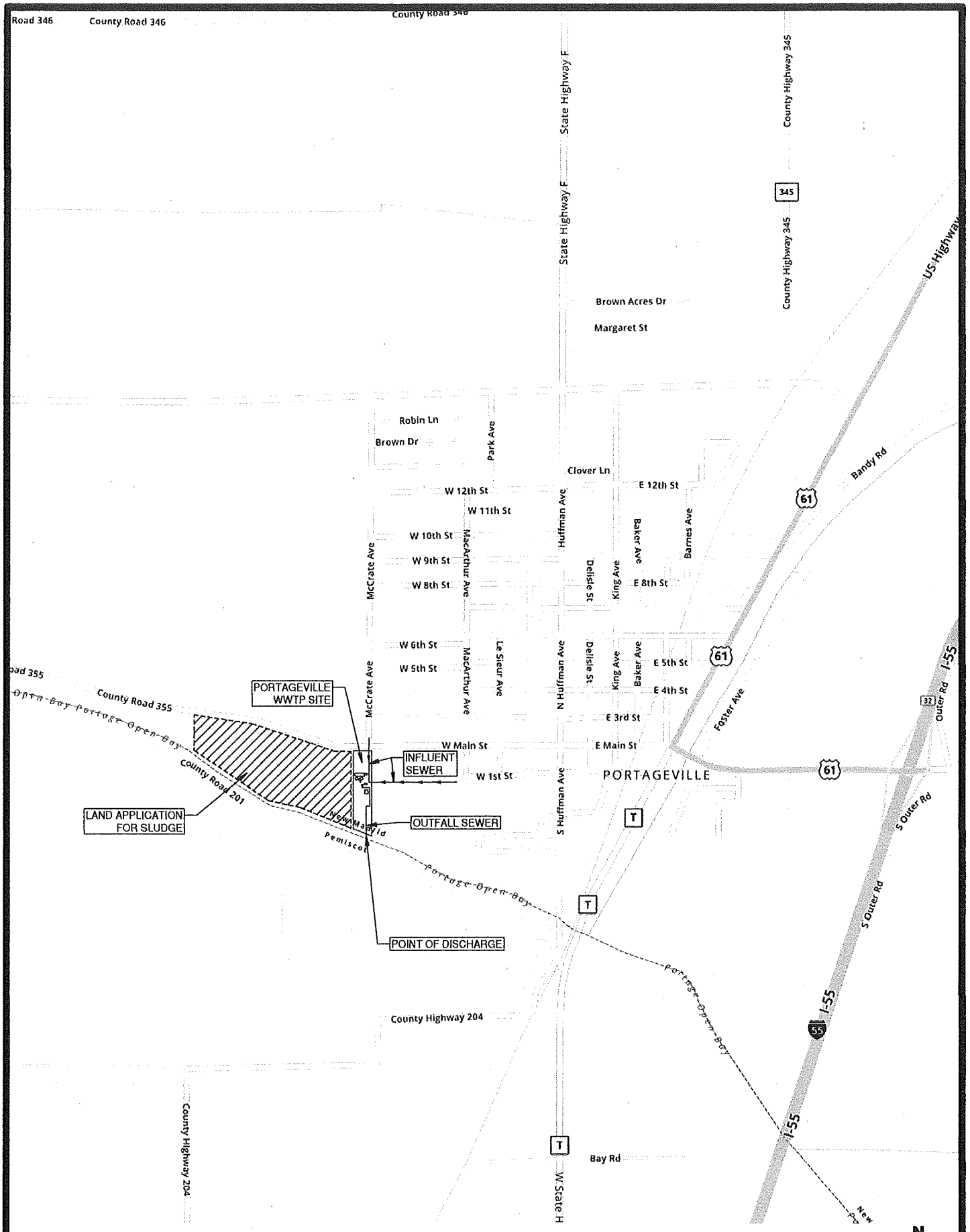
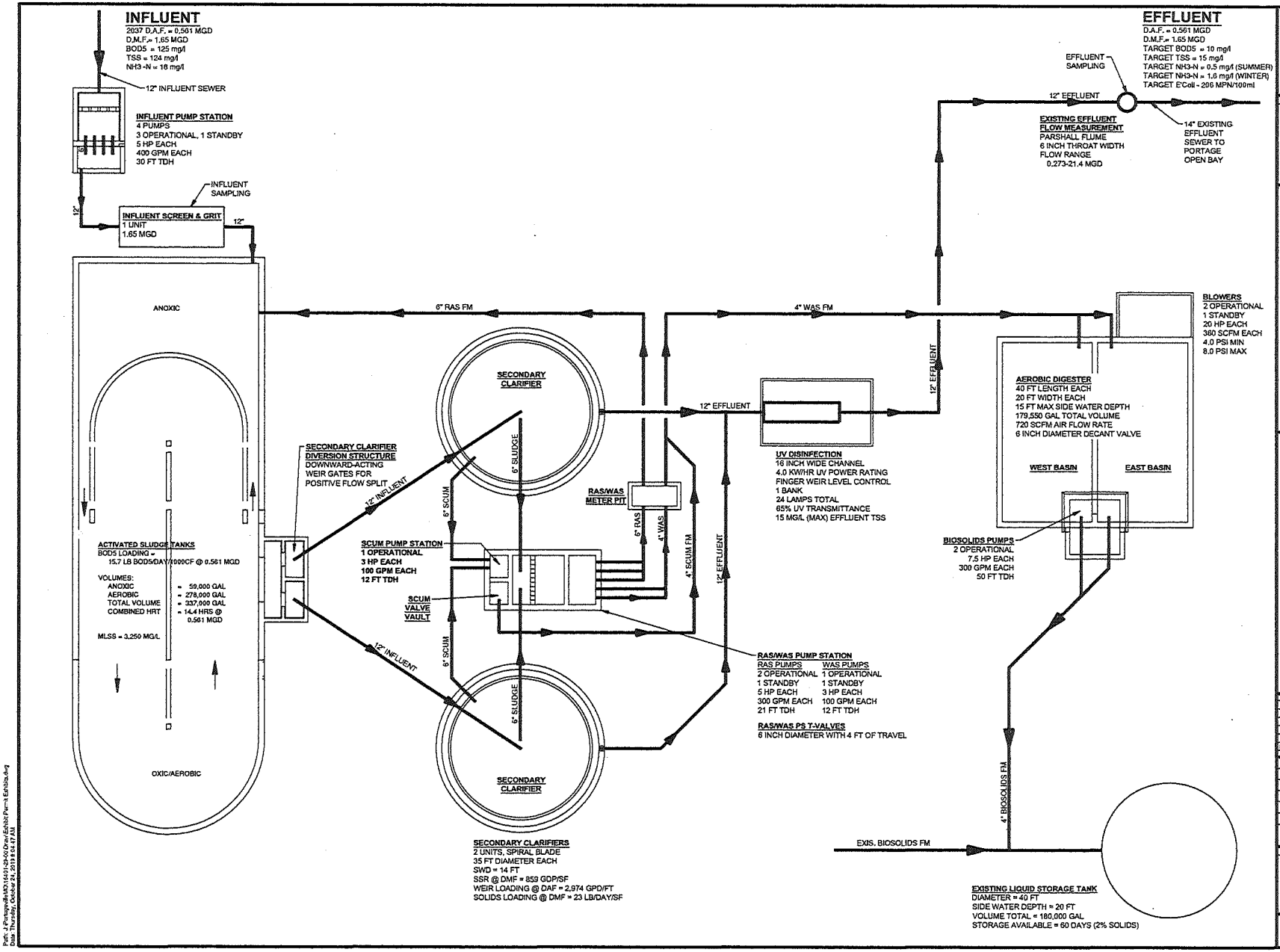


EXHIBIT 7.2 - FACILITY INFORMATION MAP

SCALE: 3" = 1 MILE

Path: J:\PortagevilleMO\16401-29-00\Draw\Exhibit\Permit Exhibits.dwg
Date: Thursday, October 24, 2019 9:07:25 AM

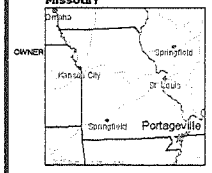


CMT

License No. 000631
CONSULTANTS

OCTOBER 2019

NEW WASTEWATER TREATMENT FACILITY



CITY OF PORTAGEVILLE
PORTAGEVILLE, MO

MARK	DATE	DESCRIPTION

PROJECT NO:	16401-29-00
CAD DWG FILE:	PERMIT EXHIBITS.DWG
DESIGNED BY:	APE
DRAWN BY:	TLL
CHECKED BY:	APE
APPROVED BY:	APE

SHEET TITLE

PROCESS FLOW DIAGRAM

EXHIBIT 7.1

SHEET 1 OF 1

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

WASTEWATER CONSTRUCTION STATEMENT OF WORK COMPLETED

RECEIVED
NOV 25 2019
Water Protection Program

PART A – BASIC INFORMATION – All applicants must complete Part A.

1. THIS FORM IS FOR:

☐ Construction is complete.

☑ Construction is substantially complete and operable. Expected date of completion: December 2019

2. ISSUANCE OF AN OPERATING PERMIT:

☑ Request issuance of the new/modified site-specific operating permit previously public noticed. MO- 0025275

☐ Request general operating permit at least 60 days prior to operation by submitting the appropriate application and fee.

MO-G_____; ☐ Form B or ☐ Form E;

☐ Appropriate fee or JetPay confirmation included with this application?

Check Number _____ JetPay confirmation number _____

☐ No issuance of a new/modified operating permit is necessary.

3. PROJECT INFORMATION

NAME OF THE PROJECT	ESTIMATED PROJECT CONSTRUCTION COST	FINAL PROJECT CONSTRUCTION COST
New Treatment Plant - Portageville WWTF	$ 4,250,000	$ TBD
CONSTRUCTION PERMIT #	**RECEIVING WASTEWATER TREATMENT FACILITY #**	**DEPARTMENT FUNDED PROJECT #**
CP 0001890	MO- 0025275	N/A

4. RECORD DRAWINGS

If construction is complete, an electronic copy of as-builts or record drawings is required and included with this form when:

☐ Non-department funded projects, in which changes from the previously submitted plans and specifications occurred.

☐ Department funded projects.

☑ N/A

5. CERTIFICATION: I hereby affirm, to the best of my knowledge and belief, based on inspections, observations, testing of the construction and upon reports submitted by others, that this wastewater project is substantially complete and operable. The construction was completed in accordance with the department's issued construction permit.

☐ Owner ☐ Owner's Designee ☑ Engineer

AUTHORIZED SIGNATURE	PRINTED NAME		DATE
Adrianne P. Eilers	Adrianne P. Eilers		11/20/19
AFFILIATION	**EMAIL ADDRESS**		**TELEPHONE NUMBER WITH AREA CODE**
Crawford, Murphy & Tilly, Inc	aeilers@cmtengr.com		314-571-9090
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
One Memorial Drive, Suite 500	St. Louis	MO	63102

Mail completed form and any attachments to one of the following:

For Non-department-Funded Projects:	For Department-Funded Projects:
MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM ATTN: ENGINEERING SECTION P.O. BOX 176 JEFFERSON CITY, MO 65102-0176	MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM ATTN: FINANCIAL ASSISTANCE CENTER P.O. BOX 176 JEFFERSON CITY, MO 65102-0176

END OF PART A.

CMT

CRAWFORD, MURPHY & TILLY
Engineers and Consultants
Gateway Tower
One Memorial Drive, Suite 500
St. Louis, MO 63102
(314) 436-5500 • (314) 436-0723 Fax

LETTER OF TRANSMITTAL

Date: 11/20/2019	Job No.: 16040129.00

Attention: Engineering Section

Re: Statement of Work Completed
City of Portageville – New Wastewater Treatment Facility

To: Missouri Department of Natural Resources
Water Protection Program – Engineering Section
P.O. Box 176
Jefferson City, Missouri 65102-0176

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☒ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Statement of Work Complete Form
1			Form B2
1			Application Fee

RECEIVED
NOV 25 2019
Water Protection Program

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☒ For review and comment ☐ _____

☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

Please review and let me know of any additional information needed. If you have any questions, please contact me at aeilers@cmtengr.com or 314-571-9090.

COPY TO File

SIGNED Adrianne P. Eilers

If enclosures are not as noted, kindly notify us at once.