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-0030970
Owner:	City of St. Peters
Address:	One St. Peters Centre Boulevard, St. Peters, MO 63376
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	St. Peters – Spencer Creek Wastewater Treatment Plant
Facility Address:	100 Ecology Drive, St. Peters, MO 63376
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 and stormwater 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.

January 1, 2017
Effective Date

Harry D. Bozoian, Director, Department of Natural Resources

December 31, 2019
Expiration Date

John Madras, Director, Water Protection Program

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "A" Operator.
Influent lift station / first flush concrete basin / four (4) earthen basins used for flow equalization or sludge storage / mechanical screening / grit removal / two (2) oxidation ditches / three (3) clarifiers / UV disinfection / reaeration tank with effluent pump station / two (2) aerated sludge holding tanks / two (2) sludge presses / sludge is composted in eight (8) aerated compost bins / "Class A" biosolids are sold and distributed from the facility / "Class B" biosolids are land applied.

Design population equivalent is 82,194.
Design flow is 9.5 MGD.
Actual flow is 5.5 MGD.
Design sludge production is 3,800 dry tons/year but may vary due to composting sludge from other wastewater plants.

Legal Description:	Land Grant 1799, St. Charles County
UTM Coordinates:	X= 707945, Y= 4297652

Receiving Stream and ID:	Spencer Creek (C) (3960)
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.:	(07110009-0105)

Permitted Feature #SM1 – Instream Monitoring
Instream monitoring location – Upstream – See Special Condition #28

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, 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
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		22	15	once/week	composite**
Total Suspended Solids	mg/L		33	18	once/week	composite**
E. coli (Note 1)	#/100mL		1030	206	once/week	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	5.5 12.1		1.0 2.4	once/week	grab
Oil & Grease	mg/L	15		10	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2017. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Total Phosphorus	mg/L	*		*	once/quarter****	grab
Total Nitrogen	mg/L	*		*	once/quarter****	grab
Chloride	mg/L	*		*	once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2017.						
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units ***	SU	6.5		9.0	once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE FEBRUARY 28, 2017.						

* 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 below for quarterly sampling requirements.

Minimum Sampling Requirements			
Quarter	**Months**	**Total Phosphorus, Total Nitrogen, and Chloride**	**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).

OUTFALL #001	TABLE A-2 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 **January 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 (Note 2)	TU_a	*			once/year	composite**
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2018.						
Chronic Whole Effluent Toxicity (Note 3)	TU_c	*			once/permit cycle	composite**
WET TEST REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE JANUARY 28, 2019.						

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 **January 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 FIRST REPORT IS DUE FEBRUARY 28, 2017.			

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

Note 2 – The Acute WET test shall be conducted once per year during the 1st and 3rd year of the permit cycle. See Special Condition #23 for additional requirements.

Note 3 –The Chronic WET test shall be conducted during the 2nd year of the permit cycle. See Special Condition #24 for additional requirements.

PERMITTED FEATURE #SM1	TABLE C INSTREAM MONITORING REQUIREMENTS					
The monitoring requirements shall become effective on **January 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
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2017.						

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

Minimum Sampling Requirements			
Quarter	**Months**	**Total Nitrogen & Total Phosphorus**	**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.

E. SPECIAL CONDITIONS (continued)

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. This facility currently has an approved pretreatment program.

   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. Water Quality Standards
   (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) 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;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) 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.

7. 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.

E. SPECIAL CONDITIONS (continued)

8. 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).

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

10. 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.

11. 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 Department via eDMR 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.

12. 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 St. Louis 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.

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

14. 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.

15. 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.

E. SPECIAL CONDITIONS (continued)

16. 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.

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

18. 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.

19. 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.

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

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

22. Discharge Monitoring Reports
    (a) All reports and results required to be submitted by the permit, excluding 24-hr. bypass reporting, must be submitted to the Department via the electronic Discharge Monitoring Report Submission System (eDMR). In regards to Standard Conditions Part I, Section B, #7, the eDMR data reporting system is the only Department approved reporting method for this permit.
    (b) To access the eDMR data reporting system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.

23. 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), Chloride (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.

E. SPECIAL CONDITIONS (continued)

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

25. Stormwater Pollution Prevention Plan:
   Facility SIC codes found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) shall implement a SWPPP and must be prepared and implemented within 180 days of issuance. The SWPPP must be kept on-site and should not be sent to the department unless specifically requested. The SWPPP must be reviewed and updated every five (5) years or as site conditions change (see Rationale and Derivation: antidegradation analysis and SWPPP in the fact sheet). The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in February 2009 (www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf). The SWPPP must include:
   (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater. The BMPs should be designed to treat the stormwater up to the 10 year, 24 hour rain event.
   (b) For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. Failure to implement and maintain the chosen BMP is a permit violation. For further guidance, consult the antidegradation implementation procedure at http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf .
   (c) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
      i. Operational deficiencies must be corrected within seven (7) calendar days.
      ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
      iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including the general timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
      iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
      v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department and EPA personnel upon request.
   (d) A provision for designating an individual to be responsible for environmental matters.
   (e) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.

E. SPECIAL CONDITIONS (continued)

26. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
    (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
    (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
    (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
    (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
    (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property to comply with general water quality criteria, effluent limits, or benchmarks. This could include the use of straw bales, silt fences, or sediment basins, if needed.
    (f) Ensure adequate provisions are provided to prevent surface water intrusion into the storage basin, to divert stormwater runoff around the storage basin, and to protect embankments from erosion.

27. Sewer Extension Authority Supervised Program:
    The Department approved the Sewer Extension Authority Supervised Program for the City of St. Peters to regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility. The City of St. Peters shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. This approval may be modified or revoked by the Department if the wastewater collection, transportation, or treatment facilities reach their design capacity, if the treatment facility falls into chronic noncompliance with the permit, or if the permittee fails to follow the terms and conditions of the submitted and approved program.

    This permit may be reopened and modified or alternatively revoked and reissued to incorporate new or modified conditions to the Sewer Extension Authority Supervised Program, if information indicates changes are necessary to assure compliance with Missouri's Clean Water Law and associated regulations. When any of the above mentioned conditions occur, the permittee will be notified prior to any modifications of this permit condition. Plans and specifications for all projects which include a proposed sanitary sewer overflow must be submitted to the Department to provide record information for location and size of the sanitary sewer overflow.

    An annual report on the Sewer Extension Authority Supervised Program must be submitted by January 28 of each year to the Missouri Department of Natural Resources' Water Protection Program's Engineering Section.

    The Department's Water Protection Program's Engineering Section will reevaluate the City's Sewer Extension Authority Supervised Program for reauthorization when they file an application for permit renewal to determine if it is current, complete, and meets the requirements of 10 CSR 20-8 Design Guides. Once the Sewer Extension Authority Supervised Program is reauthorized or denied, this condition will be updated accordingly.

28. The permittee shall continue to 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.

E. SPECIAL CONDITIONS (continued)

29. Receiving Water Monitoring Conditions
   (a) In-stream receiving water samples should be taken at the location(s) specified on Page 2 of this permit. 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) Please contact the Department if you need additional instructions or assistance.

30. Biosolids Composting Requirements for General Public Use:
   (a) Applicability. A sewage sludge compost product will be considered suitable for general public use when the permittee meets the requirements under this permit special condition. General public use means the compost is for crops and vegetation including use in residential areas, public use areas and for horticulture, silviculture and agricultural uses.
   (b) Composting Facility Description.
      (1) Composting must be conducted on an impermeable base, which may be made of asphalt, concrete, compacted earth, or other materials and shall comply with the permeability limitations under 10 CSR 20-8.020(13)(A)4.
      (2) Raw materials will consist of dewatered sewage sludge or biosolids, wood chips, yard waste or other compostable materials.
   (c) If the compost is to be distributed to the public it shall meet the Class A requirements for pathogen reduction by having undergone one of the Processes to Further Reduce Pathogens found in Appendix B of 40 CFR 503.
   (d) The permittee will maintain a detailed operations plan for the composting process.
   (e) Information Sheet for Users.
   An information/instruction sheet shall be provided to each user of compost to provide information on the origin of the compost, appropriate application rates, and other pertinent information for proper handling and use of the compost.
   (f) Annual Use Rate. Compost that is land applied by the permit holder shall not exceed the most restrictive of the following criteria:
      (1) Application rates shall not exceed the annual plant available nutrient requirements for nitrogen and phosphorus based on the vegetation to be grown, a realistic crop yield goal, soil testing results and testing of the compost for nutrient content.
      (2) Application rate shall not exceed 20 dry tons per acre per year.
   (g) One Time or Occasional Use Rates.
   Compost that is used by the permit holder for soil amendments or land reclamation shall not exceed a total of 200 dry tons per acre on either a one time basis or a cumulative total over a five year period. Subsequent application rates shall not exceed the annual use rate listed above. The compost shall be incorporated into the soil by tillage practices as soon as practical after application.
   (h) Final Compost Monitoring.
   Composite samples of the final compost product shall be collected at representative locations and monitored as described in 40 CFR 503 and Standard Conditions Part III.
   (i) Records and Reporting Requirements.
      (1) Time, locations and results shall be recorded for each monitoring requirement and maintained for at least five years. Copies of these records shall be made available to the Department upon request.
      (2) The total quantity of compost distributed during the year must be recorded.
      (3) An annual report shall be submitted by January 28 summarizing compost activities monitoring. A copy of the individual laboratory reports and daily records need not be submitted unless requested by the Department. The reports shall be submitted to the Department via eDMR and to the EPA Region VII office as part of the annual sludge report.
   (j) Composted sewage sludge that does not meet the requirements for general public use may still be land applied in accordance with permit Standard Conditions Part III.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0030970
ST. PETERS – SPENCER CREEK WASTEWATER TREATMENT PLANT

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 Major.

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description:
Influent lift station / first flush concrete basin / four (4) earthen basins used for flow equalization or sludge storage / mechanical screening / grit removal / two (2) oxidation ditches / three (3) clarifiers / UV disinfection / reaeration tank with effluent pump station / two (2) aerated sludge holding tanks / two (2) sludge presses / sludge is composted in eight (8) aerated compost bins / “Class A” biosolids are sold and distributed from the facility / “Class B” biosolids are land applied.

Application Date: 11/12/15
Expiration Date: 05/12/16

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	14.7	Secondary	Municipal

Facility Performance History:
This facility was last inspected on October 8, 2014. The inspection showed the following unsatisfactory feature: the hydrants near wastewater equipment did not have “non-potable water” signs. A review of the past five years of monitoring data submitted by the permittee shows the following exceedances (month/year): BOD_5 – 8/12, 4/14; *E. coli* – 8/12, 4/14; ammonia – 8/12; TSS – 4/14.

Comments:
Changes in this permit include the addition of chloride, total phosphorus, total nitrogen, and chronic whole effluent toxicity monitoring. It includes the removal of dissolved oxygen effluent limits. 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, Stormwater Pollution Prevention Plan requirements, and chronic WET testing 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
- ☐ - Federal agency
- ☐ - County
- ☐ - Public Sewer District
- ☐ - State agency
- ☐ - Private Sewer Company regulated by the Public Service Commission
- ☐ - Public Water Supply Districts

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

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

Operator's Name: Robert Hamlin
Certification Number: 1737
Certification Level: A

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

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	AQL, WBC-B, SCR, HHP, IRR, LWW	07110009-0105	Direct Discharge

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

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

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

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

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

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = Whole body contact recreation that supports swimming uses and has public access;
WBC-B = Whole body contact recreation that supports swimming;
SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

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

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

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

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

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM (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:
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.

Receiving Water Body's Water Quality
A stream survey was conducted on September 28, 2010. The following observations were made 100 yards below this facility's outfall, "excessive algae, stream flow 25 cfs, effluent flow 7.5 cfs, minnows, sunfish, bass, unionid clams, leeches, crayfish, and odonata".

This facility discharges to Spencer Creek 8-20-13 MUDD V1.0 (C) (3960) which flows 0.3 miles to Spencer Creek (C) (224). Spencer Creek is on the Missouri 2014 303(d) list for chloride. St. Peters – Spencer Creek WWTP is listed as a potential source.

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.

- Dissolved Oxygen effluent limits have been removed from this permit. The past five years of monitoring data submitted by the permittee has been assessed and it was determined that the facility has no reasonable potential to cause or contribute to an instream excursion of water quality standards.
- 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)], for domestic wastewater discharge with new, altered, or expanding discharges, the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the department prior to establishing, altering, or expanding discharges. See http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm

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

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

☒ - The facility must review and maintain stormwater BMPs as appropriate.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(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 has and a Department approved biosolids management plan, and is authorized to land apply biosolids in accordance with Standard Conditions III. The permittee has not land applied biosolids since 2009.

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 currently using the eDMR data reporting system.

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

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

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

☒ - 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 – 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.

☒ - This permit does not contain a SOC.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:

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

☒ - The permittee's Sewer Extension Authority Supervised Program is currently under review. The department is reevaluating the permittee's Sewer Extension Authority Supervised Program to determine if it is current, complete, and meets the requirements of 10 CSR 20-8 Design Guides. Once the Sewer Extension Authority Supervised Program is reauthorized or denied by the department, the operating permit will be updated accordingly.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

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

☒ - 10 CSR 20-6.200 and 40 CFR 122.26 includes treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that is located within the confines of the facility, with a design flow of 1.0 mgd or more, or are required to have an approved pretreatment program under 40 CFR part 403, as an industrial activity in which permit coverage is required.

In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan. A facility can apply for conditional exclusion for "no exposure" of industrial activities and materials to stormwater by submitting to the Department a completed NPDES Form 3510-11 – No Exposure Certification for Exclusion from NPDES Stormwater Permitting. That document and additional information may be found at http://water.epa.gov/polwaste/npdes/stormwater/Conditional-No-Exposure-Exclusion.cfm. Upon approval of the "No Exposure", the permit can be modified to remove the SWPPP requirements. If the facility chooses to retain the conditional exclusion for "no exposure", the facility is required to renew the "No Exposure" exemption during the permit renewal period by submitting NPDES Form 3510-11 with Form B2.

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 including model was submitted to the Department by Black and Veatch. The consultant used the USEPA water quality model QUAL2K to model the impact of the discharge on the receiving stream. Please see Appendix – Water Quality Review Sheet for further information.

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

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

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

- ☒ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility 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 $\geq$ 22,500 gpd.
- ☐ Other – please justify.

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

☒ - This facility does not anticipate bypassing.

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

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

☒ - This facility discharges to Spencer Creek 8-20-13 MUDD V1.0 (C) (3960) which flows 0.3 miles to Spencer Creek (C) (224). Spencer Creek is on the Missouri 2014 303(d) list for chloride. This facility is considered to be a source of or has the potential to contribute to the impairment. Once a TMDL is developed, the permit will be modified to include WLAs from the TMDL.

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 – 5.5 mg/L daily maximum, 1.0 mg/L monthly average.
Winter – 12.1 mg/L daily maximum, 2.4 mg/L monthly average.

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

Summer – 2.6 mg/L daily maximum, 0.5 mg/L monthly average.
Winter – 9.2 mg/L daily maximum, 1.8 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	6		22	15	22/15	Weekly	Monthly	C
TSS	mg/L	6		33	18	33/18	Weekly	Monthly	C
Escherichia coli **	#/100mL	1, 3		1030	206	1030/206	Weekly	Monthly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	5.5		1.0	5.8/1.3	Weekly	Monthly	G
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	12.1		2.4	*/*	Weekly	Monthly	G
Oil & Grease	mg/L	1, 3	15		10	15/10	Monthly	Monthly	G
Total Nitrogen	mg/L	1	*		*	***	Quarterly	Quarterly	G
Total Phosphorus	mg/L	1	*		*	***	Quarterly	Quarterly	G
Chloride	mg/L	7	*		*	***	Quarterly	Quarterly	G
Acute Whole Effluent Toxicity	TUa	1, 9	*			Pass/Fail	Annually	Annually	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***	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	Weekly	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 limits that were established in the 2008 Water Quality Review Sheet have been reassessed and verified that they are still protective of water quality; therefore, effluent limits have been retained from the previous state operating permit. See Appendix – Water Quality Review Sheet for further information.

- **Total Suspended Solids (TSS).** Effluent limits that were established in the 2008 Water Quality Review Sheet have been reassessed and verified that they are still protective of water quality; therefore, effluent limits have been retained from the previous state operating permit. See Appendix – Water Quality Review Sheet for further information.

- ***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 = 5th root of (1)(4)(6)(10)(5) = 5th 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 = ((14.7 + 0.0)1.5 – (0.0 * 0.01))/14.7
C_e = 1.5 mg/L

Acute WLA: C_e = ((14.7 + 0.0)12.1 – (0.0 * 0.01))/14.7
C_e = 12.1 mg/L

LTA_c = 1.5 mg/L (0.337) = 0.51 mg/L [CV = 3.10, 99th Percentile, 30 day avg.]
LTA_a = 12.1 mg/L (0.091) = 1.10 mg/L [CV = 3.10, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 0.51 mg/L (10.95) = **5.5 mg/L** [CV = 3.10, 99th Percentile]
AML = 0.51 mg/L (2.07) = **1.0 mg/L** [CV = 3.10, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: C_e = ((14.7 + 0.0)3.1 – (0.0 * 0.01))/14.7
C_e = 3.1 mg/L

Acute WLA: C_e = ((14.7 + 0.0)12.1 – (0.0 * 0.01))/14.7
C_e = 12.1 mg/L

LTA_c = 3.1 mg/L (0.476) = 1.48 mg/L [CV = 1.94, 99th Percentile, 30 day avg.]
LTA_a = 12.1 mg/L (0.119) = 1.44 mg/L [CV = 1.94, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 1.44 mg/L (8.39) = **12.1 mg/L** [CV = 1.94, 99th Percentile]
AML = 1.44 mg/L (1.66) = **2.4 mg/L** [CV = 1.94, 95th 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.

- **Chloride**. Monitoring only to determine if a reasonable potential exists to violate water quality standards. This facility discharges to Spencer Creek 8-20-13 MUDD V1.0 (C) (3960) which flows 0.3 miles to Spencer Creek (C) (224). Spencer Creek is on the Missouri 2014 303(d) list for chloride. St. Peters – Spencer Creek WWTP is listed as a potential source.

- **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.

- **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%.

- **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.

  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**. Dissolved Oxygen effluent limits have been removed from this permit. The past five years of monitoring data submitted by the permittee has been assessed and it was determined that the facility has no reasonable potential to cause or contribute to an instream excursion of water quality standards.

Sampling Frequency Justification:
The sampling and reporting frequencies for all parameters have been reassessed. BOD_5, TSS, ammonia, and pH sampling frequencies have been adjusted from four times a week to weekly due satisfactory facility performance and the low variability in effluent data reported to the Department. New parameters for phosphorus, nitrogen, and chloride have been set at quarterly. Chronic WET testing shall be conducted no less than once per permit cycle for facilities designated as "major". The sampling and reporting frequencies for all other parameters have been found to be appropriate; therefore, is has been 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, Chloride, 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, Chloride, Total Nitrogen, and Total Phosphorus samples must be immediately preserved, these samples are to be collected as a grab.

PERMITTED FEATURE #SM1 – INSTREAM MONITORING (UPSTREAM)
MONITORING REQUIREMENTS TABLE:

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

* - Monitoring requirement only.
*** - Parameter was not previously established in previous state operating permit.
**** - 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 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

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

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

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

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 – 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 2019.

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

☒ - The Public Notice period for this operating permit was from September 23, 2016 – October 24, 2016. No comments were received.

DATE OF FACT SHEET: JULY 27, 2016

COMPLETED BY:

ANGELA FALLS, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	8
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	10
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)**	----	35

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	-
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	2
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	-
Raw wastes subject to toxic waste discharge	6	-
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	-
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	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	4
SOLIDS HANDLING – SLUDGE		
Solids Handling Thickening	5	-
Anaerobic digestion	10	-
Aerobic digestion	6	6
Evaporative sludge drying	2	-
Mechanical dewatering	8	8
Solids reduction (incineration, wet oxidation)	12	-
Land application	6	6
Total from page **TWO (2)**	----	41
Total from page **ONE (1)**	---	35
Grand Total	---	76

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

APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	109.35	1.5	109.35	29.00	15.4/0.01	3.10	7.10	YES
Total Ammonia as Nitrogen (Winter) mg/L	12.1	43.27	3.1	43.27	30.00	9/0.01	1.94	4.81	YES
Total Ammonia as Nitrogen (Summer) mg/L *(future)*	3.4	109.35	0.7	109.35	29.00	15.4/0.01	3.10	7.10	YES
Total Ammonia as Nitrogen (Winter) mg/L *(future)*	8.1	43.27	2.3	43.27	30.00	9/0.01	1.94	4.81	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 – FACILITY LAYOUT:

Influent lift station / first flush concrete basin / four (4) earthen basins used for flow equalization or sludge storage / mechanical screening / grit removal / two (2) oxidation ditches / three (3) clarifiers / UV disinfection / reaeration tank with effluent pump station / two (2) aerated sludge holding tanks / two (2) sludge presses / sludge is composted in eight (8) aerated compost bins / "Class A" biosolids are sold and distributed from the facility / "Class B" biosolids are land applied.

APPENDIX – COST ANALYSIS FOR COMPLIANCE:

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

St. Peters – Spencer Creek WWTP, Permit Renewal
City of St. Peters
Missouri State Operating Permit #MO-0030970

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 is required to issue a permit with final effluent limits in accordance with 644.051.1.(1) RSMo, 644.051.1.(2) RSMo, and the Clean Water Act. The practical result of this analysis is to incorporate a compliance schedule into the permit in order to mitigate adverse impact to distressed populations resulting from new costs for the wastewater treatment facility.

Facility Description: Influent lift station / flow equalization first flush concrete basin / three (3) earthen basins used for flow equalization or sludge storage / mechanical screening / grit removal / two (2) oxidation ditches / three (3) clarifiers / UV disinfection / reaeration tank / two (2) aerated sludge holding tanks / two (2) sludge presses / sludge is composted in eight (8) aerated compost bins / "Class A" sludge sold and distributed from the facility / "Class B" sludge is land applied.

Residential Connections:	18,475
Commercial Connections:	916
Industrial Connections:	3
Total Connections for this facility:	19,394

New Permit Requirements:

The permit requires compliance with new monitoring requirements for chloride, total nitrogen, and total phosphorus. A chronic Whole Effluent Toxicity (WET) test is required once per permit cycle and there is a requirement to develop and implement a Stormwater Pollution Prevention Plan (SWPPP).

Anticipated Costs Associated with Complying with the New Requirements:

The total cost estimated for new quarterly monitoring requirements is $812 annually. A chronic WET test is estimated at $1,550 or $310 annually over five years. The Department estimates the cost to develop and implement a SWPPP to be $10,000 or $2,000 annually over five years. This cost covers a $20/hour employee working 500 hours. These costs totaled amount to $3,122 annually. This cost, if financed through user fees, might cost each household an extra $0.01[1] per month. A community sets their user rates based on several factors. The percentage of the current user rate that is available to cover new debt is unknown to the Department.

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

Due to the minimal cost associated with this new permit requirement, the Department anticipates the City of St. Peters has the means to raise $3,122 annually.

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

The total cost estimated for the new permit requirements is $3,122 annually. This cost, if financed through user fees, might cost each household an extra $0.01 per month. This would make the additional cost per household as a percent of median household income (MHI) 0.00%[2] based on the City's MHI of $72,610. Due to the minimal cost associated with this new requirement, the Department anticipates an extremely low to no rate increase will be necessary that could impact individuals or households of the community.

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

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

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

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

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

The community did not provide the Department with information, nor could it be found through readily available data. The monthly user rate for 5,000 gallons is $15.78.

(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[3-6]:

Potentially Distressed Populations – City of St. Peters	
Total Population (2013)	53,589
Unemployment	3.2%
Adjusted Median Household Income (MHI)	$72,610
Percent Change in MHI (2000-2012)	+25.4%
Percent Population Growth/Decline (2000-2012)	+4.4%
Median Age in Years	38.6
Percent of Households in Poverty	3.4%
Percent of Households Relying on Food Stamps	4.1%

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

The community reported working on several stormwater projects totaling $30,983,633 from FY13 – FY20.

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

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

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

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

Conclusion and Finding

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

The Department estimates the cost for new permit requirements is $3,122 per year. Should these additional costs be financed through user fees, it may require user fees 0.000% of the community's MHI.

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

References:

1. (($3,122/19,394 connections)/12 months) = $0.01
2. ($0.01/($72,610/12))*100 = 0.000%
3. Unemployment data was obtained from Missouri Department of Economic Development (July 2014) – http://www.missourieconomy.org/pdfs/urel1407.pdf
4. Median Household Income data from American Community Survey – Median income in the past 12 months – http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=table
5. Population trend data was obtained from online at: 2012 Census Bureau Population Data - http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?fpt=table, 2000 Census Bureau Population Data - http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls, 1990 Census Bureau Population Data - http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf
6. Poverty data – American Community Survey- http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

APPENDIX – WATER QUALITY REVIEW SHEET:

Missouri Department of Natural Resources
Water Protection Program
NPDES Permits and Engineering Section

Water Quality Review Sheet

Determination of Effluent Limits and Monitoring Requirements

FACILITY INFORMATION

FACILITY NAME: St. Peters, Spencer Creek STP NPDES #: MO-0030970

FACILITY TYPE/DESCRIPTION: Design flow will be 9.5 MGD. Plant will expand from 6.9 mgd to 9.5 mgd. Expansion includes the addition of a new final clarifier and disinfection facility. Treatment will be activated sludge/ aerobic digestion and ultraviolet disinfection.

EDU*: Plains/MS Tribs btwn Des Moines and MO Rivers/ Des Moines Drainage 8- DIGIT HUC: 07110009 COUNTY: St. Charles

* - Ecological Drainage Unit

LEGAL DESCRIPTION: SE ¼, NE ¼, Sec. 30, T47N, R4E LATITUDE/LONGITUDE: 3848112/-09036192

WATER QUALITY HISTORY: DMR data indicated that St. Peters, Spencer Creek STP has in the past violated the permit limits. During the last 5 years, the facility performed as follows:
1. Exceeded its design flow 68% of the time [current DQ = 6.9 MGD]
2. Exceeded its BOD limit 18% of the time [12 violations, last 2 in 2008]
3. Exceeded its TSS limit 22.7% of the time [15 violations, last 2 in 2008]

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	14.7	Secondary	Spencer Creek	0.0
002	-	Stormwater Detention Basin (eliminated)	Unnamed trib to Spencer Creek	-

RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Spencer Creek	C	0224	0.0	0.0	0.1	LWW, AQL

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

COMMENTS:
No Geohydrological evaluation was submitted with the request. Our GIS indicated the Spencer Creek is gaining. Map of the discharge location (Appendix A) show that the distance to Dardenne Creek is 1.6 miles. Black and Veatch submitted Streeter-Phelps dissolved oxygen (DO) modeling inputs and outputs with a brief description of the model scenario. Black and Veatch used the new facility design flow of 14.7 cfs. The critical DO concentration was well below the DO water quality standard of 5.0 mg/L for distance of 8 miles before it recovered. A plot of distance versus DO concentrations indicated this recovery took place in Dardenne Creek (P). Streeter-Phelps modeling is only a screening tool for DO water quality analysis. When the Streeter-Phelps modeling indicates that DO concentrations fall below the appropriate water quality standard at the downstream regulatory point of compliance, then a more sophisticated model such as the Environmental Protection Agency's QUAL2K model should be used to derive appropriate effluent limits. The Water Quality Monitoring and Assessment Section (WQMAS) reviewed the

City of St. Peters, Spencer Creek WWTF
August 19, 2008
Page 2

Qual2K model results and input parameters (See Appendix B: Qual2K Summary Letter). After reviews of the submittals, WQMAS did not approve Q2K results because:

1. Despite using an oxidation rate of 0.4 /day of biochemical oxygen demand (BOD) (almost twice as much as the default value of 0.23 used for similar streams), only 16% of BOD were oxidized in Spencer Creek resulting in a loading of Dardenne Creek with a 30 mg/L of BOD [2349 pounds per day]. This low BOD degradation maintained a *theoretical* dissolved oxygen concentration above 5 mg/L in Spencer Creek.
2. Because there are no data to support the modeling assumptions on BOD degradation (DO consumption), the model is un-calibrated and cannot predict water quality is Spencer Creek with any certainty.

Department staff, after discussion with the permittee and their consultants, decided to approve the expansion with the following conditions:

1. Allow the increase of effluent flow from 6.9 to 9.5 MGD.
2. Maintain the current loading of BOD, TSS and Ammonia constant - this will reduce their concentrations.
3. Require the permittee to develop and submit Quality Assurance Project Plan (QAPP) by February 2009. Black and Veatch will propose an instream study that is partially described in the Receiving Water Monitoring Requirements subsection below.
4. Require the permittee to collect data, model the stream, and submit results no later than six months prior to the renewal of the operating permit.

Note: The limits and requirements in this review sheet are contingent upon receiving a QAPP by February 2009.

Ultraviolet disinfection is proposed. If ultraviolet disinfection is not used then total residual chlorine (TRC) limits will have to be developed

ANTIDEGRADATION POLICY

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the department is to develop 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 (depending on the rulemaking process), a facility will be required to use *Missouri's Antidegradation Rule and Implementation Procedure*. This procedure will be applicable to new and expanded wastewater facilities. If the facility submits a complete construction permit application prior to August 29, 2008, no antidegradation review is required.

GENERAL ASSUMPTIONS OF THE WATER QUALITY REVIEW SHEET

1. A Water Quality Review Sheet (WQRS) assumes that [10 CSR 20-6.010(3) Continuing Authorities] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQRS 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 WQRS 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 supercede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQRS 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 WQRS may change as Water Quality Standards, Methodology, and Implementation procedures change.

8. Nothing in this WQRS removes any obligations to comply with county or other local ordinances or restrictions.

Mixing Considerations

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

$$AEC\% = \left(\frac{100}{DilutionRatio + 1}\right)$$

Permit Limits and 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

OUTFALL #001

Wet Test (Y or N): Y Frequency: Twice/Year AEC: 100% Method: Single

Parameter	Daily Maximum	Weekly Average	Monthly Average	WQBEL (Note 2)	Monitoring Frequency
Flow	*		*	N/A	Once/Day
BOD_5 (mg/L)		22	15	FSR	Four/Week
TSS (mg/L)		33	18	FSR	Four/Week
pH (S.U.)	6.0 – 9.0		6.0 – 9.0	FSR	Four/Week
Temperature (°C)	*		*	N/A	Four/Week
Ammonia as N (mg/L) (May 1 – Oct 31)	1.2		0.6	Y	Four/Week
Ammonia as N (mg/L) (Nov 1 – Apr 30)	2.0		1.0	Y	Four/Week
Esherichia coliform (E. coli)	Please see the E. coli discussion in the Derivation & Discussion of Limits section of this WQRS below.				
Fecal Coliform (Note 1)	1000		400**	FSR	Four/Week
Oil & Grease (mg/L)	15		10	FSR	Four/Week

* - Monitoring requirements only.
** - The Monthly Average for Fecal Coliform shall be reported as a Geometric Mean.
Note 1 – Colonies/100 mL
Note 2 – This field informs the applicant if the parameter's effluent limitation is a Water Quality Based Effluent Limitation (WQBEL): Y – Yes; FSR – Federal/State Regulation; and N/A – Not Applicable. Also, please see the **General Assumptions of the WQRS #4 & #5.**

Receiving Water Monitoring Requirements

Receiving water monitoring requirements are recommended at this time. The Water Quality Monitoring and Assessment Section requires a quality assurance project plan (QAPP) for instream studies of this nature. The object of the study will be to ensure that the current effluent limits are protective of the stream water quality standards for dissolved oxygen. In general, the study should consist of two 48-hour waste load allocation studies at designated stream locations. Waste load allocations studies assist in better defining water quality problems in localized, site-specific areas and in selection of appropriate controls. The tentative plan is for the sampling to commence next summer. The QAPP should be submitted for approval within six months of receiving this review sheet. At least 6 months before the permit expires, MDNR should have received and approved model results from the waste load allocation study.

DERIVATION AND DISCUSSION OF LIMITS

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

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

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

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute waste load 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).

Outfall #001 – Main Facility Outfall

- **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).** The current permit has 20 mg/L monthly average, 30 mg/L weekly average. City of St. Peters agreed to maintain the current loading with a downward adjustment of concentration because BOD consumes DO during decay. The limits for the expansion will be 15 mg/L monthly average, 22 mg/L weekly average.
  Using the above effluent limits, we converted effluent limit in concentration units to load in mass units at the current design flow. This load can be then used to determine limits in concentration units for the new design flow. *See calculation table below*.

  Calculation of TSS and BOD_5 effluent limits:
  Current design flow (Qd) = 6.9 MGD
  Mass conversion -- 1 mg/L = 8.34 lbs/million gallons
  Wasteload Allocation (WLA) = monthly and weekly average

  Existing Load (lbs/day) = Mass conversion * WLA * Qd
  Example: 8.34 (lbs/MG)/(mg/L) * 20 mg/L * 6.9 MGD = 1151 lbs/day
  ---
  To obtain limit as concentration based for expanded design flow, we used:

  WLA = Load / (Mass conversion * expanded Qd MGD)

Example: WLA = (1151 lbs/day) / (8.34 ((lbs/MG)/(mg/L)) * 9.5 MGD) = 15 mg/L

Parameter	Limit	WLA (mg/L)	(lbs/MG) /(mg/L)	Current Qd MGD	Load (lbs/ day)	Expanded Qd MGD	Expansion limit (mg/L)
BOD	Monthly	20	8.34	6.9	1151	9.5	15
	Weekly	30	8.34	6.9	1726	9.5	22
TSS	Monthly	25	8.34	6.9	1439	9.5	18
	Weekly	45	8.34	6.9	2590	9.5	33

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** The current permit has 25 mg/L monthly average, 45 mg/L weekly average. **See above calculations**. City of St. Peters agreed to maintain the current loading with a downward adjustment of concentration because TSS consumes DO during decay. Influent monitoring may be required for this facility in its Missouri State Operating Permit. The limits for the expansion will be 18 mg/L monthly average, 33 mg/L weekly average.

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

- **Temperature.** Monitoring requirement only. Temperature affects the toxicity of Ammonia.

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

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

Summer: May 1 – October 31, Winter: November 1 – April 30.

The current permit has summer limit of 0.8 mg/L monthly average, 1.6 mg/L weekly average and winter limits of 2.8 mg/L monthly average, and 1.4 mg/L weekly average. City of St. Peters agreed to maintain the current loading with a downward adjustment of concentration because ammonia consumes DO during decay.

Parameter	Limit	WLA (mg/L)	(lbs/MG) /(mg/L)	Current Qd MGD	Load (lbs/ day)	Expanded Qd MGD	Expansion limit (mg/L)
Summer	Daily	1.6	8.34	6.9	92	9.5	1.2
	Monthly	0.8	8.34	6.9	46	9.5	0.6
Winter	Daily	2.8	8.34	6.9	161	9.5	2.0
	Monthly	1.4	8.34	6.9	81	9.5	1.0

Expansion limits will be as follows:

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	1.2	0.6
Winter	2.0	1.0

- **Fecal Coliform**. Discharge shall not contain more than a monthly geometric mean of 400 colonies/ 100 mL and a daily maximum of 1000 colonies/100 mL during the recreational season (April 1 – October 31) [10 CSR 20-7.015(8)(B)4.A.]. Future renewals of the facility operating permit will contain effluent limitations for E. coli that will replace fecal coliform as the applicable bacteria criteria in Missouri's water quality standards when Missouri adopts the implementation of the E. coli standards. Also, please see **GENERAL ASSUMPTIONS OF THE WQRS #7.**

- Ultraviolet disinfection is proposed. If ultraviolet disinfection is not used, then total residual chlorine (TRC) limit will have to be developed.
  Total Residual Chlorine (TRC). Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A].

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

Outfall #002 – Stormwater Outfall—Detention Basin—Eliminated

The United States Environmental Protection Agency (EPA) has informed the department that operating permits with outfalls that discharge less than secondary treatment effluent limitations for peak flow basins/clarifiers and/or wet weather basins/clarifiers are no longer allowed.

By-passes to secondary treatment cannot receive effluent limits. Therefore, limits in the existing permit will not be applied.

Reviewer: Todd J. Blanc
Date: August 19, 2008
Section Chief: Refaat Mefrakis

City of St. Peters, Spencer Creek WWTF
August 19, 2008
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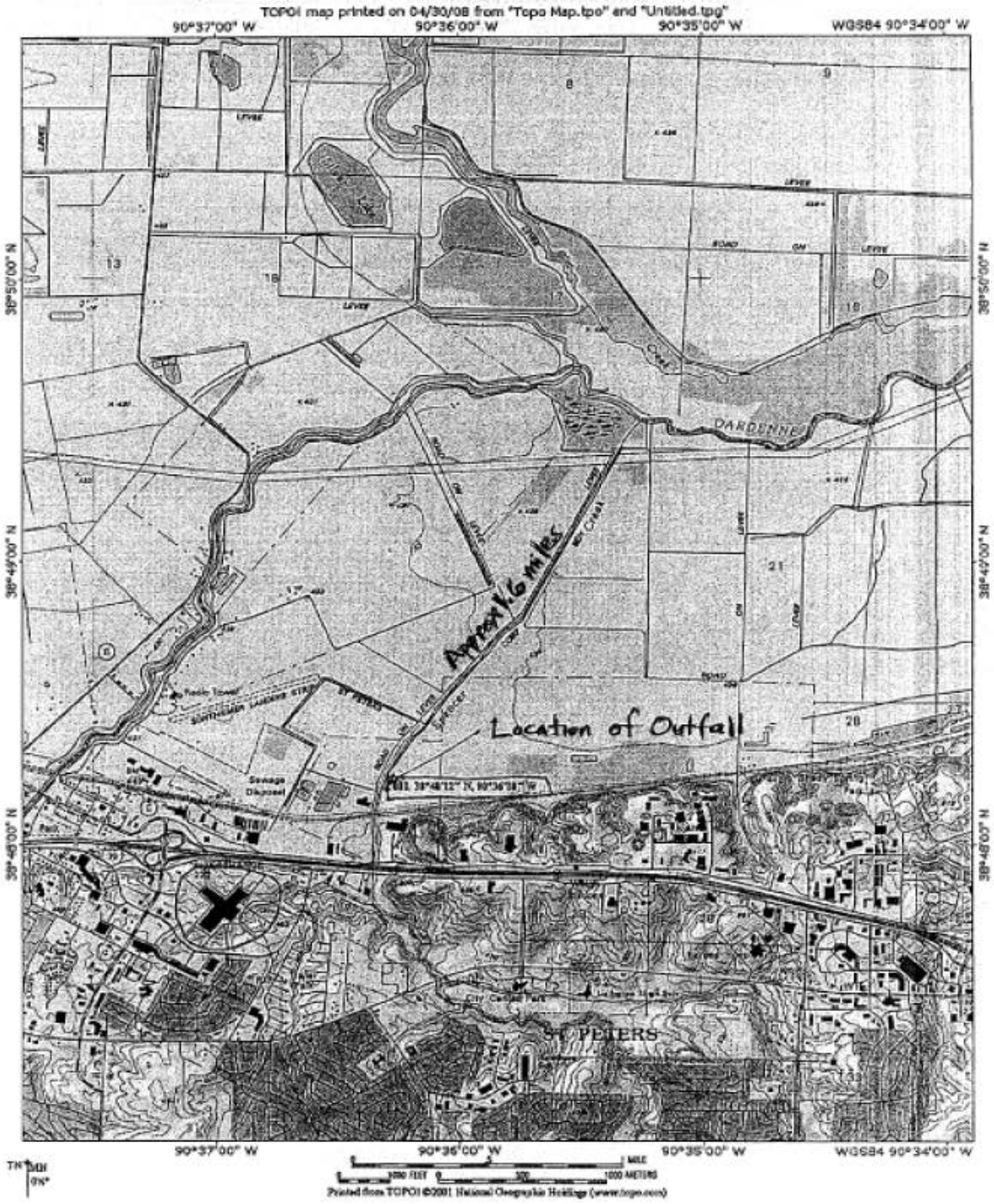
Appendix A: Map of Outfall Location



Appendix B: Qual2k Modeling Summary

July 25, 2008

Mr. Refaat H. Mefrakis, P.E.,
NPDES & Stormwater Permit Unit Chief
P.O Box 176,
Jefferson City, MO 65102-0176

Subject: St. Peters, MO Water Quality Review Assistance
(Revised July 22, 2008)

Dear Mr. Mefrakis:

The City of St. Peters, Missouri, retained Black & Veatch to complete the Water Quality Review Assistance Request for the Spencer Creek Wastewater Treatment Plant (WWTP) (Permit No: MO-0030970). This review is required because of planned improvements at the plant, which will increase the plant's capacity from an average daily flow of 6.9 mgd to 9.5 mgd. The expansion is necessary to accommodate development within the City's service area. A UV disinfection facility is also included with the improvements to meet future disinfection requirements.

Preliminary Modeling
The primary objective of this review was to conduct dissolved oxygen (DO) modeling of Spencer Creek to determine the allowable $CBOD_5$ and ammonia effluent concentrations for the future WWTP flow of 9.5 mgd. Initially, a preliminary water quality assessment of Spencer Creek was conducted using the Streeter-Phelps model supplied by MDNR. Inputs used in the model were default values that are typically used when minimal stream flow and water quality data are available. The initial modeling indicated that a more detailed evaluation would be required to obtain a more accurate estimate of the DO "sag" in the creek, as the Streeter-Phelps model is intended to be used only as a screening tool. Therefore, MDNR recommended using the QUAL2K model in place of the Streeter-Phelps model. The following is summary of our analysis using QUAL2K (Version 2.07), including our assumptions for significant inputs and other variables.

The following reports and data were used in developing the QUAL2K model:

- Dardenne Creek Watershed Study conducted by US Army Corps of Engineers, 2007
- Water-Quality Assessment and Wastewater-Management Alternatives for Dardenne Creek in St. Charles County, Missouri, 1985
- Spencer Creek stream data collected MDNR on June 6, 2007.

survey was conducted in December 2004. Plant records indicated the average flow in December 2004 was 5.9 mgd; therefore, this value was used to calibrate the hydraulic part of the model. Table 1 summarizes the results of the survey and the hydraulic information derived from the survey data.

Table 1 includes the lengths of each of the four model segments. SP1, SP2, and SP3 are names of the three surveyed cross-sections, which were used to develop the hydraulic information required by the model. Since SP3 was only 0.2 mile downstream of the WWTP, it was assumed that the width and depth of the most upstream segment was the same as SP3. The widths and depths, along with the channel bottom slope, also surveyed, were inputs to Manning's Equation at a flow of 5.9 cfs. These inputs were used to determine iteratively the Manning's n and average velocities for each assumed rectangular-shaped channel segment. For inputs into QUAL2K, the velocities and depths were converted to the coefficients and exponents in the following equations. These equations allow velocities and depths in the creek to be predicted for any flow rate. The exponents, b and d, were assumed constant for each segment and fall within the range of values recommended in the QUAL2K documentation report.

Table 1 – Model Hydraulics

	US	DS	Avg W	Avg D	Slope		Vel	coef	exp	coef	exp
Model Segment	**mi**	**mi**	**ft**	**ft**	**ft/ft**	**n**	**fps**	**a**	**b**	**c**	**d**
Headwater @ WWTP	1.7	1.5	16.0	1.28	0.0025	0.18	0.44	0.270	0.500	0.670	0.40
SP3	1.5	1.0	16.0	1.28	0.0025	0.18	0.44	0.270	0.500	0.670	0.40
SP2	1.0	0.4	17.2	1.51	0.0010	0.16	0.36	0.223	0.500	0.785	0.40
SP1-Confluence	0.4	0.0	25.4	1.16	0.0004	0.10	0.32	0.195	0.500	0.610	0.40

Equation 1

$V = aQ^b$

where:
V = Stream velocity, fps
Q = Discharge, cfs
a = Velocity coefficient
b = Velocity exponent

Equation 2

$D = cQ^d$

where:
D = Stream depth, ft
Q = Discharge, cfs
c = Depth coefficient
d = Depth exponent

Water Quality Inputs and Assumptions

Table 2 summarizes the significant inputs and assumptions used for all model segments in developing the QUAL2K model. It was determined that predicted DO concentrations are very sensitive to the CBOD decay rate (K_1). Since recent creek sampling data for CBOD calibration of K_1 were not available, the K_1 of 0.4 per day developed for a QUAL-II modeling

study of Spencer Creek by the USGS in 1985 was assumed for this study. The ammonia decay rate of 0.4 per day from the USGS study was also assumed. QUAL2K assumes that 4.5 mg/L of DO is required to nitrify 1 mg/L of ammonia to nitrate. Therefore, the NBOD concentration is 4.5 times the ammonia concentration, or 7.2 mg/L.

Table 2 – Water Quality Inputs and Assumptions

Input/Assumption	Existing Permit	Future Permit
Plant Effluent, mgd	**6.9**	**9.5**
Effluent $CBOD_5$, mg/l (weekly average)	30	30
Effluent Ammonia, mg/L-N	1.6	1.6
Effluent Dissolved Oxygen, mg/L	6	6
Upstream Stream Flow, cfs	0.1	0.1
CBOD Decay Rate, per day	0.4	0.4
$CBOD_u/CBOD_5$	1.16	1.16
Ammonia decay rate, per day	0.4	0.4
Sediment Oxygen Demand. grams O_2/m^2/day	1	1
Phytoplankton Max Growth Rate, per day**	2.5	2.5
Bottom Algae Max Growth Rate, mg per m^2 per day**	50	50

* First model segment downstream of WWTP
** Model default value

The 1985 USGS study did not specify the ratio of CBOD ultimate ($CBOD_u$) to $CBOD_5$, which is required by QUAL2K. Since during the low flow condition (7Q10), the flow in the creek is effluent dominated, the following equation from the QUAL2K documentation report was to calculate the ratio.

Equation 3

$$CBOD_u/CBOD_5 = 1/(1 - e^{k*5})$$

where k = CBOD decay rate (K_1)

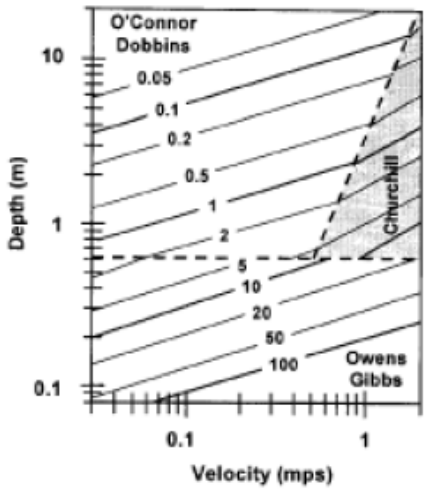
The calculated ratio for a K1 of 0.4 is 1.16 as indicated in Table 2

The QUAL2K model also includes sediment oxygen demand (SOD), which was assumed to be 1 gram O_2/m^2/day.

Stream Reaeration

DO is also very sensitive to assumed values for reaeration, which for most reaeration equations, is directly proportional to velocity and inversely proportional to depth. QUAL2K provides several alternatives for calculating reaeration. Figure 1 from the QUAL2K documentation report was provided to assist users in selecting the most appropriate reaeration equation. Given the depths and velocities of Spencer Creek at low flow with the effluent, the Owens-Gibbs equation was selected from Figure 1.

Figure 1 – Selection of Reaeration Equation



Model Results

QUAL2K was run for the current and future permit flows of 6.9 mgd and 9.5 mgd. Both cases assumed the current permit $CBOD_5$ and ammonia conditions of 30 mg/L (20 mg/L average monthly) and 1.6 mg/L-N, respectively. Figure 2 indicates that the minimum average daily DO concentration ("sag") for the current and future cases were 5.2 mg/L and 5.1 mg/L, respectively, at 0.5 miles upstream of the confluence of Dardenne Creek. In addition to the average daily DO concentration, QUAL2K is capable predicting the diurnal change in DO. The minimum DO concentration at the sag point for the current and future cases is 5.1 mg/L and 5.0 mg/L, respectively.

The proposed future permit effluent flow would increase by 38 percent compared to the current permitted flow. However, the model results indicate that the percentage decrease in DO concentration for the future case is proportionally much less, primarily because the increase in flow has increased the creek velocity and decreased the decay of CBOD and ammonia, and the CBOD and ammonia concentrations from the plant effluent remain the same for both cases.

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.

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

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

FACILITY NAME	
St. Peters Spencer Creek STP	
PERMIT NO.	COUNTY
MO-0030970	St. Charles

APPLICATION OVERVIEW

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

BASIC APPLICATION INFORMATION

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

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

C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

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

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

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

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

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

SIUs are defined as:

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

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

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

AP 22345

RECEIVED

NOV 12 2015

Water Protection Program

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

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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
11/12/15	D SB

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- 0030970 Expiration Date May 12, 2016

☐ An operating permit modification: Permit #MO-_____ Reason: _____

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

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
St. Peters Spencer Creek STP		636-477-6600, ext. 1573	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
100 Ecology Dr	St. Peters	MO	63376

2.1 **LEGAL DESCRIPTION** (Facility Site): SE ¼, NE ¼, NE ¼, Sec. 30 , T 47n , R 4E — COUNTY: St. Charles

2.2 UTM Coordinates Easting (X): 707540.0 Northing (Y): 4297629.02
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Spencer Creek

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

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of St. Peters	bmalach@stpetersmo.net	636-477-6600, ext. 1301	
ADDRESS	CITY	STATE	ZIP CODE
One St. Peters Centre Blvd	St. Peters	MO	63376

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

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

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

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

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

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of St. Peters	bmalach@stpetersmo.net	636-477-6600, ext. 1301	
ADDRESS	CITY	STATE	ZIP CODE
One St. Peters Centre Blvd	St. Peters	MO	63376

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)
Robert Hamlin	Plant Operations Foreman	1737
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
rhamlin@stpetersmo.net	636-477-6600, ext. 1386	

6. FACILITY CONTACT

NAME	TITLE		
Tim Myers	Director of Utilities		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
tmyers@stpetersmo.net	636-477-6600, ext. 1337		
ADDRESS	CITY	STATE	ZIP CODE
100 Ecology Dr	St. Peters	MO	63376

FACILITY NAME St. Peters Spencer Creek STP	PERMIT NO. MO- 0030970	OUTFALL NO. 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.

See attached diagram and figure:

Treatment Description: Submersible pumps lift flow from the gravity sewers into the head works, force mains pump directly into the headworks. The headworks contains mechanical screening, grit removal, and influent sampling. Excess wet weather flow can be diverted into a series of five extraneous flow basins, if needed.

Wastewater leaves the headworks and flows to two parallel oxidation ditches, before being split into three final clarifiers, effluent from the clairfiers flows through a UV disinfection, effluent flow meter, re-aeration basin, effluent sampling, then gravity discharge to Spencer Creek at Outfall 001.

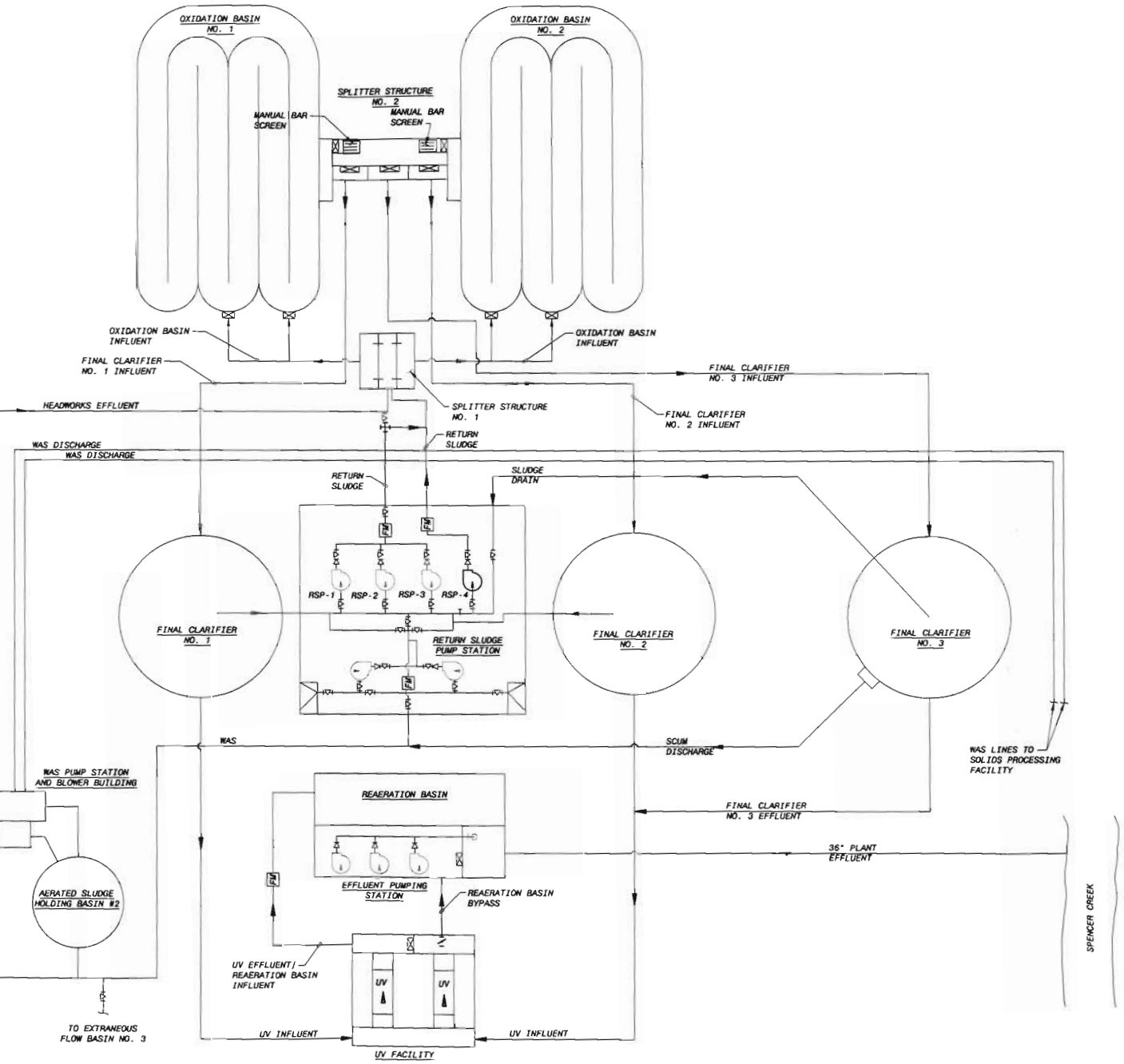
RAS is returned to the oxidation ditches and WAS is held in two aerated holding tanks. Sludge is then pumped to the dewatering building located at the adjacent composting facility. Sludge is dewatered on two belt filter presses. De-watered biosolids are then mixed with yard waste and composted in an Aerated Static Pile composting system in accordance to EPA 503 regulations. The compost also is certified through the US Compost Council STA Testing program.

As a backup to the dewatering facility the City has also retained two sludge storage lagoons, which can function as either extraneous flow basins or sludge storage lagoons.

Class A compost is sold and distritbuted at the composting site. The City is also permitted to land apply Class B biosolids. The City also accepts biosolids from outside sources for land application or composting.

The treatment facility has a backup generator to support the treatment process. The composting facility does not have a secondary power supply, but has an independent primary feed from the wastewater treatment plant.

A SCADA system is used to assist in monitoring and operating the plant.



PLANT SCHEMATIC
NO SCALE

NOTES

1. NOT ALL PIPING AND VALVES SHOWN.

NO.	BY	CK	APP

10/15/08 CONFORMED TO ADDENDUM
DATE REVISIONS AND RECORD OF ISSUE

CYDNET ID: Procurement Management
WF: AC4.dwg
SAVED: CHE53822, 10/29/2008 12:20:19 PM
PLOTTED: FRE33224, 8/9/2010 5:08:17 PM
USER: FRE33224 DWG VER: 1000

XREF1:
XREF2:
XREF3:
XREF4:
XREF5:

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PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED OR APPROVED BY MINAMIN P. PRESS AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MISSOURI.
LICENSE NO.: E-26530 EXPIRATION DATE: 12-31-2009

ST. PETERS, MISSOURI SPENCER CREEK WASTEWATER TREATMENT PLANT EXPANSION

GENERAL PLANT SCHEMATIC

DESIGNED: BPF
DETAILED: BPF
CHECKED: WLK
APPROVED: TJR
DATE: 9/5/08

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
149915

AC4
SHEET
4 OF 79

ECOLOGY DR
MID RIVERS TRADE CT
8" FM
Oxidation Ditches
Flow Equalization/
Emergency Sludge Lagoon
Final Clarifiers
Re-Aeration
Pumping Station
Effluent Sampling
UV
Effluent Flow Meter
Flow Equalization
Generator
Flow Equalization/
Emergency Sludge Lagoon
Aerated
Sludge
Holding Tanks
Flow Equalization
First Flush Basin
Headworks
Screening
Grit Removal
Influent Flow Meter
Influent Sampling
16" FM
24" Gravity
36" Gravity
Water

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 0030970	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

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

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

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

7.4 Number of people presently connected or population equivalent (P.E.): 51,043 Design P.E. 82194

7.5 Connections to the facility:

Number of units presently connected:

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

Number of Commercial Establishments: _____

7.6 Design Flow 9.5 mgd | Actual Flow 5.76 (2015 AAD Flow Jan 1-Nov 9)

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

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

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

7.10 Is wastewater land applied? Yes ☐ No ☑

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

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

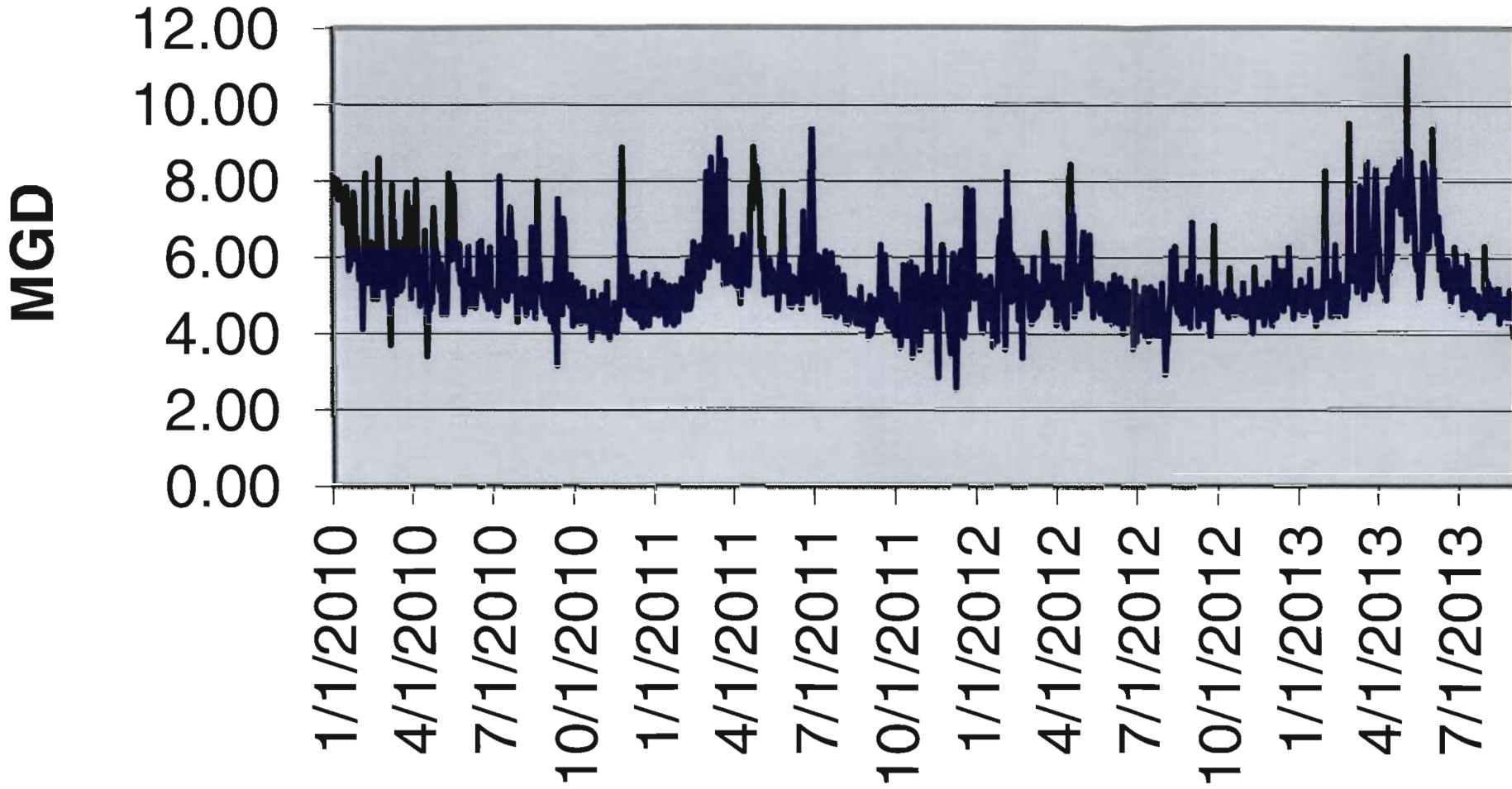
7.12 Has a wasteload allocation study been completed for this facility? Yes ☐ No ☑

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

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

Daily Wastewater Flow
Jan 2010- Nov 2015



FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 003079	1

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 ☑ see below

9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 3800 Actual Dry Tons/Year 1203

9.3 Sludge storage provided: 521k Cubic feet; 300 Days of storage; 1-2 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) Composting No LAP since 2009

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

NAME	EMAIL ADDRESS
Sludge is dewatered and composted on-site. No Land Application since 2009	

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

9.2: Sludge Production is 3800 DT from this facility, but varies due to sludge received from other facilities.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 030979	1

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Length of sanitary sewer collection system in miles
246

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

Have budgeted to complete CIPP lining of Dardenne Creek Trunk Sewer late 2015 early 2016. This is approximately, 9,727-ft of 36" and 42" diameter trunk sewer. The estimated cost is $1.87-mil for this work.

One sub watershed where an SSES has been completed, dye testing is currently being completed, and manhole and sewer rehabilitation will be budgeted.

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.

None

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 0030970	1

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

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

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.61	S.U.	7.2	S.U.	21
pH (Maximum)	7.48	S.U.	7.2	S.U.	21
Flow Rate	9.100	MGD	5.968	MGD	31

*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	<6.0	mg/L	<6.0	mg/L	16	SM 5210B	
	$CBOD_5$		mg/L		mg/L			
E. COLI		10	#/100 mL	<10	#/100 mL	4	SM 9223B-QT	
TOTAL SUSPENDED SOLIDS (TSS)		4.0	mg/L	<2.2	mg/L	16	SM 2540D	
AMMONIA (as N)		<2.0	mg/L	<0.6	mg/L	16	EPA 350.1	
CHLORINE* (TOTAL RESIDUAL, TRC)			mg/L		mg/L			
DISSOLVED OXYGEN		9.25	mg/L	8.38	mg/L	25	EPA Hach 10360	
OIL and GREASE		<5.1	mg/L	<5.1	mg/L	3	EPA 1664	
OTHER			mg/L		mg/L			

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 0030970	1

PART C – CERTIFICATION

15. CERTIFICATION

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

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
William P Charnisky	City Administrator

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
636-477-6600, ext. 1202

DATE SIGNED
11/10/15

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

Send Completed Form to:

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

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

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

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

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

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

16. EXPANDED EFFLUENT TESTING DATA

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

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

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS											
ALUMINUM	0.025	mg/L			0.020	mg/L			3	EPA 200.7	0.005
ANTIMONY	<0.010	mg/L			<0.010	mg/L			3	EPA 200.7	0.010
ARSENIC	0.005	mg/L			<0.005	mg/L			5	EPA 200.7	0.005
BERYLLIUM	<0.001	mg/L			<0.001	mg/L			5	EPA 200.7	0.001
CADMIUM	<0.002	mg/L			<0.002	mg/L			5	EPA 200.7	0.002
CHROMIUM III	<0.005	mg/L			<0,005	mg/L			3	calc	0.005
CHROMIUM VI	<0.005	mg/L			<0.005	mg/L			3	SM3500-cr	0.0055
COPPER	0.0043	mg/L			0.0036	mg/L			5	EPA 200.7	0.002
IRON	0.21	mg/L			0.078	mg/L			5	EPA 200.7	0.010
LEAD	<0.005	mg/L			<0.005	mg/L			5	EPA 200.7	0.005
MERCURY	<2E-4	mg/L			<2E-4	mg/L			5	EPA 245.1	0.0002
NICKEL	0.0029	mg/L			0.0019	mg/L			5	EPA 200.7	0.001
SELENIUM	<0.005	mg/L			<0.005	mg/L			5	EPA 200.7	0.005
SILVER	<0.002	mg/L			<0.002	mg/L			5	EPA 200.7	0.002
THALLIUM	<0.005	mg/L			<0.005	mg/L			5	EPA 200.7	0.005
ZINC	0.051	mg/L			0.047	mg/L			5	EPA 200.7	0.005
CYANIDE	<2.e-3	mg/L			<2.e-3	mg/L			5	SM4500-cn	0.0025
TOTAL PHENOLIC COMPOUNDS	<0.05	mg/L			<0.05	mg/L			5	EPA 420.1	<0.050
HARDNESS (as $CaCO_3$)	260	mg/L			252	mg/L			5	SM2340B	8.9
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	<0.05	mg/L			<0.05	mg/L			3	EPA 624	0.05
ACRYLONITRILE	<0.010	mg/L			<0.010	mg/L			3	EPA 624	0.010
BENZENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
BROMOFORM	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
CARBON TETRACHLORIDE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005

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

16. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
CHLOROBENZENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
CHLORODIBROMO-METHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
CHLOROETHANE	<0.010	mg/L			<0.010	mg/L			3	EPA 624	0.010
2-CHLORO-ETHYLVINYL ETHER	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
CHLOROFORM	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
DICHLOROBROMO-METHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,1-DICHLORO-ETHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,2-DICHLORO-ETHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
TRANS-1,2-DICHLOROETHYLENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,1-DICHLORO-ETHYLENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,2-DICHLORO-PROPANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,3-DICHLORO-PROPYLENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
ETHYLBENZENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
METHYL BROMIDE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
METHYL CHLORIDE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
METHYLENE CHLORIDE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,1,2,2-TETRA-CHLOROETHANE	<0.005.	mg/L			<0.005	mg/L			3	EPA 624	0.005
TETRACHLORO-ETHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
TOLUENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,1,1-TRICHLORO-ETHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
1,1,2-TRICHLORO-ETHANE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
TRICHLORETHYLENE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
VINYL CHLORIDE	<0.005	mg/L			<0.005	mg/L			3	EPA 624	0.005
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2-CHLOROPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2,4-DICHLOROPHENOL	<0.01	mg/L			<0.010	mg/L			3	EPA 625	0.010
2,4-DIMETHYLPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
4,6-DINITRO-O-CRESOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2,4-DINITROPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2-NITROPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
4-NITROPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010

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

16. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
PENTACHLOROPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
PHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2,4,6-TRICHLOROPHENOL	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
ACENAPHTHYLENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
ANTHRACENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BENZIDINE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BENZO(A)ANTHRACENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BENZO(A)PYRENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
3,4-BENZO-FLUORANTHENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BENZO(GH) PHERYLENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BENZO(K) FLUORANTHENE	<0.01	mg/L			<0.010	mg/L			3	EPA 625	0.010
BIS (2-CHLOROTHOXY) METHANE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BIS (2-CHLOROETHYL) – ETHER	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BIS (2-CHLOROISO-PROPYL) ETHER	<0.010	mg//L			<0.010	mg/L			3	EPA 625	0.010
BIS (2-ETHYLHEXYL) PHTHALATE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
4-BROMOPHENYL PHENYL ETHER	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
BUTYL BENZYL PHTHALATE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2-CHLORONAPH-THALENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
4-CHLORPHENYL PHENYL ETHER	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
CHRYSENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
DI-N-BUTYL PHTHALATE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
DI-N-OCTYL PHTHALATE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
DIBENZO (A,H) ANTHRACENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
1,2-DICHLORO-BENZENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
1,3-DICHLORO-BENZENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
1,4-DICHLORO-BENZENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
3,3-DICHLORO-BENZIDINE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
DIETHYL PHTHALATE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
DIMETHYL PHTHALATE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010

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PART D – EXPANDED EFFLUENT TESTING DATA

16. EXPANDED EFFLUENT TESTING DATA

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
2,4-DINITRO-TOLUENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
2,6-DINITRO-TOLUENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
1,2-DIPHENYL-HYDRAZINE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
FLUORANTHENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
FLUORENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
HEXACHLOROBENZENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
HEXACHLOROBUTADIENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
HEXACHLOROCYCLO-PENTADIENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
HEXACHLOROETHANE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
INDENO (1,2,3-CD) PYRENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
ISOPHORONE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
NAPHTHALENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
NITROBENZENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
N-NITROSODI-PROPYLAMINE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
N-NITROSODI-METHYLAMINE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
N-NITROSODI-PHENYLAMINE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
PHENANTHRENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
PYRENE	<0.010	mg/L			<0.010	mg/L			3	EPA 625	0.010
1,2,4-TRICHLOROBENZENE	<0.010	mg/L			<0.010	mg/L			3	EPa 625	0.010

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

END OF PART D

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA

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

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

A. POTWs with a design flow rate greater than or equal to 1 million gallons per day

B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)

C. POTWs required by the permitting authority to submit data for these parameters

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

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: 16 chronic 16 acute

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

	Most Recent	2ND Most Recent	3RD Most Recent
A. Test Information			
Test Method Number	EPA 600/4-90/027	EPA 600/4-90/027	EPA 600/4-90/027
Final Report Number	EAS LOG 1901210	EAS LOG 1805725	EAS LOG 1800121
Outfall Number	001	001	001
Dates Sample Collected	July 22 - 24, 2015	Jan 14 - 16, 2015	oct 8 -10, 2014
Date Test Started	July 22, 2015	Jan 14, 2015	Oct 8, 2014
Duration	4 days	4 day	4 day
B. Toxicity Test Methods Followed			
Manual Title	EPA 821-R-02-012	EPA 821-R-02-012	EPA 821-R-02-012
Edition Number and Year of Publication	5th Ed 2002	5th Ed 2002	5 th Ed 2002
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	24 hour composite	24 hour composite	24 hour composite
Grab			
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection	☐	☐	☐
After Disinfection	☑ After UV	☑ After UV	☑ After UV
After Dechlorination	☐	☐	☐
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	After UV	After UV	After UV
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	☐	☐	☐
Acute Toxicity	☑ Acute	☑ Acute	☑ Acute
G. Provide the type of test performed			
Static	☑ Static -non Renewal	☑ Static non renewal	☑ Static non renewal
Static-renewal	☐	☐	☐
Flow-through	☐	☐	☐
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	☑ Reconsituted Water	☑ Reconstituted Water	☑ Reconstituted Water
Receiving Water	☐	☐	☐

FACILITY NAME St. Peters Spencer Creek STP	PERMIT NO. MO- 0030970	OUTFALL NO. 001

PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA (continued)

	Most Recent	Second Most Recent	Third Most Recent
I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh Water	Upstream Water	Upstream Water	Upstream water
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	6.25, 12.5, 25, 50, 100	6.25, 12.5, 25, 50, 100	6.25, 12.5, 25, 50, 100
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	8.01	7.59	7.61
Salinity	1308	1435	1334
Temperature	3	3	3
Ammonia	<0.05	<0.05	<0.05
Dissolved Oxygen	8.7	12.2	8.4
L. Test Results			
Acute:			
Percent Survival in 100% Effluent	100	100	100
LC_{50}	100	100	100
95% C.I.	95	95	95
Control Percent Survival	100	100	100
Other (Describe)			
Chronic:			
NOEC			
IC_{25}			
Control Percent Survival			
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?	yes	yes	yes
Was reference toxicant test within acceptable bounds?	yes	yes	yes
What date was reference toxicant test run (MM/DD/YYYY)?	8 Jul 2015	7 Jan 2015	1 Oct 2014
Other (Describe)			

Is the treatment works involved in a toxicity reduction evaluation? ☐ Yes ☑ No

If yes, describe:

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

Date Submitted (MM/DD/YYYY) 10/23/2014

Summary of Results (See Instructions)

Confirmation that plant had passed three successive tests, no additional testing required

END OF PART E

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

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

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

18. GENERAL INFORMATION

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

☑ Yes ☐ No

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

Number of non-categorical SIUs 3

Number of CIUs 0

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

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

NAME
RB Manufacturing

MAILING ADDRESS	CITY	STATE	ZIP CODE
30 Arrowhead Industrial Blvd	St. Peters	MO	63376

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

Manufacture household cleaners, air fresheners, personal care products

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

Principal Product(s): Woolite, Lysol, Resolve, Finish, Lime-a-Way, Calgon, Glass Plus, Old English

Raw Material(s): See Attached

19.3 Flow Rate

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

46,306 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.

6,750 gpd ☐ Continuous ☑ Intermittent Variable Rate

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

a. Local Limits ☑ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☑ No

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

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

☑ Yes ☐ No

If Yes, describe each episode

See attached

Item Number	Description	Component Material	Commodity Code
0110495	GL-45-SLA	COAG - COMPLEXING /SEQUESTERING AGENT	06137 - Raw - Complexing-Sequestering
373246	ALKYLBENZEN SULFONIC ACID	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
363567	ALCOHOL ETHOXYLATE 7EO	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
354148	BENZALKONIUM CHLORIDE 80%	SUCA - SURFACTANT - CATIONIC	SUCA - Raw - Surfactant Cationic
369421	ALKOXY FATTY ALCOHOL, C12-15	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
0010802	SULFONATED POLYMER 588	ORPO - ORGANIC - POLYMER	ORPO - Raw - Organic Polymers
363913	PROPYLENE GLYCOL INDUST	ORET - ORGANIC - ETHER	ORET - Raw - Organic Glycol Ether
8056690	LEMONBREEZE 197115 DB FIRMENIC	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
361709	DIPROPY GLY N-BUTYL ETHER	ORET - ORGANIC - ETHER	ORET - Raw - Organic Glycol Ether
363512	ALKYL POLYGLYCOSIDE 325NK	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
363568	ALCOHOL ETHOXYLATE 3EO	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
368058	CITRIC ACID, 50%	ORAC - ORGANIC-ACID AND CITRATES	ORAC - Raw - Organic Acids-Citrates
0004322	SOD LAURYL ETHER SULF 70%	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
378112	COCONUT FATTY ACID	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
0208989	DENATURED ALCOHOL SDA-40B	ORAL - ORGANIC - ALCOHOL	ORAL - Raw - Organic Alcohol Ethanc
380053	EFFECTENZ P 150	ENZY - ENZYME	ENZY - Raw - Enzymes
359209	ACUSOL 445N	ORPO - ORGANIC - POLYMER	ORPO - Raw - Organic Polymers
0019810	CARBOXYVINYL POLYMER	THIC - THICKENER	ORPO - Raw - Organic Polymers
0044791	HYDROTREATED MIDDLE DISTILLATE	OIMI - OIL-MINERAL	OIMI - Raw - Mineral Oil
8171458	ALKOXYLATE	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
0362638	PVOH FILM 90 MICRONS M8440	ORAL - ORGANIC - ALCOHOL	PVO - Raw - PVOH
0046248	ALPHASTEP MC-48	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
8007142	MIRAPOL SURF-S 480 PF	Z99 - Other	ORPO - Raw - Organic Polymers
355604	LAURYLDIMETHAMINEOXIDE30%	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
0358972	PVOH FILM 75 MICRONS M8440	ORAL - ORGANIC - ALCOHOL	PVO - Raw - PVOH
355512	N-BUTOXYPROPANOL	ORET - ORGANIC - ETHER	ORET - Raw - Organic Glycol Ether
0232663	CENTRIMONIUM CHLORIDE - 30%	NA - Not Applicable	SUCA - Raw - Surfactant Cationic
378661	NA CUMENE SULPHONATE 40%	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
0032119	LEMON FRAG. SJ-58 MOD 2	NA - Not Applicable	FRBO - Raw - Fragrances
358174	SOD SILICATE 2.4R,47.5%	INSI - INORGANIC - SILICA / SILICATE	INSI - Raw - Inorganic Silicates
8056708	TANGERINE & MANGO UAB10152/00	NA - Not Applicable	FRBO - Raw - Fragrances
520294	SOD M/D DSLFNT DIPH.OXIDE	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
8056722	LAVENDER ORCHID UAB10198/00	NA - Not Applicable	FRBO - Raw - Fragrances
520941	MONOETHANOLAMINE ICF GRDE	ORAN - ORGANIC - AMINE	ORAN - Raw - Organic Amines
520295	SODIUM LAURYL SULFATE 29%	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
369361	SULFAMIC ACID 99.5%	INAC - INORGANIC - ACID	INAC - Raw - Inorganic Acids
369625U	CARBOXYLATE COPOLYMER	ORPO - ORGANIC - POLYMER	ORPO - Raw - Organic Polymers
354391	HYDROXYACETIC ACID 70%	ORAC - ORGANIC-ACID AND CITRATES	ORAC - Raw - Organic Acids-Citrates
0231911	FRAGRANCE	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0284644	FRAGRANCE LIME BLOSSOM 195849H	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
354136	TRIETHANOLAMINE 99%	ORAN - ORGANIC - AMINE	ORAN - Raw - Organic Amines
0180222	STAINZYME PLUS 12 L	ENZY - ENZYME	ENZY - Raw - Enzymes
382155	IMINODISUCCINATE SOD SALT	COAG - COMPLEXING /SEQUESTERING AGENT	06137 - Raw - Complexing-Sequestering
354214	SOD CITRATE DIHY GRAN USP	ORAC - ORGANIC-ACID AND CITRATES	ORAC - Raw - Organic Acids-Citrates
8002875	HYDROGEN PEROXIDE 50%	PERS - Persalts	PERS - Raw - Persalts
0035890	SPOTLESS FM/FS-2166 MOD	FROP - FRAGRANCE - OPEN FORMULA	FRBO - Raw - Fragrances
520139	ASPHALTIC BLACK OIL	OIMI - OIL-MINERAL	OIMI - Raw - Mineral Oil
375603	PROPYLENE GLY PHNYL ETHER	ORET - ORGANIC - ETHER	ORET - Raw - Organic Glycol Ether

0107094	FRA,OPENF,STARDUST FS-2363	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
520557	KATHON CG/ICP	PRES - PRESERVATIVE	PRES - Raw - Preservatives
355505	SODIUM CARBONATE ANHYDR	INBI - INORGANIC BI-CARBONATE	INBI - Raw - Inorganic Bi-Carbonate
8083511	VANILLA R12-3988	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0013020	GREEN APPLE DISH RINSE 45	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0044051	D&C ORANGE 4 - CI 15510	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0093644	FRAG. LEMON 940000 CUP	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0215524	GROMMET GRAPEFRUIT R07-2541	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0329122	ICED WINTERBERRY US260306/00	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0079812	ALOE VERA GEL 1X	ACPE - ACTIVE - PEST CONTROL	ACCO - Raw - Active Cosmetic
0038823	DIRECT BRILLIANT VIOLET B 200%	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
520257	ACID BLUE 9 LIQ 50%	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
520081	SOLVENT YELLOW 72	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
355594	SOD CARBONATE ANHYDROUS	INBI - INORGANIC BI-CARBONATE	INBI - Raw - Inorganic Bi-Carbonates
122210U	SULPHURIC ACID 93 %	INAC - INORGANIC - ACID	INAC - Raw - Inorganic Acids
0339026	SODIUM CHLORIDE USP	INSI - INORGANIC - SILICA / SILICATE	INXX - Raw - Inorganic Other
370637U	D&C GREEN 5	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0013424	SANOLIN RED N-6B	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
355482	ACID GREEN 25	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
8067674	FRAG CITRUS CONCERTO	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
354432	D&C YELLOW 8	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
355595	ACID GREEN 1	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
8020191	FD&C RED GMP 33	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
520175	ACID BLUE #40 DYE	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
370639	D & C RED 33	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
371169U	APPLE CIDER VINEGAR	FOXX - FOOD - OTHER	02610 - Raw - Food - Vinegars
369553U	ACID YELLOW 23	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
8020192	FD&C RED GMP	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
520376	WATER SOFT	WATE - WATER	WATE - Raw - DI Water
0110495	GL-45-SLA	COAG - COMPLEXING /SEQUESTERING AGENT	06137 - Raw - Complexing-Sequestering
373246	ALKYLBENZEN SULFONIC ACID	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
363567	ALCOHOL ETHOXYLATE 7EO	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
369421	ALKOXY FATTY ALCOHOL, C12-15	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
354148	BENZALKONIUM CHLORIDE 80%	SUCA - SURFACTANT - CATIONIC	SUCA - Raw - Surfactant Cationic
0010802	SULFONATED POLYMER 588	ORPO - ORGANIC - POLYMER	ORPO - Raw - Organic Polymers
363913	PROPYLENE GLYCOL INDUST	ORET - ORGANIC - ETHER	ORET - Raw - Organic Glycol Ether
363568	ALCOHOL ETHOXYLATE 3EO	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
8056690	LEMONBREEZE 197115 DB FIRMENIC	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
361709	DIPROPY GLY N-BUTYL ETHER	ORET - ORGANIC - ETHER	ORET - Raw - Organic Glycol Ether
363512	ALKYL POLYGLYCOSIDE 325NK	SUXX - SURFACTANT - NON IONIC	SUXX - Raw - Surfactant Nonionic
368058	CITRIC ACID, 50%	ORAC - ORGANIC-ACID AND CITRATES	ORAC - Raw - Organic Acids-Citrates
0044791	HYDROTREATED MIDDLE DISTILLATE	OIMI - OIL-MINERAL	OIMI - Raw - Mineral Oil
0004322	SOD LAURYL ETHER SULF 70%	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
380053	EFFECTENZ P 150	ENZY - ENZYME	ENZY - Raw - Enzymes
359209	ACUSOL 445N	ORPO - ORGANIC - POLYMER	ORPO - Raw - Organic Polymers
0208989	DENATURED ALCOHOL SDA-40B	ORAL - ORGANIC - ALCOHOL	ORAL - Raw - Organic Alcohol Ethanol
0362638	PVOH FILM 90 MICRONS M8440	ORAL - ORGANIC - ALCOHOL	PVO - Raw - PVOH
0019810	CARBOXYVINYL POLYMER	THIC - THICKENER	ORPO - Raw - Organic Polymers
0358972	PVOH FILM 75 MICRONS M8440	ORAL - ORGANIC - ALCOHOL	PVO - Raw - PVOH

0138453	LEMON WORLD 285827	NA - Not Applicable	FRBO - Raw - Fragrances
354200	SILICONE FLUID AQ EMUL	SIAF - Silicons & Anti-Foam	SIAF - Raw - Silicones & Anti-foam
0034615	PVOH FILM 90 MICRONS M8440	ORAL - ORGANIC - ALCOHOL	PVO - Raw - PVOH
0169829	BENZALKONIUM CHLORIDE 50%	SUCA - SURFACTANT - CATIONIC	SUCA - Raw - Surfactant Cationic
355539	DIETHYLAMINMETHYLCOUMARIN	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0068195	BOCAGE 120 MOD EN111115/00	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
8039584	PURICOLOR ORANGE AOR7	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0091112	006774 LYSOL HD CLEANSER CUP	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0388715	FRAGRANCE CREAMY SENSITIVE	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
520932	SODIUM LAUROYL SARCOSINAT	SUAN - SURFACTANT - ANIONIC	SUAN - Raw - Surfactant Anionic
0324994	KATHON CG(COSMETIC GRADE)	PRES - PRESERVATIVE	PRES - Raw - Preservatives
356583	ULTRAMARINE BLUE	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0034616	PVOH FILM 60 MICRONS	ITXX - INTERMEDIATE - OTHER	PVO - Raw - PVOH
0378162	FRAG YUMMY 246.704	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
520942	PARAFFIN WAX EMULSION	WXXX - WAX-OTHERS	WXXX - Raw - Wax Vegetable
0067055	PVOH FILM AQ 50 (463)	ORAL - ORGANIC - ALCOHOL	PVO - Raw - PVOH
354434	D&C ORANGE 4	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0329121	CRANBERRY CHEER US260446/00	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0061228	CANISH FC/FS-2367	FROP - FRAGRANCE - OPEN FORMULA	FRBO - Raw - Fragrances
0126584	HEDP 4 NA (88.5%) GRANULAR	COAG - COMPLEXING /SEQUESTERING AGENT	06137 - Raw - Complexing-Sequestering
0096494	PERF COUNTRYSIDE R061433	NA - Not Applicable	FRBO - Raw - Fragrances
356152	SANDOLAN BLUE 180	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
354149	SODIUM BICARBONATE	INBI - INORGANIC BI-CARBONATE	INBI - Raw - Inorganic Bi-Carbonates
361424	DIRECT BLUE 86	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
363784	PENTASODIUM DTPA 40%	COAG - COMPLEXING /SEQUESTERING AGENT	06137 - Raw - Complexing-Sequestering
363569	SAVINASE 16.0 L EX	ENZY - ENZYME	ENZY - Raw - Enzymes
0007147	FRAG GARDEN APPLE 446.605 D	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
510539	RYAN	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0368115	UCON 50-HB-660	Z99 - Other	ORET - Raw - Organic Glycol Ether
520557	KATHON CG/ICP	PRES - PRESERVATIVE	PRES - Raw - Preservatives
355505	SODIUM CARBONATE ANHYDR	INBI - INORGANIC BI-CARBONATE	INBI - Raw - Inorganic Bi-Carbonates
0107094	FRA,OPENF,STARDUST FS-2363	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0093644	FRAG. LEMON 940000 CUP	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0013020	GREEN APPLE DISH RINSE 45	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
8067674	FRAG CITRUS CONCERTO	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
0079812	ALOE VERA GEL 1X	ACPE - ACTIVE - PEST CONTROL	ACCO - Raw - Active Cosmetic
0044051	D&C ORANGE 4 - CI 15510	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
8020191	FD&C RED GMP 33	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0329122	ICED WINTERBERRY US260306/00	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances
520081	SOLVENT YELLOW 72	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
355594	SOD CARBONATE ANHYDROUS	INBI - INORGANIC BI-CARBONATE	INBI - Raw - Inorganic Bi-Carbonates
520257	ACID BLUE 9 LIQ 50%	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
0339026	SODIUM CHLORIDE USP	INSI - INORGANIC - SILICA / SILICATE	INXX - Raw - Inorganic Other
0038823	DIRECT BRILLIANT VIOLET B 200%	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
370637U	D&C GREEN 5	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
355482	ACID GREEN 25	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
122210U	SULPHURIC ACID 93 %	INAC - INORGANIC - ACID	INAC - Raw - Inorganic Acids
0013424	SANOLIN RED N-6B	DYPI - Dye & Pigments	DYPI - Raw - Dyes & Pigments
8039629	LAVANDER CASCADE 299781	FRBO - FRAGRANCE - BOUGHT IN	FRBO - Raw - Fragrances

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

RB Manufacturing con't.

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

YES

If yes, describe each episode,

The city of St. Peters had exceedances for the April 2014 reporting period for BOD, TSS and E. Coli. The cause of this violation is believed to have been hydraulic overloading. A rain event in which 4.81 inches of rain fell in a 48 hour period of time occurred on April 2, 2014. It is believed that RB Manufacturing LLC's discharge of surfactants earlier in January may have caused interference at the POW. RB Manufacturing LLC was in the process of constructing a pretreatment facility in the winter of 2013/2014. Two events occurred in January 2014. Due to the extreme low temperatures for the winter, surfactants were discharged to the POTW. This discharge, although managed without violations on the part of the POTW, affected the settling in the plant. This interference, or settling issue, was acute at the time of the rain event and is believed to have contributed to the excess discharge of solids and to the exceedances of the NPDES permit in April.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 0030970	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.

18. GENERAL INFORMATION

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

☑ Yes ☐ No

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

Number of non-categorical SIUs 3

Number of CIUs 0

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

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

NAME
GE Power and Water

MAILING ADDRESS	CITY	STATE	ZIP CODE
PO Box 1148 2 Arrowhead Industrial Blvd	St. Peters	MO	63376

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge
Ion exchange resin regeneration and reverse osmosis membrane cleaning

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

Principal Product(s): Regenerated ion exchange resins and cleaned RO membranes

Raw Material(s): HCL, H2SO4, NaOH, H2O, CO2

19.3 Flow Rate

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

150,000 gpd ☐ Continuous ☑ Intermittent

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

2,000 gpd ☑ Continuous ☐ Intermittent

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

a. Local Limits ☑ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☑ No

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

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

☐ Yes ☑ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL		
FACILITY NAME St. Peters Spencer Creek STP	PERMIT NO. MO- 0030970	OUTFALL NO. 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.

18. GENERAL INFORMATION

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

☑ Yes ☐ No

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

Number of non-categorical SIUs 3

Number of CIUs 0

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

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

NAME			
Barnes Jewish St. Peters Hospital			
MAILING ADDRESS	CITY	STATE	ZIP CODE
10 Hospital Dr.	St. Peters	MO	63376

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

General Medical and Surgical Hospital

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

Principal Product(s): See attached

Raw Material(s):

19.3 Flow Rate

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

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.

59,260 gpd ☑ Continuous ☐ Intermittent

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

a. Local Limits ☑ Yes ☐ No

b. Categorical Pretreatment Standards ☐ Yes ☑ No

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

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

☐ Yes ☑ No

If Yes, describe each episode

PART F – INDUSTRIAL USER DISCHRGES AND RECRA/CERCLA WASTES

Barnes Jewish St. Peters Hospital con't.

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

Principle Products(s):

Raw Material(s):

Barnes Jewish Hospital is a General Medical/Surgical facility. There are 127 beds, averaging a 78% occupancy rate. All hazardous waste and pharmaceutical waste are hauled off site for disposal. Laundry is done at an offsite location. Disinfection is done by a private company and any cloths or mop heads are taken offsite by the contractor. The cooling tower water and the boiler room water are in closed loop systems and do not discharge to the sanitary sewer. The wastewater discharged is primarily domestic sanitary waste with the potential for higher than normal BOD and COD.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 0030970	1

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

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

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

20.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

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

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

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

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

21.4 Waste Treatment

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

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

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

If intermittent, describe the discharge schedule:

END OF PART F

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
St. Peters Spencer Creek STP	MO- 0030970	1

PART G – COMBINED SEWER SYSTEMS

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

22. GENERAL INFORMATION

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

A. All CSO Discharges.

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

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

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

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

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

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

D. Locations of Flow-Regulating Devices.

E. Locations of Pump Stations.

22.3 Percent of collection system that is combined sewer 0%

22.4 Population served by combined sewer collection system

22.5 Name of any satellite community with combined sewer collection system

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

23.1 Description of Outfall

a. Outfall Number

b. Location

c. Distance from Shore (if applicable) _____ ft

d. Depth Below Surface (if applicable) _____ ft

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

☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO

☐ CSO Flow Volume ☐ Receiving Water Quality

f. How many storm events were monitored last year?

23.2 CSO Events

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

b. Give the Average Duration Per CSO Event

Hours ☐ Actual ☐ Approximate

c. Give the Average Volume Per CSO Event

Million Gallons ☐Actual ☐ Approximate

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

23.3 Description of Receiving Waters

a. Name of Receiving Water

b. Name of Watershed/River/Stream System

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

d. Name of State Management/River Basin

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

23.4 CSO Operations

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

END OF PART G

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FINANCIAL QUESTIONNAIRE

NOTE ▶	FINANCIAL INFORMATION THAT IS NOT PROVIDED THROUGH THIS FORM WILL BE OBTAINED BY THE DEPARTMENT FROM READILY AVAILABLE SOURCES.

1. GENERAL INFORMATION

FACILITY NAME Saint Peters - Spencer Creek WWTP	PERMIT NUMBER #MO- 0030970
CITY Saint Peters	COUNTY Saint Charles
☑ PERMIT RENEWAL/MODIFICATION ☐ STATE REVOLVING FUND APPLICATION	SRF PROJECT NUMBER (IF APPLICABLE) C295

2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES)

2.1	Number of connections to the facility: Residential 18475 Commercial 916 Industrial _____	
2.2	Current sewer user rate: *Based on a 5,000 gallon per month usage* $ 15.78 $2.42/1,000 gallons of water usage +$3.68 minimum billing charge	The sewer user rate is (check one): ☑ Rate Capacity (set rate) ☑ Pay as You Go
2.3	Current operating costs for the facility (excludes depreciation): FY16 excludes capital and debt	$4,246,345
2.4	Bond Rating (if applicable):	Attachment A
2.5	Bonding Capacity: *General obligation bond capacity allowed by constitution: cities=up to 20% of taxable tangible property; sewer districts=up to 5% of taxable tangible property*	Attachment A and CAFR Page 62
2.6	Current outstanding debt relating to wastewater collection and treatment: *Debt information is typically available from your community's annual financial statements*	Attachment A and CAFR Page 58
2.7	Amount of current user rate per household per month used toward payments on wastewater debt:	34% of $2.42 variable rate-Attachment B
2.8	Net direct debt: *Net direct debt is the total amount of outstanding general obligation debt, including notes and short-term financing.*	CAFR Page 97
2.9	Overlapping debt: *Overlapping debt is the financial obligations of one political jurisdiction that also falls partly on a nearby jurisdiction.*	CAFR Page 97
2.10	Overall net debt: *Overall net debt is defined as debt repaid by property taxes within a utility/municipality's service area. It excludes debt that is repaid by special user fees (e.g. revenue bonds). Overall net debt = Net direct debt + Overlapping debt. Debt information is typically available from your community's annual financial statements*	CAFR Page 103
2.11	Attach any relevant financial statements.	

3. FINANCIAL INFORMATION SPECIFIC TO MUNICIPALITIES

3.1	Municipality's Full Market Property Value (FMPV): *FMPV data is typically available through your community or state assessor's office*	2015 Tax Year $4,707,782,016
3.2	Municipality's property tax revenues: *Property tax revenues are typically available from your community's annual financial statements*	CAFR Page 27
3.3	Municipality's property tax collection rate: *To determine the collection rate, you will need to divide property tax revenues by the property taxes levied. To calculate property taxes levied, multiply the assessed value of real property within your community/service area by the property tax rate. This information is typically available through your community or state assessor's office. Property tax revenues are typically available in your community's annual financial statements.*	CAFR Page 99

4. FINANCIAL INFORMATION SPECIFIC TO SEWER DISTRICTS

4.1 Total connections to the sewer district: Residential 18475 Commercial 916 Industrial _____

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

Cost of system re generally allocated to all users of the system. There are a few circumstances where special service areas have been created to bear the costs of extraordinary improvements needed to serve the needs of that special area.

5. OTHER CONSIDERATIONS (ALL FACILITIES)

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

Attachment C - pages from the City's Capital Improvement Plan

5.2 Provide a list of any other relevant local community economic conditions that may impact the ability to afford new permit requirements or the proposed SRF project. (See Community Supplemental Survey on the following page):

6. CERTIFICATION

FINANCIAL CONTACT	OFFICIAL TITLE
Beth French	Director of Finance
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
bfrench@spetersmo.net	(636) 477-6600

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

OWNER OR AUTHORIZED REPRESENTATIVE	OFFICIAL TITLE
Beth French	Director of Finance
SIGNATURE	DATE SIGNED
Beth [signature]	10-20-2015

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

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

For more information regarding your State Revolving Fund Application, contact the department's Water Protection Program at 573-751-1300, to speak with a project coordinator in the Financial Assistance Center.

This completed form and any attachments should be submitted to one of the following:

For Submittal of Permit Renewal/Modification:	For Submittal of SRF Applications:
Department of Natural Resources Water Protection Program ATTN: NPDES Operating Permits Section P.O. Box 176 Jefferson City, MO 65102	Department of Natural Resources Water Protection Program ATTN: Financial Assistance Center P.O. Box 176 Jefferson City, MO 65102

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

Community Supplemental Survey

PLEASE ANSWER THE FOLLOWING APPLICABLE QUESTIONS. (ATTACH ADDITIONAL SHEETS AS NECESSARY)

1. Are there any significant transportation corridors within 20 miles of your community?
If yes, please explain. (Example: major interstate, railroad center)

Attachment D

2. Are there any significant manufacturing or employment centers within 20 miles of your community?
If yes, please explain. (Example: commercial farming, manufacturing, government operation, big box store)

Attachment D

3. Where do the majority of children in your community receive their education?
(Please check appropriate box for each education level)

Elementary	☑ Within your community	☐ Within 20 miles	☐ Farther than 20 miles
Middle School	☑ Within your community	☐ Within 20 miles	☐ Farther than 20 miles
High School	☑ Within your community	☐ Within 20 miles	☐ Farther than 20 miles

4. Considering your community's tax base, debt level, ability to bond capital improvement projects, or repay loans, how likely is it that your community could afford to pay for the following:

	Very Unlikely	Unlikely	Likely	Very Likely
4.1 An upgrade or replacements to your wastewater system costing $50,000				✓
4.2 An upgrade or replacements to your wastewater system costing $250,000				✓
4.3 An upgrade or replacements to your wastewater system costing $1 million				✓

5. Which of the following best describes anticipated population change for your community over the next ten years?

☐ Significant Decrease ☐ Decrease ☑ Remain the Same ☐ Increase ☐ Significant Increase

6. Check the appropriate boxes in the following statements as it relates to the population change you predicted in questions 5.

6.1 Over the past 20 years the population has:

☐ Significantly Decreased ☐ Decreased ☐ Remained the Same ☑ Increased ☐ Significantly Increased

6.2 The majority of the population in the community is retired or is near retirement.

☐ Definitely False ☐ Probably False ☐ Probably True ☐ True ☑ Unknown

6.3 The majority of young people leave the community in search of employment or education elsewhere.

☐ Definitely False ☐ Probably False ☐ Probably True ☐ True ☑ Unknown

6.4 In the foreseeable future, the employment opportunity in or around the community will:

☐ Significantly Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significantly Increase

6.5 In the foreseeable future the economic activity in or around the community will:

☐ Significantly Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significantly Increase

6.6 In the foreseeable future the tax base of the community will:

☐ Significantly Decrease ☐ Decrease ☐ Remain the Same ☑ Increase ☐ Significantly Increase

6.7 It is _____ for the community to meet its debt obligations.

☐ Difficult ☐ Somewhat Difficult ☐ Somewhat Easy ☑ Easy ☐ No Debt

7. What other issues or information should be considered when determining population stability or the financial ability for your community to pay for significant capital investments? Attach sheets as necessary.
(Example: Seasonal population changes, natural resources (lakes, rivers), age of infrastructure, significant employment changes, etc.)

CAFR - Transmittal Letter, MD&A and Statistic Section

8. Should an existing or proposed regional wastewater district be willing to connect, own, or operate your current facility, how likely would you be to consider this as an option?

Very Unlikely	Unlikely	Likely	Very Likely
✓			

Item 2.4
The City has the following bond ratings assigned by Moody's Investor Service:
Aa2 for our General Obligation Bonds and Combined Waterworks and Sewerage System Revenue Bonds;
Aa3 for our Certificates of Participation Series 2010A and taxable Series 2010B;
and A1 for our Refunding Certificates of Participation Series 2010C and Refunding Certificates of Participation Series 2013

Item 2.5
All Waterworks and Sewerage System Revenue Bonds were issued after voter approval that authorized the bonds.

Under the statutes of the State of Missouri, the limit of bonded indebtedness is 10% of the most recent assessed valuation. This does not include an additional debt limit of 10% assessed valuation available for street improvements or waterworks and electric plants as provided under the statutes of the State of Missouri. The computation is as follows:

Legal Debt Margin as of September 30, 2015: **(unaudited year-end results on a budget basis)**	
Assessed value - 2014 tax year	1,024,251,891
Debt limit - 10% of assessed valuation	102,425,189
Amount of debt applicable to debt limit:	
Total general obligation bonded debt	42,251,700.00
Less: Amount available in debt service fund	(952,713.00)
Bond indebtedness applicable to debt limit	41,298,987.00
Legal debt margin	61,126,202.10

Item 2.6

Series of Bonds	Year/Series	Issued	Outstanding September 30, 2014	Proceeds	Principal Payments	Outstanding September 30, 2015
General Obligation Bonds, Series 2007	2007	$7,000,000.00	7,000,000.00	-	7,000,000.00	-
General Obligation Bonds, Series 2008	2008	$16,000,000.00	16,000,000.00	-	-	16,000,000.00
General Obligation Refunding Bonds, Series 2010	2010	$2,520,000.00	2,175,000.00	-	285,000.00	1,890,000.00
General Obligation Bonds, Series 2010B	2010B	$3,790,000.00	3,790,000.00	-	-	3,790,000.00
General Obligation Refunding Bonds, Series 2011	2011	$5,150,000.00	2,350,000.00	-	1,620,000.00	730,000.00
General Obligation Bonds, Series 2012	2012	$4,000,000.00	3,665,000.00	-	170,000.00	3,495,000.00
General Obligation Bonds, Series 2014	2014	$9,675,000.00	9,675,000.00	-	385,000.00	9,290,000.00
General Obligation Refunding Bonds, Series 2015	2015	$7,050,000.00	-	7,050,000.00	-	7,050,000.00
Neighborhood Improvement District Bonds (Crown Colony Phase One), Series 2006	2006	$52,700.00	12,700.00	-	6,000.00	6,700.00
Total Governmental Bonds			**44,667,700.00**	**7,050,000.00**	**9,466,000.00**	**42,251,700.00**
Certificates of Participation (City of St. Peters, Missouri, Lessee), Series 2010A	2010A	$870,000.00	240,000.00	-	50,000.00	190,000.00
Certificates of Participation - Taxable (City of St. Peters, Missouri, Lessee), Series 2010B	2010B	$8,805,000.00	7,410,000.00	-	360,000.00	7,050,000.00
Certificates of Participation Refunding (City of St. Peters, Missouri, Lessee), Series 2010C	2010C	$1,725,000.00	1,375,000.00	-	120,000.00	1,255,000.00
Certificates of Participation Refunding (City of St. Peters, Missouri, Lessee), Series 2013	2013	$18,540,000.00	17,380,000.00	-	980,000.00	16,400,000.00
Revenue Notes (Premier 370 Project) Series 2008A	2008A	$18,000,000.00	13,305,000.00	-	-	13,305,000.00
Tax-Exempt Tax Increment Revenue Notes, Series 2001	2001	$4,367,000.00	3,717,000.00	-	2,075,000.00	1,642,000.00
Total Annual Appropriation Bonds			**43,427,000.00**	**-**	**3,585,000.00**	**39,842,000.00**
Combined Waterworks and Sewerage System Revenue Bonds, Series 1999	1999	$5,665,291.30	790,000.00	-	790,000.00	-
Combined Waterworks and Sewerage System Revenue Bonds, Series 2003	2003	$6,831,690.75	11,450,000.00	-	570,000.00	10,880,000.00
Combined Waterworks and Sewerage System Revenue Bonds, Series 2007	2007	$19,999,780.30	20,000,000.00	-	495,000.00	19,505,000.00
Combined Waterworks and Sewerage System Revenue Bonds, Series 2009	2009	$5,000,000.00	5,000,000.00	-	75,000.00	4,925,000.00
Combined Waterworks and Sewerage System Revenue Bonds, Series 2015	2015	$7,500,000.00	-	7,500,000.00		7,500,000.00
Unaccreted Capital Appreciation on Bonds			(10,214,571.00)			(9,245,994.00)
Total Combined Waterworks and Sewerage System Revenue Bonds			**27,025,429.00**	**7,500,000.00**	**1,930,000.00**	**33,564,006.00**
Sewer Allocation						**27,858,125**

Item 2.11
Link to City Comprehensive Annual Financial Report (CAFR)
http://www.stpetersmo.net/Finance/City%20of%20St.%20Peters%20-%20CAFR%20-%20FINAL.pdf

BILL NO.14-147 I-08

ORDINANCE NO. 6203

AN ORDINANCE AMENDING SECTIONS 705.040 AND 710.260 OF THE CODE OF THE CITY OF ST. PETERS, MISSOURI RELATING TO THE WATER AND SEWER RATES

BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF ST. PETERS, MISSOURI AS FOLLOWS:

SECTION NO. 1 - That Subsection (A) of Section 705.040 Water Rate Structure of the St. Peters City Code shall be amended to read as follows:

A. Occupants and owners of premises connected to the water system of the City shall pay for water drawn from the water system of the City bi-monthly according to readings of the meters in each particular case as follows:

BI-MONTHLY RATE SCHEDULE

Water Usage	Water Rates
Premises within the City Limits of St. Peters	
First 4,000 Gallons (min)	$16.74
Next 6,000 Gallons	3.030/M
Next 10,000 Gallons	2.330/M
All over 20,000 Gallons	1.970/M

SECTION NO. 2 - That Subsection (E) of Section 705.040 Water Rate Structure of the St. Peters City Code shall be amended to read as follows:

E. The commercial/industrial single unit bi-monthly minimum shall be as follows:

Meter Size		
5/8"	Same as Section 1(A)	
3/4"	Same as Section 1(A)	
1"	First 20,000 gallons (Min.)	$58.22
	All over 20,000 gallons	1.970/M
1 1/2"	First 40,000 gallons (Min.)	$97.62
	All over 40,000 gallons	1.970/M
2"	First 60,000 gallons (Min.)	$137.02
	All over 60,000 gallons	1.970/M
3"	First 100,000 gallons (Min.)	$215.82
	All over 100,000 gallons	1.970/M
4" and Larger	First 200,000 gallons (Min.)	$412.82
	All over 200,000 gallons	1.970/M

SECTION NO. 3 - That Subsection (C) of Section 710.260 Sewer Rate Structure of the St. Peters City Code shall be amended to read as follows:

C. (Reference is made to Appendix A & B of this Ordinance, which are on file in the City offices.)

The minimum bi-monthly charge shall be $3.68 of which $1.53 is for billing and collection and $2.15 is for treatment of Infiltration and Inflow. In addition, each contributor shall pay a user charge rate of $2.42 per 1,000 gallons of water (or wastewater) as determined in Section 6 of Appendix A to this Ordinance, of which $1.60 is for operation and maintenance and $0.82 is for debt service.

SECTION NO. 4 - That Subsection (D) of Section 710.260 Sewer Rate Structure of the St. Peters City Code shall be amended to read as follows:

D. (Reference is made to Appendix A, which is on file in the City offices.) For those customers who contribute wastewater, the strength of which is greater than normal domestic sewage, a surcharge in addition to the normal user charge will be collected. The surcharge for operation and maintenance including replacement is:

$.34 ..... per pound BOD
$.21 ..... per pound SS
$.17 ..... per pound COD

SECTION NO. 5 - This Ordinance shall be in full force and effect for bills issued after October 1, 2014.

SECTION NO. 6. Savings Clause

Nothing contained herein shall in any manner be deemed or construed to alter, modify, supersede, supplant or otherwise nullify any other Ordinance of the City or the requirements thereof whether or not relating to or in any manner connected with the subject matter hereof, unless expressly set forth herein.

SECTION NO. 7. Severability Clause

If any term, condition, or provision of this Ordinance shall, to any extent, be held to be invalid or unenforceable, the remainder hereof shall be valid in all other respects and continue to be effective and each and every remaining provision hereof shall be valid and shall be enforced to the fullest extent permitted by law, it being the intent of the Board of Aldermen that it would have enacted this Ordinance without the invalid or unenforceable provisions. In the event of a subsequent change in applicable law so that the provision which had been held invalid is no longer invalid, said provision shall thereupon return to full force and effect without further action by the City and shall thereafter be binding.

Read two times, passed and approved this 28th day of August, 2014.

As Presiding Officer and as Mayor
Len Pagano, Mayor

Attest: Patricia E. Smith
Patricia E. Smith, City Clerk

No. 6203

APPENDIX "A" TO SEWER USER CHARGE ORDINANCE

This appendix presents the methodology to be used in calculating user charge rates and surcharges and illustrates the calculations followed in arriving at the first year's user charges and surcharges. The unit costs established in this appendix are based on estimates of expenses and loadings. The actual expenses and loadings that occur may differ from these estimates and certainly they will change as time passes. Therefore, the unit costs must be reestablished whenever necessary to reflect actual expenses and loadings. Once the system is in use, the expenses and loadings can be determined from operating records and the unit costs can be adjusted based on these figures.

1. Expenses: The total annual expenses associated with the treatment works, as defined in Section 2(k) (8) of Ordinance No. 573, are estimated as follows:

	Budget			
	Wastewater	Water	Combined Customer Surcharge	Total
Billing and Collection	170,939	184,305	0	355,245
Administrative	340,998	344,143	200	685,340
Utilities (Electric, Gas, Telephone)	445,200	263,800	0	709,000
Labor (Incl. Fringe Benefits)	1,882,548	1,899,492	222,940	4,004,980
Material Costs	205,340	1,250,345	6,360	1,462,045
Replacement Costs	598,200	297,550	7,000	902,750
Debt Service	1,661,205	468,545	0	2,129,750
Purchase of Equipment	337,750	665,200	0	1,002,950
Other	495,050	322,150	12,600	829,800
Sub-Total	6,137,230	5,695,530	249,100	12,081,860

2. Allocation of Expenses: The total operation and maintenance including replacement expense is allocated to the appropriate pollutants in the following manner:

Annual $ to Treat Annual Flow = % annual cost allocated to flow x (total annual O & M budget minus billing & collection, treatment of I & I, and debt service) (45%) = 1,829,289

Annual $ to Treat Annual BOD = % annual cost allocated to BOD x (total annual O & M budget minus billing and collection, treatment of I & I, and debt service) (35%) = 1,422,780

Annual $ to Treat Annual SS = % annual cost allocated to SS x (total annual O & M budget minus billing & collection, treatment of I & I, and debt service) (20%) = 813,017

3. Loadings:

The hydraulic loading is estimated to be 2,029,843,000 gal/year
The BOD loading is estimated to be 4,196,000 pounds/yr
The SS loading is estimated to be 3,838,000 pounds/yr

4. Unit Costs:

Initial unit cost for Debt Service in $/Gals =

Annual Debt Service	1,661,205	=	0.82 /M
Est. Annual Hydraulic Loading	2,029,843,000		

Initial unit cost for Flow in $/Gals =

Annual Cost to Treat Annual Flow	1,829,289	=	0.90 /M
Est. Annual Hydraulic Loading	2,029,843,000		

Initial unit cost for BOD in $/Pound =

Annual Cost to Treat Annual BOD	1,422,780	=	0.34 /lb
Est. Annual BOD Loading	4,196,000		

Initial unit cost for SS in $/Pound =

Annual Cost to Treat Annual SS	813,017	=	0.21 /lb
Est. Annual SS Loading	3,838,000		

The unit cost for BOD and SS are to be inserted in Section 6 of this Appendix.

5. Minimum Charge:

Annual Billing and Collection Cost	170,939
Annual cost to treat infiltration/inflow (assumed clear water) including costs to investigate / determine sources and perform remedial work on sewers and appurtenances = unit costs to treat flow annual infiltration/inflow	240,000
Total Annual Minimum Cost	410,939
Minimum Charge/User/Billing Period (410,939/18,600/6)	3.68

This minimum charge/user/billing period is to be inserted in Section 2 of this Ordinance.

6. Residential User Unit Charge: The residential user unit charge is calculated as follows using the pollutant concentration defining normal domestic wastewater in Section 2 (k) (2), of Ordinance No. 573.

Debt Service unit charge = unit flow charge	.82/M
System Operating Charge = unit flow charge	.15/M
Residential unit charge = unit flow charge	.90/M
+ (unit BOD charge) $(BOD_{ND})200(0.00834)$	.34/M
+ (unit SS charge) $(SS_{ND})225(.00834)$	.21/M
	$ 2.42/M gal.

Where: Residential unit charge is in $/1000 gal.
* Unit flow charge is in $/1000 gal. from Paragraph 4
* Unit BOD charge is in $/lb. BOD from Paragraph 4
* Unit SS charge is in $/lb. SS from Paragraph 4

- BOD_{ND} is the normal domestic BOD strength in milligrams liter (mg/l) as defined in Section 710.010 of the Code of the City of St Peters and .00834 is a unit conversion factor.
- SS_{ND} is the normal domestic SS strength in mg/l as defined in Section 710.010 of the Code of the City of St Peters and .00834 is a unit conversion factor.

This total residential unit charge is to be inserted in Section 3 of this Ordinance.

7. Extra Strength Users: For users who contribute wastewater that has greater strength than normal domestic wastewater, the users charge will be calculated as follows:

Total bi-monthly charge is extra strength user =
charge to residential user + surcharge for BOD (if appropriate) + surcharge for SS (if appropriate) + surcharge for COD (if appropriate)

Total bi-monthly charge to extra strength users:
minimum charge
+v(residential unit charge)
+v(unit BOD charge) $(BOD_{ES} - BOD_{ND})$ (.00834)
+v(unit SS charge) $(SS_{ES} - SS_{ND})$ (.00834)
+v(unit COD charge) $(COD_{reported} - COD_{limit})$ (.00834)

Where: Total bi-monthly charge to extra strength user is in dollars.
* Minimum charge is in dollars as calculated in paragraph 5
* v is the volume of wastewater in 1000 gallons discharged by the extra strength user during the billing period.
* Residential unit charge is in $/1000 gal. as calculated in paragraph 6.
* Unit BOD charge is in $/lb. BOD from paragraph 4.
* Unit SS charge is in $/lb. SS from paragraph 4.
* Unit COD Surcharge Rate ($/lb) = 50% of BOD Rate ($/lb)
* BOD_{ES} is the reported BOD concentration in milligrams per liter (mg/l) contributed by the extra strength user during the billing period.
* SS_{ES} is the reported SS concentration in mg/l contributed by the extra strength user during the billing period.
* BOD_{ND} is the normal domestic BOD strength in milligrams liter (mg/l) as defined in Section 710.010 of the Code of the City of St Peters and .00834 is a unit conversion factor.
* SS_{ND} is the normal domestic SS strength in mg/l as defined in Section 710.010 of the Code of the City of St Peters and .00834 is a unit conversion factor.
* $COD_{reported}$ is the reported COD strength in mg/l as reported by the extra strength user in accordance to their Industrial Wastewater Discharge Permit.
* COD_{limit} is the local COD limit as defined in Section 710.010 of the Code of the City of St Peters and .00834 is a unit conversion factor

STORM WATER PROJECTS SUMMARY	2015/16	2016/17	2017/18	2018/19	2019/20	FY16 – FY20 Total
50/50 Storm Water Erosion Control Program	100,000	100,000	100,000	100,000	100,000	500,000
Storm Water Project Maintenance & Preservation	243,000	258,000	293,000	308,000	323,000	1,425,000
Other Storm Water Department Maintenance	282,500	282,500	282,500	282,500	282,500	1,412,500
Subtotal: Storm Water Maintenance (Including 50/50)	625,500	640,500	675,500	690,500	705,500	3,337,500
Storm Water Vehicles	98,000	0	0	222,000	0	320,000
Miscellaneous Items Under $50,000	8,300	0	0	0	0	8,300
Subtotal: Storm Water Capital	106,300	0	0	222,000	0	328,300
TOTAL STORM WATER PROJECTS	**$731,800**	**$640,500**	**$675,500**	**$912,500**	**$705,500**	**$3,665,800**

STORM WATER PROJECTS SUMMARY	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	FY13 – FY20 Total
Storm Water Control Projects	19,641	375,635	1,283,165	0	0	0	0	0	1,678,441
Storm Water Control Projects – Group 1	407,678	1,680,144	1,769,457	95,325	95,325	0	0	0	4,047,929
Storm Water Control Projects – Group 2	253,060	831,407	2,101,396	72,800	72,800	0	0	0	3,331,463
Storm Water Control Projects – Group 3	122,520	184,847	1,303,433	53,000	53,000	0	0	0	1,716,800
Storm Water Control Projects – Group 4	0	0	350,000	2,644,000	0	0	0	0	2,994,000
Storm Water Control Projects – Group 5	0	0	300,000	1,700,000	0	0	0	0	2,000,000
Storm Water Control Projects – Group 6	0	0	1,000,000	1,000,000	800,000	0	0	0	2,800,000
Storm Water Control Projects – Group 7	0	0	800,000	3,725,000	0	0	0	0	4,525,000
Storm Water Control Projects – Group 8	0	0	70,000	320,000	0	0	0	0	390,000
Storm Water Control Projects – Group 9	0	0	0	0	0	2,500,000	2,500,000	2,500,000	7,500,000
Subtotal: Storm Water Projects	802,899	3,072,033	8,977,451	9,610,125	1,021,125	2,500,000	2,500,000	2,500,000	30,983,633
TOTAL STORM WATER PROJECTS	**$802,899**	**$3,072,033**	**$8,977,451**	**$9,610,125**	**$1,021,125**	**$2,500,000**	**$2,500,000**	**$2,500,000**	**$30,983,633**

Project Funding - Local Parks and Storm Water Fund Bond Projects

Projected Fund Activity

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Beginning Balance - Contingency	$0	$3,470,173	$10,303,132	$1,325,681	$1,715,556	$694,431	$5,694,431	$3,194,431
Revenue								
Bond Proceeds	4,000,000	9,675,000	0	10,000,000	0	7,500,000	0	0
Interest Income	323	324	0	0	0	0	0	0
Other	272,749	229,668	0	0	0	0	0	0
Total Revenue	4,273,072	9,904,992	0	10,000,000	0	7,500,000	0	0
Expenditures								
Storm Water Control Projects	19,641	375,635	1,283,165	0	0	0	0	0
Storm Water Control Projects - Group 1	407,678	1,680,144	1,769,457	95,325	95,325	0	0	0
Storm Water Control Projects - Group 2	253,060	831,407	2,101,396	72,800	72,800	0	0	0
Storm Water Control Projects - Group 3	122,520	184,847	1,303,433	53,000	53,000	0	0	0
Storm Water Control Projects - Group 4	0	0	350,000	2,644,000	0	0	0	0
Storm Water Control Projects - Group 5	0	0	300,000	1,700,000	0	0	0	0
Storm Water Control Projects - Group 6	0	0	1,000,000	1,000,000	800,000	0	0	0
Storm Water Control Projects - Group 7	0	0	800,000	3,725,000	0	0	0	0
Storm Water Control Projects - Group 8	0	0	70,000	320,000	0	0	0	0
Storm Water Control Projects - Group 9	0	0	0	0	0	2,500,000	2,500,000	2,500,000
Total Expenditures	802,899	3,072,033	8,977,451	9,610,125	1,021,125	2,500,000	2,500,000	2,500,000
Income (Loss)	3,470,173	6,832,959	(8,977,451)	389,875	(1,021,125)	5,000,000	(2,500,000)	(2,500,000)
Ending Balance - Contingency	$3,470,173	$10,303,132	$1,325,681	$1,715,556	$694,431	$5,694,431	$3,194,431	$694,431

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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

These projects involve the construction of storm water quality improvements previously designed to reduce flooding and improve drainage and water quality at specific locations in the City.
These projects include:

- Project #HS-1 (P-5): Homestead Estates channel improvements
- Project #HST-1 (P-4): Henry Street storm sewer improvements
- Project P-13: South Gatty/Rainbow Drive storm sewer improvements
- Project PW: Boone Hills/Indacom municipal facility bioswails for MCM-6 BMPs

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality throughout the watershed.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce flooding by upgrading the existing storm sewer infrastructure in Old Town south area. Reduce erosion concerns and restore quality stream channels and riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Prior Years	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	1,678,441	0	0	0	0	0	0	1,678,441
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	1,678,441	0	0	0	0	0	0	1,678,441
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 1
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

These projects involve the design and construction of storm water quality retrofits to existing detention basins and associated limited stream bank stabilization improvements as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. In addition, each project includes two additional years of maintenance of vegetative plantings after the initial 1-year warranty period.

These projects are included in Group 1:

- Project #P-1: Country Creek south basin, Country Creek north basin, Canyon Creek basin & channel
- Project #P-2: Country Lake Estates basin, Turnberry Bluffs & Turnberry Gardens basin, St. Peters Villas basin
- Project #P-6: Pegasus Farms north basin, Pegasus Farms south basin, Athens channel, Willott Square basin
- Project #P-8: Country Crossing Estates in-line basin & channel, Country Crossing Estates channel
- Project #P-9: Ohmes Farm, six detention basins
- Project #P-11: Applewood basin, Enwood basin

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, native plantings, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce erosion concerns and restore quality stream channels and riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Prior Years	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	3,857,279	95,325	95,325	0	0	0	190,650	4,047,929
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	3,857,279	95,325	95,325	0	0	0	190,650	4,047,929
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 2
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

These projects involve the design and construction of stream stabilization improvements for five stream channel reaches and storm water quality retrofits to four existing detention basins as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. In addition, each project includes two additional years of maintenance of vegetative plantings after the initial 1-year warranty period.

These projects are included in Group 2:

- Project #P-7: Stabilization improvements to the Calwood stream reach within Englewood, Summer Hill Condos, and Sunny Hill Estates
- Project #P-10: Stabilization improvements to the channel reach within Crescent Hills, Springwood, and Hanover Crossing
- Project #P-14: Detention basin retrofits to four basins within The Highlands and associated channel improvements

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, native plantings, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce erosion concerns and restore quality stream channels and riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Prior Years	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	3,185,863	72,800	72,800	0	0	0	145,600	3,331,463
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	3,185,863	72,800	72,800	0	0	0	145,600	3,331,463
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 3
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

This project includes the design and construction of storm water quality improvements to an existing regional detention basin, improvements to local drainage infrastructure, creation of a new upstream detention basin, and stream stabilization improvements for a stream reach entering the existing basin as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. In addition, each project includes two additional years of maintenance of vegetative plantings after the initial 1-year warranty period. This project is included in Group 3:

- Project #P-3: McClay Valley detention basin and Woodbriar channel

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, buffer strips, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce erosion concerns and restore quality stream channels and riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Prior Years	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	1,610,800	53,000	53,000	0	0	0	106,000	1,716,800
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	1,610,800	53,000	53,000	0	0	0	106,000	1,716,800
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 4
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

These projects include the design and construction of improvements to address flooding by replacing the existing culvert at Boone Hills Drive and stream stabilization and riparian renovation along the stream reach between Boone Hills Drive and Sutters Mill Road as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. In addition, each project includes two additional years of maintenance of vegetative plantings after the initial 1-year warranty period.

These projects are included in Group 4:

- Project #P-17: Boone Hills Drive box culvert replacement
- Project #P-18: Spencer Creek improvements between Boone Hills Drive and Sutters Mill

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce flooding by replacing existing box culvert. Reduce erosion concerns and restore quality stream channels and riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Current Year	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	350,000	2,644,000	0	0	0	0	2,644,000	2,994,000
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	350,000	2,644,000	0	0	0	0	2,644,000	2,994,000
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 5
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

This project includes the design and construction of stream stabilization improvements to address severe bank erosion and head cutting in two stream channel reaches as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. In addition, each project includes two additional years of maintenance of vegetative plantings after the initial 1-year warranty period.
These projects are included in Group 5:

- Project #P-15: Wolfrum Way channel improvements (Highlands & Highlands Estates)
- Project #P-16: Deer Meadow Court channel improvements (Highlands Estates)

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality throughout the watershed.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce erosion concerns, stabilize bed profile, and restore quality riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Current Year	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	300,000	1,700,000	0	0	0	0	1,700,000	2,000,000
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	300,000	1,700,000	0	0	0	0	1,700,000	2,000,000
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 6
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

These projects involve the design and construction of storm water quality retrofits to existing detention basins, improvements to reduce flooding, and stream bank stabilization improvements at specific locations throughout the City as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. These projects are included in Group 6:

- Project #IP-7368-4-3: Spencer Creek in Millwood (flooding, stream stability)
- Project #IP-7269-1-1: Colby Drive (stream stability)
- Project #IP-7369-3-2: Spencer Trail (stream stability)
- Project #IP-7467-3-1: Windwood detention basin retrofit
- P-24: Rachels Trail/Forest Grove/Shining Rock (flooding)
- Project #IP-6970-1-2: Richmond (detention)
- Project #IP-7267-4-3: Park Ridge Estates (stream stability, detention)
- Project #IP-6968-2-3: Country Crossing Manor basin (detention)
- P-20: Parkdale/Blackwood Lane stream restoration (flooding, stream stability)

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, buffer strips, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce flooding concerns, erosion concerns, stabilize bed profile, and restore quality riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Current Year	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	1,000,000	1,000,000	800,000	0	0	0	1,800,000	2,800,000
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	1,000,000	1,000,000	800,000	0	0	0	1,800,000	2,800,000
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 7
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

These projects involve the design and construction of storm water quality retrofits to existing detention basins, improvements to reduce flooding, and stream bank stabilization improvements at specific locations throughout the City as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. These projects are included in Group 7:

- Project #IP-7369-4-1 (P-22): West Drive (detention and stream stability)
- Project #IP-7467-1-3 (P-21): Sun River Village (stream stability, detention)
- Project #IP-7369-3-3: St. Peters Condos Basin (detention)
- Project #IP-7468-1-1 (P-19): Huntleigh Estates (detention)
- Project #IP-7369-2-1 (P-23): Boone Hills Dr. & Jungermann Rd. (flooding, stream stability, detention)
- Project #IP-7366-3-1 (P-12): Novella Ct. (flooding, preservation)
- Project #IP-7467-1-4 (P-21): Ferber property purchase & detention basin
- Calwood stream restoration west of Salt Lick Road

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, buffer strips, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce flooding concerns, erosion concerns, stabilize bed profile, and restore quality riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Current Year	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	800,000	3,725,000	0	0	0	0	3,725,000	4,525,000
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	800,000	3,725,000	0	0	0	0	3,725,000	4,525,000
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

CITY OF ST. PETERS
CAPITAL IMPROVEMENT PLAN
FY 2014/15 – 2019/20

FUND	Local Parks and Storm Water
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 8
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

This project includes the design and construction of storm water quality retrofits to existing detention basins, improvements to reduce flooding, and stream bank stabilization improvements at specific locations throughout the City as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan.
This project is included in Group 8:

- Project #IP-7368-1-4: Tanglewood (stream stability)

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, buffer strips, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce flooding concerns, erosion concerns, stabilize bed profile, and restore quality riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Current Year	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	70,000	320,000	0	0	0	0	320,000	390,000
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	70,000	320,000	0	0	0	0	320,000	390,000
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

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FUND	Storm Water Bond Fund
DEPARTMENT	Storm Water

PROJECT TITLE	Storm Water Control Projects – Group 9
PROJECT LOCATION	Various locations (listed under Description)

DESCRIPTION AND EXISTING CONDITION

This project includes the design and construction of storm water quality retrofits to existing detention basins, improvements to reduce flooding, and stream bank stabilization improvements at specific locations throughout the City as identified in the 2012 City of St. Peters Storm Water Watershed Master Plan. These projects are included in Group 9:

- Project #IP-7368-3-1: Channel behind Jungermann Office Center (stream stability)
- Project #IP-7370-3-1: East branch of Spencer, downstream of IP-7370-4-1 (stream stability)
- Project #IP-7370-4-1: East branch of Spencer, denuded reach downstream of Jungermann Road (stream stability)
- Project #IP-7268-4-1: Hidden Lake basin retrofit (detention)
- Misc. projects from 2012 Stormwater Master Plan

LONG-TERM GOALS	IMPACT ON GOAL ACHIEVEMENT (FILL IN ALL APPLICABLE SECTIONS)
Continue necessary City services	Continue compliance with MDNR MS4 regulations. Improve water quality by retrofitting basins with forebays, buffer strips, modified outlet controls, and other alternatives.
Implement and follow the City's Comprehensive Plan	
Ensure satisfactory green space is available	
Maintain infrastructure that is in place	Reduce flooding concerns, erosion concerns, stabilize bed profile, and restore quality riparian corridors.
Maintain an aesthetically pleasing community	
Encourage economic development	
Conserve energy and reduce costs	
Implications of deferring the project	Non-compliance with MDNR MS4 regulations.

CAPITAL COSTS	Current Year	2015/16	2016/17	2017/18	2018/19	2019/20	FY 16 – FY 20 Total	Total Project
Land & Improvements	0	0	0	2,500,000	2,500,000	2,500,000	7,500,000	7,500,000
Building & Improvements	0	0	0	0	0	0	0	0
Furniture & Fixtures	0	0	0	0	0	0	0	0
Machinery & Equipment	0	0	0	0	0	0	0	0
Computer Equipment	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
TOTAL	0	0	0	2,500,000	2,500,000	2,500,000	7,500,000	7,500,000
Maint. & Oper. Costs	0	0	0	0	0	0	0	0
New Personnel Costs	0	0	0	0	0	0	0	0

WATER/SEWER FUND PROJECTS SUMMARY	2015/16	2016/17	2017/18	2018/19	2019/20	FY16 – FY20 Total
Vehicles	286,000	284,000	427,000	218,000	250,000	1,465,000
Rolling Stock and Equipment	72,500	290,000	140,000	145,000	170,000	817,500
Water Meter Replacement Program	200,000	225,000	370,000	400,000	400,000	1,595,000
Water Storage Tank Overhaul	100,000	280,000	0	0	120,000	500,000
Building Improvements	20,000	0	0	0	0	20,000
Subtotal: Water/Sewer Capital	678,500	1,079,000	937,000	763,000	940,000	4,397,500
Sanitary Sewer Rehabilitation or Replacement	275,000	300,000	325,000	350,000	375,000	1,625,000
Other Water/Sewer Utility System Maintenance	334,000	306,500	306,500	306,500	306,500	1,560,000
Subtotal: Water/Sewer Major Maintenance	609,000	606,500	631,500	656,500	681,500	3,185,000
TOTAL WATER/SEWER FUND PROJECTS	**$1,287,500**	**$1,685,500**	**$1,568,500**	**$1,419,500**	**$1,621,500**	**$7,582,500**

CITY OF ST. PETERS
CAPITAL IMPROVEMENT PLAN
UNFUNDED PROJECTS

Fund	Group	Description	Cost
General	HES	Drive Thru Automated Wash Bay	200,000
General	MPS	Automated Police Evidence Room	24,000
General	PRS	Signage for historical sites	50,000
General	SSS	New Police software	221,520
General	SSS	Second Level Authentication - End User Security	55,140
Local Parks and Storm Water	PRS	Replace the exterior siding at Sports Center Park	150,000
Local Parks and Storm Water	PRS	Place remote surveillance camera in parks	50,000
Local Parks and Storm Water	PRS	Supply electric to outlets on light poles at 370 Lakeside Park	100,000
Local Parks and Storm Water	PRS	Precast concrete masonry wall at Old Town Park	154,000
Local Parks and Storm Water	PRS	370 Lakeside Park Amphitheater development	1,500,000
Local Parks and Storm Water	PRS	Access to Primitive Campsite	250,000
Local Parks and Storm Water	PRS	Rec-Plex Entryway Renovation	1,000,000
Local Parks and Storm Water	PRS	Outdoor Pool	4,500,000
Local Parks and Storm Water	PRS	Golf Course clubhouse renovation	5,000,000
Local Parks and Storm Water	PRS	Tornado Shelters in City Parks	1,500,000
Local Parks and Storm Water	TDS	Storm Water Projects	90,000,000
Transportation Trust Fund	TDS	Mid Rivers Mall Drive Resurfacing III (St. Peters-Howell to Cottleville Pkwy)	1,760,000
Transportation Trust Fund	TDS	I-70 North Outer Road Bridge	1,660,000
Transportation Trust Fund	TDS	Old Towne West Connector (I-70 N to Brown Road)	1,455,000
Transportation Trust Fund	TDS	Queensbrook Extension	2,200,000
Transportation Trust Fund	TDS	Spencer Road @ Premier Parkway Traffic Signal	265,000
Transportation Trust Fund	TDS	Brown Road Resurfacing and Storm Sewer Improvements	800,000
Transportation Trust Fund	TDS	Mexico Road Sidewalk (1st Exec. To Jungermann)	80,000
Transportation Trust Fund	TDS	Adaptive Traffic Signal Control	300,000
Transportation Trust Fund	TDS	Emergency Vehicle Traffic Signal Preemption	480,000
Transportation Trust Fund	TDS	South Outer Road Connector	5,065,000
Transportation Trust Fund	TDS	Salt River Road - 370 Interchange	12,000,000
Transportation Trust Fund	TDS	Cave Springs Interchange	15,000,000
Transportation Trust Fund	TDS	Mid Rivers Mall Drive - Mexico Road Intersection Improvement	1,000,000
Transportation Trust Fund	TDS	Jungermann Road @ McClay Road Right Turn Lane	400,000
Transportation Trust Fund	TDS	Spencer Road Extension (Salt River Road to Lakeside Park Drive)	706,800
Transportation Trust Fund	TDS	Unmetered Service LED Street Light Retrofit Program	558,330
Transportation Trust Fund	TDS	Jungermann Road @ Boone Hills Drive Culvert Replacement	1,500,000
Transportation Trust Fund	TDS	Rapid Flashing Beacons	200,000
Central Materials Processing Facility Fund	HES	Modify DNR permit and construct additional tipping floor for non compacted trash providing additional capacity and safety for our customers	600,000
Recreation Fund	PRS	Place sound proofing panels on walls in gymnasiums	50,000
Recreation Fund	PRS	Replace existing front doors due to worn out hinges that are built into door frame	75,000
Recreation Fund	PRS	Senior/Youth Center	1,000,000
Water Sewer	WES	Brown Road Trunk Sewer Rehab (Pipe Lining I-70 to Hope Ct.)	500,000
Water Sewer	WES	Brown Road PS & FM	2,000,000
Water Sewer	WES	Alluvial Well 15 Replacement	400,000
Water Sewer	WES	Alluvial Well 16 Replacement	386,000
Water Sewer	WES	Alluvial Well 17 Replacement	386,000
Water Sewer	WES	WTP Lime Thickener	1,000,000
Water Sewer	WES	JV St. Louis Water Main Assessment	100,000
Water Sewer	WES	Field Crew Locker Room Building	200,000
Water Sewer	WES	Crescent Hills BPS Electrical Upgrade	55,000
Water Sewer	WES	Cave Springs BPS Electrical Upgrade	40,000
Water Sewer	WES	Kimberly Booster Pumping Station	250,000
Water Sewer	WES	Jungs Station to Woodstone Water Main	540,000
Water Sewer	WES	Sliplining of VCP Pipe Various Areas	1,000,000
Water Sewer	WES	Aerated Curing Pad	2,000,000
Water Sewer	WES	Nutrient Removal	2,000,000

*Water Sewer Fund unfunded projects to be funded by future bond issue.

Item 1
The City of St. Peters, incorporated in 1910, is a fourth class city located in St. Charles County, Missouri. The City currently occupies a land area of 22.4 square miles and services a population of approximately 52,575. The City is traversed by Interstate 70, which provides direct access to St. Louis, approximately 20 miles east of the City, and to Kansas City, approximately 220 miles west of the City. Regularly scheduled air passenger and freight service is available at Lambert St. Louis International Airport located approximately 12 miles east of the City on Interstate 70. Commercial air service is available at two private airports within St. Charles County and at a public airport operated by St. Charles County. Barge service is available on the Mississippi River located approximately 5 miles from St. Peters. The City is served by two railroads; the Norfolk & Southern and the Burlington-Northern, and three common-carrier truck lines.

Item 2
CAFR – List of Top Employers Page 108 &:
There are several major shopping corridors in St. Peters and the City serves as a shopping hub to surrounding communities located throughout St. Charles County. The City's retail service area encompasses an estimated 30-mile radius with a population of approximately 360,000 in the 10-mile radius immediately surrounding the City.

The largest shopping center in St. Peters, Mid Rivers Mall, is also the largest shopping center in St. Charles County. The mall, which opened in 1987, is anchored by four major department stores and has approximately 120 shops, including a food court and a 14-screen Wehrenberg Theater.