Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

AUG 1 0 2018

Camden County Water Supply No. 5
P.O. Box 556
Camdenton, MO 65020

FACILITY NAME: Clearwater Condos WWTF
COUNTY: Camden
PERMIT NUMBER: MO0126985
FORM(S) NEEDED TO RENEW: B

Dear Permittee:

Your National Pollutant Discharge Elimination System permit for the above facility will be expiring on June 30, 2019. A renewal application must be filed 180 days before your current permit expires. Failure to submit a renewal application for a facility that is still in operation is a violation of the Missouri Clean Water Law [644.051 RSMo]. If a complete renewal application is submitted in a timely manner and the Missouri Department of Natural Resources does not issue a new permit before the expiration date of the current permit, the expired permit is administratively continued until the new permit is issued [10 CSR 20-6.010(10)E]. You must submit information on the current nature of the discharge and the status of compliance with the renewal application. You should also forward any information regarding abandonment, non-use, or change in ownership of the facility. Annual fees are the responsibility of the permit holder [10 CSR 20-6.011(1)(G)].

In order to process the application, the appropriate form(s) must be completed, have original signature(s), and include an updated location map. Please be aware that a renewal application must be submitted unless the permit has been terminated. Failure to have a valid permit is a violation of the Missouri Clean Water Law and Regulations.

If the activity covered by this permit has ceased, you must request the termination of your permit by completing a Request for Termination Form J.

The form(s) needed to renew the current permit are listed above. The form(s) can be found at: www.dnr.mo.gov/forms/index.html #WaterPollution under the 'Discharge (Water Pollution)' or 'Termination' heading.

Please send the appropriate completed forms to Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176. Additional information may be obtained at the Department's web site at www.dnr.mo.gov.

Please note that Form I may be required if Wastewater is land applied or irrigated. Please refer to the Department's website for additional information.

If you have any questions pertaining to your permit or need assistance obtaining a form, please contact our office at 573-522-4502.

Thank you for protecting Missouri's natural resources by helping us keep your permit up to date.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW/pc

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

August 31, 2018

Camden Co. PWSD #5 - Cedar Heights Condominiums
P.O. Box 556
Camdenton, Missouri 65020

RE: Engineering Report Services

Dear Ms. Burton:

In 2015, the Missouri Department of Natural Resources – Public Drinking Water Branch awarded funds for Camden County PWSD # 5 Cedar Heights for the purpose of completing an Engineering Report Study to identify potential improvements to the drinking water system. The Department is requesting feedback on the water system's project experience with the Engineering Report Services Grant (ERSG) program process, so that we can evaluate our program and improve the services that we offer. Participation is voluntary, however it is greatly appreciated.

Please complete and return the attached questionnaire and any additional comments to the address provided below or email the questionnaire to megan.torrence@dnr.mo.gov. If you have any questions, please contact me at 573-522-1801. Thank you.

Mailing Address:
Missouri Department of Natural Resources
Public Drinking Water Branch
P.O. Box 176
Jefferson City, MO 65102-0176

Sincerely,

WATER PROTECTION PROGRAM

Megan Torrence

Megan Torrence
Permits and Engineering Section
Public Drinking Water Branch

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

NOTICE OF VIOLATION

SEP 2 8 2018

NOV NUMBER: BFUCWN102065

CERTIFIED MAIL: 7016 0600 0000 2593 6401
RETURN RECEIPT REQUESTED

Camden County Water Supply No. 5
Clearwater Condos WWTF, MO0126985
PO Box 556
Camdenton, MO 65020

RE: Failure to Pay Annual Sewer Connection Fee

To Whom It May Concern:

The Missouri Department of Natural Resources' Water Protection Program is issuing this Notice of Violation (NOV) as a result of your failure to remit payment of the Missouri State Annual Sewer Connection Fee. The Sewer Connection fee is required by Section 644.052 and Section 644.055 of the Missouri Revised Statutes (RSMo) and 10 CSR 20-6.011 (1)(G).

The annual fee amount for your facility is based upon the number, size, and type of sewer connections reported per category for residential, industrial, or commercial. The payment was due on June 12, 2018. Penalties are assessed pursuant to Section 644.055, of the RSMo, and are accrued on the entire amount due at a rate of 2 percent for each month that the fee is delinquent until the payment is remitted. The total amount due is based upon the number of connections plus the late penalty.

To avoid escalated enforcement action, complete the enclosed invoice and submit with your payment to the Department's Accounting Program within 15 days of receipt of this certified letter to the address listed below:

Department of Natural Resources
Division of Administrative Support
Accounting Program
P.O. Box 477
Jefferson City, MO 65102

If you feel you received this NOV in error or have any questions or concerns, please do not hesitate to contact Ms. Sherry Bell at P.O. Box 176, Jefferson City, MO 65102; by email at sherry.bell@dnr.mo.gov, or by phone at 573-522-1485.

Thank you in advance for your cooperation and attention to this matter.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW/sb

Enclosure

c: Water Protection Program Compliance and Enforcement Section

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

NOTICE OF VIOLATION

SEP 28 2018

NOV NUMBER: BFUCWN102066

CERTIFIED MAIL: 7016 0600 0000 2593 6418
RETURN RECEIPT REQUESTED

Camden County Water Supply No. 5
Cedar Heights Condominiums, MO0129038
PO Box 556
Camdenton, MO 65020

RE: Failure to Pay Annual Sewer Connection Fee

To Whom It May Concern:

The Missouri Department of Natural Resources' Water Protection Program is issuing this Notice of Violation (NOV) as a result of your failure to remit payment of the Missouri State Annual Sewer Connection Fee. The Sewer Connection fee is required by Section 644.052 and Section 644.055 of the Missouri Revised Statutes (RSMo) and 10 CSR 20-6.011 (1)(G).

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Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW/sb

Enclosure

c: Water Protection Program Compliance and Enforcement Section

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

January 14, 2019

SUBJECT: Financial Assistance for Engineering Report Services – Calendar Year 2019

Dear Community Water System Official:

The Missouri Department of Natural Resources, Public Drinking Water Branch is pleased to announce the opportunity to submit an application to receive Financial Assistance for Engineering Report Services in 2019. This opportunity is eligible for community water systems serving a population less than or equal to 3,300 or community water systems with larger populations that will provide benefit to a community water system with a population equal to or less than 3,300 (i.e. regionalization, consolidation, etc.). The purpose of this funding is to help community water systems obtain an Engineering Report as a first step toward implementing changes that will help the system achieve and maintain technical, managerial, and financial capacity, including compliance with the National Primary Drinking Water Regulations and the Missouri Public Drinking Water Regulations.

This is not a loan program, but rather provides grants to water systems based on their eligibility and priority as determined by a numerical ranking process. Systems with the highest priority point scores are funded first. Awardees are eligible to receive up to 80 percent of the cost needed to hire an engineering firm to prepare an Engineering Report up to a maximum of $20,000. Disadvantaged communities are eligible for 100 percent funding up to a maximum of $25,000. Engineering firms are selected by the water systems after a solicitation process that complies with state requirements and is explained in the information packet.

The application and information packet can be found at the following web address https://dnr.mo.gov/env/wpp/pdwb/eng-report-svcs.htm, or you may contact us to receive a hard copy.

To apply, make sure your water system meets the minimum eligibility criteria in the information packet, complete the application, and submit it through the Department's new Funding Opportunities Portal no later than April 1, 2019. More information about the Funding Opportunities Portal is found in the information packet.

If you have any questions regarding this opportunity or to request a hard copy of the application and information packet, please contact Ms. Megan Torrence at 573-522-1801, or by email at megan.torrence@dnr.mo.gov, or you may contact Mr. Maher Jaafari, P.E., at 573-751-1127, or by email at maher.jaafari@dnr.mo.gov. Thank you.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW:mtm

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

January 14, 2019

SUBJECT: Financial Assistance for Engineering Report Services – Calendar Year 2019

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Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW:mtm

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

January 14, 2019

Ms. Bonnie Burton
Camden County PWSD #5 - Cedar Heights
P.O. Box 556
Camdenton, MO 65020

FINDING OF COMPLIANCE

Dear Ms. Burton:

Staff from the Missouri Department of Natural Resources (Department) conducted an inspection on December 18, 2018, of the Camden County PWSD #5 - Cedar Heights public water system (system). The system operates under the public water system identification number MO3031383.

Compliance with Safe Drinking Water Law was evaluated. The entity was found to be **in compliance** based upon the observations made at the time of the evaluation.

The enclosed report describes the findings and may provide important recommendation to ensure continued compliance. Your cooperation in implementing those recommendations will be appreciated.

If you have any questions or would like to schedule a time to meet with Department staff to discuss compliance requirements, please contact Mr. Darrell Barber of my staff, by calling 417-891-4300, by email at darrell.barber@dnr.mo.gov, or via mail at Southwest Regional Office, 2040 West Woodland, Springfield, Missouri 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Mark Rader, Chief
Drinking Water Section

MDR/dbp

Enclosures

c: Public Drinking Water Branch, Monitoring Section
Mr. James J. Heppler Sr., Designated Operator – Lake of the Ozarks Water & Sewer

029.pdwp.CamdenCoPWSD5-CedarHeights.mo3031383.x.2019.01.14.fy19.ins.x.dab

Missouri Department of Natural Resources
Southwest Regional Office/Public Drinking Water Branch
Report of Inspection
Camden County PWSD #5 - Cedar Heights
Camden County, Missouri
Public Water System ID Number MO3031383
January 14, 2019

Introduction

A routine inspection was made by the Missouri Department of Natural Resources (Department) of the community public water system serving Camden County PWSD #5 - Cedar Heights on December 18, 2018. The purpose of the inspection was to determine compliance with Missouri Safe Drinking Water Law and Regulations. The inspection reviewed all eight critical components applicable to the public water system.

The following people were present at the time of the inspection:

Camden County PWSD #5 - Cedar Heights
Mr. James J. Heppler Sr., Designated Operator, 573-346-2092

Missouri Department of Natural Resources
Mr. Darrell Barber, Environmental Specialist, 417-891-4300

Facility Description and History

The system serves approximately 485 people in the Cedar Heights Condominiums through 194 connections. The system is supplied by a single non-compliant well and operates year-round. The water system has successfully completed a *Compliance Agreement* to address the non-compliant well (Well #2).

Well #2 is a non-compliant well that was drilled in 2003 to a depth of 445 feet and then partially plugged to an effective depth of 420 feet with six-inch casing to a depth of 280 feet. The submersible pump is set at a depth of 336 feet and is rated at 60 gallons per minute. The water is disinfected using a liquid sodium hypochlorite solution. System pressure and storage are provided by a single 30,000-gallon standpipe. There are also two small diaphragm tanks on the well discharge piping in the well house to buffer pressure fluctuations during pump startup.

Since the last inspection on December 22, 2015, the water system has painted the exterior of the 30,000-gallon standpipe.

The system is located in the Niangua Watershed (10290110).

The system requires an operator properly certified at the DS-I level. Mr. James J. Heppler Sr. is properly certified above this level.

Discussion of Inspection and Observation

I contacted Mr. James J. Heppler Sr. on December 6, 2018, to schedule a compliance and operations inspection for December 18. The inspection was conducted during normal business hours.

Upon arrival I met with Mr. Heppler and discussed the scope and the purpose of the inspection. I followed Mr. Heppler to the well house and reviewed the well, chlorination system and related piping. We then proceeded up the hill to review the 30,000-gallon standpipe. Photos were taken of the system components during the inspection. At the conclusion of the inspection, I collected a bacteriological sample from sample site 04.

I reviewed the records for the system, and they were adequate.

Sampling and Monitoring

One drinking water sample was collected from the construction office (04) and was submitted for microbiological analysis to the Missouri State Public Health Laboratory. The sample tested total coliform absent or "safe". The free chlorine in the distribution system was 0.52mg/L, and the total residual chlorine level in the system was 0.54 mg/L.

There were no monitoring violations or unsafe samples during the last 24 months.

Compliance Determination and Required Actions

The system was found to be in compliance with the Missouri Safe Drinking Water Regulations based on the observations made at the time of the inspection.

Unsatisfactory Findings

During the time of the inspection and the file review, no violations of the Safe Drinking Water Regulations were noted for the past two years.

Recommendations

1. The well casing and discharge piping was not protected against physical damage. The well casing and valves located inside the well house are severely corroded due to the chlorine.

The well casing and all exposed piping should be protected against deterioration, physical damage, and freezing. Paint the exterior of the well casing and discharge piping to protect it from corrosion.

2. The chlorine feed and storage system installed on Well #2 does not meet the construction recommendations. Specifically, the chlorine solution tank is not sealed and equipped with a vent to the exterior of the well house, which is causing corrosion to metal surfaces in the well house. Also, the access cover on the chlorine solution tank is broken and needs to be replaced.

The chlorine feed and storage system is a critical component that ensures the quality of water served to the public. To maintain that quality, it is recommended that the water system maintain duplicate chlorine feed pumps each capable of meeting peak demands, position the chlorine solution tank on a weighing scale so the amount fed can be tracked, equip the chlorine feed pump with drain-back piping to safely drain the feed line and prevent siphoning of chlorine into the system, and seal the chlorine solution tank with a vent to the outside to prevent corrosion and damage to metallic surfaces.

The Department recommends modifying the chlorine feed system as indicated above.

3. Each service connection is not individually metered.

Individual meters reduce water usage compared to systems with a flat rate, unmetered charge. Customers have an economic incentive to reduce usage and fix leaks. Totaling individual customer meters and comparing with total well pumpage allows the loss due to leakage to be calculated.

The Department recommends installing meters on each service connection.

4. The public water system does not have adequate emergency electrical power.

When power failure would result in cessation of minimum essential service, an alternate power supply should be provided to meet average day demand. Each public water system should have an emergency electrical power source which may include a permanent or portable generator at each well and pump station, a tractor connection at each well or pump station, or service from two power companies.

The Department recommends providing sufficient emergency electrical power to operate all pumps that are essential to maintaining water supply and pressure.

5. The public water system does not have security fencing around the 30,000-gallon standpipe and the access ladder is not equipped with a lockable ladder guard.

Safety, security and risk-reduction measures are important, and should be implemented to reduce the water system's vulnerabilities. All water system facilities should be evaluated and re-designed to include measures to provide protection against vandalism, sabotage, terrorist acts, or access by unauthorized personnel. These protection measures should include: a) locked security doors;

b) windows sized or barred to prevent access; and, c) security fencing around vulnerable areas of drinking water facilities (for example, wellheads, manholes, pumphouses, treatment buildings, and storage tanks).

The Department recommends constructing a chain link fence with a lockable gate around the standpipe or installing a lockable ladder guard on the access ladder.

6. The 30,000-gallon standpipe is not designed and constructed with a second manway to permit egress in case of emergency.

All unpressurized tanks and reservoirs for finished water storage shall be designed and constructed to allow convenient and safe access to the interior for cleaning and maintenance. The number, location and spacing of hatches and manways shall conform to federal Occupational Safety and Health Administration (OSHA) regulation 29 CFR, Part 1910, which requires a workplace to be equipped with two means of egress to permit prompt evacuation of employees during an emergency.

The Department recommends the next time the standpipe is taken off-line for inspection and maintenance, construct a second manway in accordance with the latest design standards to provide emergency egress through the side of the tank.

7. The public water system does not have an adequate tank interior inspection and cleaning program.

The public water system should have a tank interior inspection and cleaning program with the following elements: a) Each tank interior should be inspected and cleaned every two to five years depending on silt build up; b) the type and general condition of the interior paint should be determined, especially on any paint that appears to be high in lead or chromium; c) glass-coated interiors should be inspected for cracking, corrosion and other signs of coating deterioration (spalling, cracking, leaking, etc.); d) if rusting is present, determine the approximate percent of rusted area, the extent, nature and depth of pitting, and the condition of the remaining coating (chalking, blistering, loose, blotchy, etc.); and, e) concrete structures should be inspected for signs of deterioration (spalling, cracking, leaking, etc.). All work shall be conducted in a clean and sanitary manner, and all surfaces shall be thoroughly cleaned and disinfected before a storage facility is returned to service. It is the responsibility of the public water system to either conduct or require water quality tests to demonstrate the good sanitary condition of the tank interior before it is returned to service. Follow all environmental laws and rules to dispose of chlorinated water, sludge debris and other wastes.

Develop and institute an adequate tank interior inspection and cleaning program. Please find attached the Inspection of Water Storage Facilities technical bulletin.

8. The public water system does not have an adequate well water level monitoring program.

The public water system should measure the static water level and operating water level each quarter, keep records of these readings, look for long term trends (particularly water table decline), and use this information to plan for the future which can include lowering well pumps (which may require higher horsepower pumps), drilling existing wells deeper, drilling new wells further apart, or switching to surface water sources with appropriate treatment.

The Department recommends maintaining an adequate well water level monitoring program.

9. The public water system has not established a cross-connection control program. X

The public water system should establish a written cross-connection control program to prevent contamination from being introduced into the system from back-pressure or back-siphonage. This cross-connection control program might include a cross-connection clause in the user agreement for private utilities, and an inspection of all potential cross-connection sources such as sewage treatment plants, facilities with boilers or fire sprinkler systems, and irrigation systems.

Whenever an unprotected cross-connection is discovered, it must be corrected by the customer installing a Department-approved air gap or backflow prevention device. Air gaps and backflow prevention devices must be tested annually by a certified tester, and results of these tests must be kept in the public water system records for a period of five years and made available to the Department inspector during inspections.

The public water system should establish a cross-connection control program. An example cross-connection control plan and two backflow prevention fact sheets are enclosed. The public water system must ensure all cross-connections have an approved back-flow prevention device and these devices are tested annually. If a back-flow prevention device has not been installed at any connection where there is a cross-connection this can be considered a Significant Deficiency.

10. The public water system does not have a department-approved wellhead protection program.

A wellhead protection program is a program that identifies the area of recharge for each well, identifies existing sources of contamination within these recharge areas, protects recharge areas from new sources of contamination through zoning and land acquisition, plans for problems from existing sources of contamination and locates new wells in protected areas. An added benefit of having a department-approved wellhead protection program is that it increases a water system's ranking when competing for state and federal funding of future water system improvements. For more information on development of a wellhead protection program or the department's approval process, contact Mr. Ken Tomlin, Missouri Department of Natural Resources-Public Drinking Water Branch, P.O. Box 176, Jefferson City, Missouri, 65102, 573-751-5331.

The Department recommends development of a Department-approved wellhead protection program.

Additional Comments

As per Missouri State Statute 640.115 RSMo, all water systems must notify and provide engineering plans and specifications to the Department prior to any new construction, qualified alteration, or extension of your water system. Qualified alterations include those that would change or alter plant capacity or treatment processes such as adding, removing, or changing chemical additives and/or their injection locations, altering finished water storage capacity, pumping capacity, line pressures, etc. If you have questions regarding qualified alterations, please contact the Missouri Department of Natural Resources, Public Drinking Water Branch, by calling 573-751-5331 or by mail at P.O. Box 176, Jefferson City, MO 65102.

Signatures

SUBMITTED BY:

Darrell Barber
Environmental Specialist
Southwest Regional Office

REVIEWED BY:

Judith Charlton, Chief
Drinking Water Inspection Unit
Southwest Regional Office

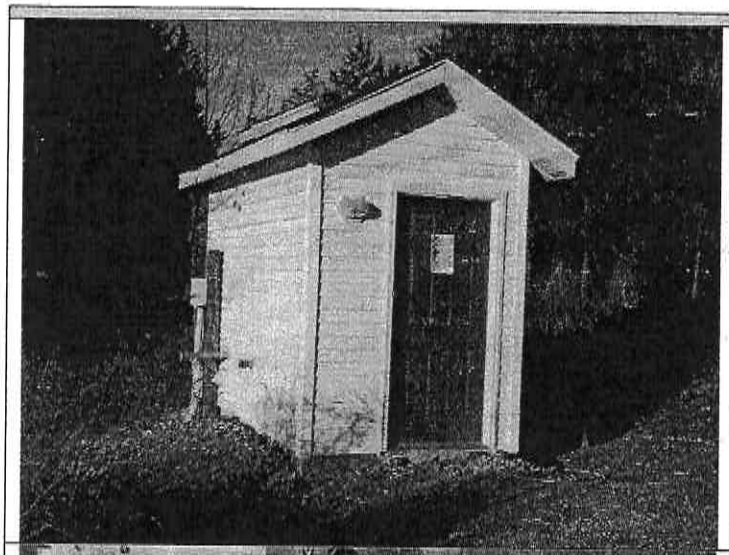
Attachments

Photograph Addendum 1 through 6
Inspection of Water Storage Facilities technical bulletin
Sample cross-connection control plan
Backflow Prevention – Frequently Asked Questions
Basics of Backflow Prevention: Missouri Regulation 10 CSR 60-11.010-.030

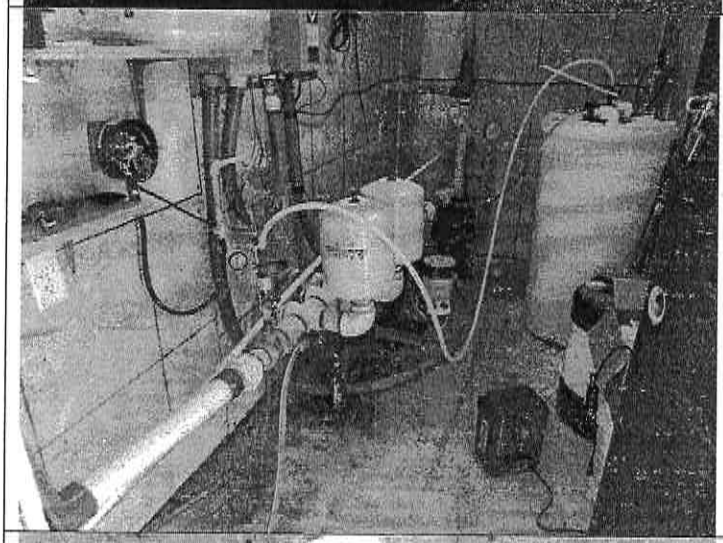
MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

PHOTOGRAPH ADDENDUM

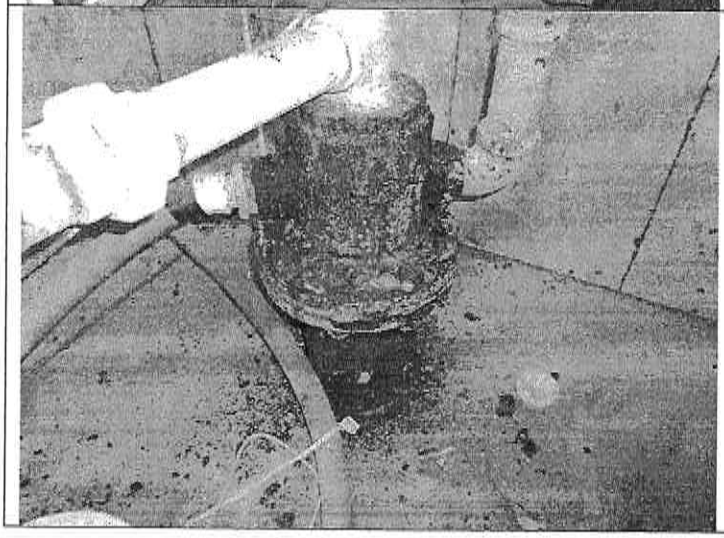
REGIONAL OFFICE
Southwest Regional Office



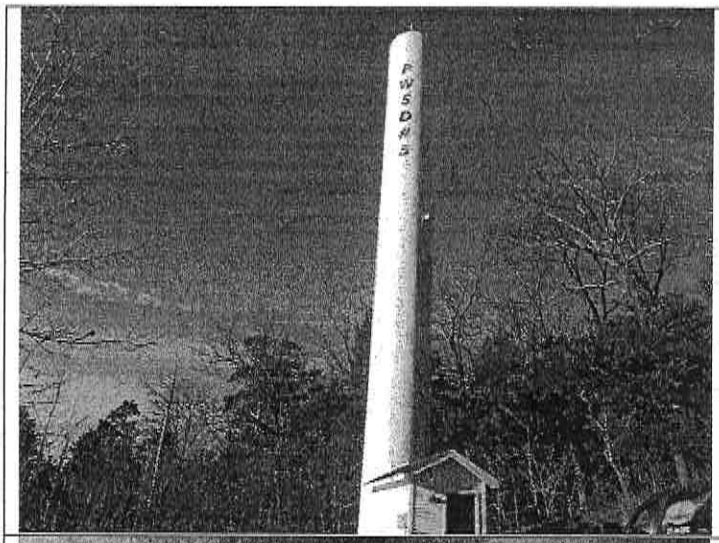
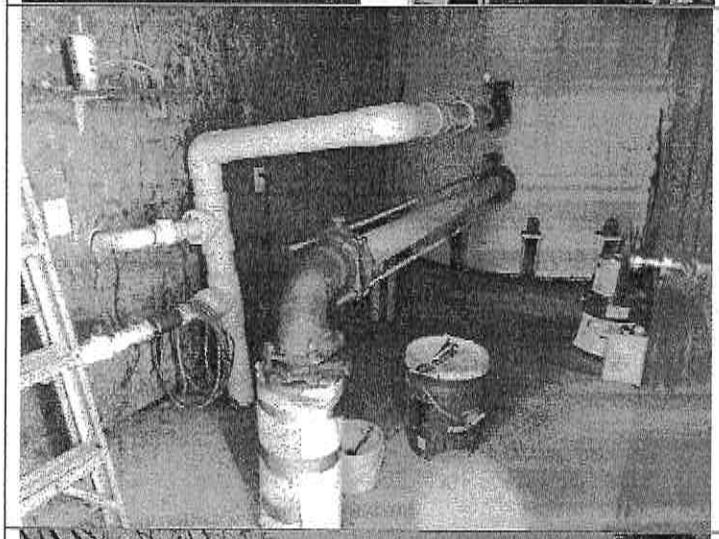
PHOTOGRAPH #1
TAKEN BY: Darrell Barber
ENTITY: Camden County PWSD #5 - Cedar Heights
PERMIT: MO3031383
LOCATION: Outside near complex entrance
DESCRIPTION: Well house for Well #2
DATE TAKEN: December 18, 2018
PROGRAM: Public Drinking Water Branch



PHOTOGRAPH #2
TAKEN BY: Darrell Barber
ENTITY: Camden County PWSD #5 - Cedar Heights
PERMIT: MO3031383
LOCATION: Inside Well #2 well house
DESCRIPTION: Well #2, chlorination system and related piping.
DATE TAKEN: December 18, 2018
PROGRAM: Public Drinking Water Branch



PHOTOGRAPH #3
TAKEN BY: Darrell Barber
ENTITY: Camden County PWSD #5 - Cedar Heights
PERMIT: MO3031383
LOCATION: Inside Well #2 well house
DESCRIPTION: Well #2 – excessive corrosion of well casing due to chlorine.
DATE TAKEN: December 18, 2018
PROGRAM: Public Drinking Water Branch

	PHOTOGRAPH #4 TAKEN BY: Darrell Barber ENTITY: Camden County PWSD #5 - Cedar Heights PERMIT: MO3031383 LOCATION: Outside near standpipe DESCRIPTION: 30,000-gallon standpipe. DATE TAKEN: December 18, 2018 PROGRAM: Public Drinking Water Branch
	PHOTOGRAPH #5 TAKEN BY: Darrell Barber ENTITY: Camden County PWSD #5 - Cedar Heights PERMIT: MO3031383 LOCATION: Inside standpipe piping room DESCRIPTION: Inlet and outlet piping on base of 30,000-gallon standpipe. DATE TAKEN: December 18, 2018 PROGRAM: Public Drinking Water Branch
	PHOTOGRAPH #6 TAKEN BY: Darrell Barber ENTITY: Camden County PWSD #5 - Cedar Heights PERMIT: MO3031383 LOCATION: Outside near standpipe DESCRIPTION: 30,000-gallon standpipe – access ladder is not equipped with a lockable ladder guard. DATE TAKEN: December 18, 2018 PROGRAM: Public Drinking Water Branch

Missouri Department of Natural Resources
"Integrity and excellence in all we do"

Inspection of Water Storage Facilities

Water Protection Program technical bulletin

4/2004

A technical bulletin, *Microbial Contamination of Water Storage Tanks* (pub172), was issued September 1995, because of too many occurrences of microbial contamination of water storage facilities and because of failure to inspect or inadequate inspection of water storage facilities. Today, the occurrence of microbial contamination is lower because more tanks are being inspected, but the quality of inspections varies widely. Too many inspection services look only at the condition of the paint and ignore other important issues. These inspections may fail to reveal major sanitary defects in water storage facilities while giving a false belief in the integrity of the storage facility. Currently, no certification of water storage inspectors exists and the qualifications of inspectors vary widely. The department is issuing this bulletin to aid water system officials in assuring proper inspection of their storage facilities and to secure some uniformity in the reports submitted to officials by inspecting firms. This bulletin is not intended to be a definitive reference concerning the construction, operation and maintenance of steel water storage tanks. Those wanting more information concerning these issues may wish to refer to the American Water Works Association's Manual M42, *Steel Water Storage Tanks,* or to publications of the Steel Plate Fabricators Association.

The following information is only for guidance and covers all types of finished water storage facility inspections.

General

The items on finished water storage facilities that must be inspected can be divided into five categories:

1. Sanitary conditions
2. Structural and footing conditions
3. Safety and security conditions
4. Coating system conditions
5. General details.

Sanitary conditions are those that could allow contamination of the water in storage. Structural and footing conditions are those that can affect the structural integrity of the storage facility. Safety and security conditions are those affecting the equipment that enables or protects inspectors and maintenance workers and prevents access to the tank by unauthorized people. Coating system conditions are those affecting the interior and exterior paint. General details are information on the storage facility such as overflow height, tank dimensions, overflow pipe size and other construction features. This information must be readily available, up-to-date, accurate and confirm as-built data to prevent costly mistakes when constructing additional storage facilities or major expansions to the water system, and to facilitate inspections, maintenance or emergencies.

Recycled Paper

PUB002112

Inspector Qualifications

Only organizations and individuals knowledgeable and equipped to do the work should do inspections. It is extremely important that inspectors have a thorough knowledge of water storage construction and be able to recognize improperly maintained or constructed vents, overflows, roof hatches, etc. Furthermore, inspectors must be thoroughly familiar with all the different safety equipment installed on storage facilities and with current safety standards. Any inspection service should be willing to explain the qualifications of their inspectors. Also, any firm should be willing to provide inspection checklists or copies of reports that show they can and will inspect facilities for sanitary defects and structural damage as well as paint condition.

The inspection firm or inspector shall carry adequate workman's compensation, property damage and public liability insurance and shall fully protect the owner against claims of any nature arising out of the inspection work.

Inspection Services

Ideally, the inspection firm should be a neutral third party that is not involved in storage facility maintenance, painting or repair. No inspection should be done without a written contract or agreement between the system and the inspection firm. This contract should clearly state the type and scope of the inspection to be provided and of any other services that will or will not be provided. For example, some firms do not provide repairs of steel and equipment or painting services. Also, it should state what equipment, material and services the system will provide, and what the inspection firm will provide. For example, who will provide pressure relief valves, pressure tanks and other equipment needed to isolate the storage facility during an inspection? Furthermore, the contract must state who is responsible for disinfecting the storage facility after the inspection and state the disinfection method to be used. The contract must require sufficient advance notice so that the water storage facility can be drained for the inspection.

In water systems having only one storage tank, consideration should be given to leasing a portable pressure tank to stabilize pressure, to minimize wasting water and to prevent main breaks. Some inspection firms have these tanks available as part of their service.

The inspection firm should provide all necessary personal safety equipment for its inspectors and assume the entire responsibility for accident to its employees while inspecting the structure. The inspectors must make such observations of ladders, railings, roof rods and other parts of the structure necessary to determine their safety for use while inspecting the structure.

Inspection Report

All inspection firms should provide quality videotapes or pictures of the facility and written reports describing all the inspection findings. These written reports shall be detailed and describe all conditions discovered during an inspection and not just the deficiencies. Do not assume that anything not mentioned in the report is in good condition. Furthermore, the report must provide enough information on any deficiencies found that system officials can make informed decisions as to actions that must be taken and their timing.

The report must include the inspector's professional evaluation of the general conditions and specific deficiencies found and recommend actions for correcting the deficiencies. Any sanitary defect, contamination, safety hazard or serious structural damage found should be reported at the time of the inspection so the facility owner can have them corrected immediately. Furthermore, these serious conditions shall be included in the written report.

Cleanliness and Cleaning

The inspector shall conduct all his work in a clean and sanitary manner and shall be responsible for cleaning all surfaces thoroughly before a storage facility is returned to service. Any time exterior repairs are done that could affect the quality of the water in a facility or work is done in a storage facility interior, the storage facility must be cleaned and disinfected before it is returned to service. State rule 10 CSR 60-4.080(6) requires public water systems to disinfect every newly repaired finished water storage facility by methods acceptable to the Department of Natural Resources before returning it to service. The department accepts the methods described in ANSI/AWWA Standard C652-92 for Disinfection of Water-Storage Facilities. However, the department accept only the membrane-filter technique for coliform analysis [the State Laboratory now does the membrane-filter technique only when specifically requested]. Ultimately, it is the responsibility of the tank owner to either conduct or require water quality tests to demonstrate the good sanitary condition of the tank interior.

When cleaning or disinfecting a storage facility, follow all environmental laws and rules to dispose of the chlorinated water, sludge, debris and other waste. Before the work begins, the facility owner and the inspection firm must make arrangements to properly handle and dispose of these. Frequently these wastes are dumped to sanitary sewers. However, strong chlorine residuals or heavy solids may cause sewer plugging and treatment problems. In addition, hydraulic limitations may exist in some sewer systems. Therefore, make all necessary agreements and arrangements with wastewater system operating authority before dumping anything.

What You Should Inspect

The following are lists of the minimum things that should be inspected during a water storage facility inspection. These lists are not all inclusive and the items requiring inspection depends somewhat on the design of a storage facility.

Sanitary conditions:

Birds, bats, bees, wasps and unidentifiable animals entering and contaminating storage facilities have caused water borne disease outbreaks and boil water notices on radio and TV. Water in storage facilities has also been contaminated by bird droppings and dirt washed into facilities by precipitation. Therefore, any sanitary defect found should be immediately brought to the attention of the facility owner so it can be quickly corrected.

1. The roof and side walls of all structures must be watertight with no openings except properly constructed vents, manways, overflows, cathodic protection equipment, risers, drains, pump mountings, control ports or piping for inflow and outflow. No unprotected opening between the walls and roof is permissible.

2. Any openings in a roof must be curbed (four to six inches) or sleeved with proper additional shielding to prevent precipitation and surface or floor drainage water from getting into the structure.

3. Roof access hatches must have watertight covers that overlap the framed opening and extend down around the frame at least two inches. The covers must be hinged on one side and have a locking device. All hatches should be checked to assure proper operation and fit.

4. Water storage roofs must be well drained and not tend to hold water. Low spots or structures that hold water must be corrected.

5. All finished water storage facilities must be properly vented and overflows cannot be used as vents.

6. Vent construction must prevent the entrance of surface water and rainwater and exclude birds, animals and insects. Vents must be screened with No.18 mesh, non-corroding material.

7. Vents must be designed so they do not become bird roosts and bird droppings cannot enter the storage facility through the vent by washing, falling or being inhaled. The old style ball and finial type vents do not meet these requirements.

8. Vents must be sized adequately to prevent differential pressures between the inside and outside of the storage facility.

9. Vents must be constructed to prevent frosting of the screens or provided with vacuum valves or failsafe devices.

10. Overflows on elevated tanks, standpipes and tall ground storage facilities must discharge at an elevation no higher than 12 to 24 inches above ground and discharge into or onto a drainage inlet structure or splash plate.

11. Overflows must be sized to carry more than the largest filling rate of the storage facility.

12. Overflows cannot be directly connected to sewers or drains.

13. Overflows must be screened or equipped with a flap valve to prevent the entrance of birds, animals and insects. Flap valves must be designed so they close completely and cannot high center and stick open.

14. Brackets connecting overflow piping to the structure must be checked to assure they are secure to both the structure and the overflow pipe and that they are not damaged by corrosion.

15. If water stands stagnant or silt collects in the bottom of a tank bowl, the tank must be modified to minimize this or provided with siphon drains or freeze proof direct drains. The water and deposits must be removed periodically to prevent microbial growths, to minimize corrosion and to prevent the deposits from going into the distribution system.

16. Check for evidence of contamination of the storage interior.

17. Hydrants, cleanouts or similar flushing devices must be provided on the piping of all water towers, standpipes and ground storage tanks. These devices must be located so that they can drain the storage facility while it is isolated from the system. Flushing devices on separate lines that are directly connected to the storage facility are acceptable substitutes but valves or plugs installed in wet risers or standpipes are not acceptable.

18. Taps or sampling stations suitable for collecting microbiological samples must be provided on the discharge piping of each storage facility. These must be located so that water directly from the storage facility can be sampled.

Structural conditions:
In the event that significant structural defects are identified, public water system officials should consult with a Missouri registered professional engineer to evaluate the inspection findings and recommendations. Some inspection firms will provide this service if it is specifically requested.

1. Are anchor bolts rusted enough to materially reduce their strength?

2. Are anchor bolts tight? Has dirt, grass or weeds accumulated on the anchor bolts?

3. Are column shoes clean and painted?

4. What is the condition of the grout under the column shoes and riser plate?

5. Does dirt, grass or weeds accumulate on the column shoes or riser plate?

6. Is there any indication of settlement of column or riser foundations?

7. Do areas exist where water pools or erosion has occurred around the foundations?

8. Do the foundations extend far enough above ground level to protect the column shoes and riser plates from excessive moisture and corrosion?

9. What is the physical condition of the concrete foundations?

10. Are the wind rods in good condition and properly tightened?

11. Where the wind rod connecting pins are secured with cotter pins or welded washers, check each connecting pin and report any missing cotter pins or washers.

12. Where the wind rod connecting pins are secured with nuts, check to make sure that each nut is full threaded and the thread is well battered.

13. Are the leg struts and their connections in good condition?

14. Is the riser straight and are the riser pipe stay rods in good condition?

15. Check the entire structure for water leaks including all manways, risers and tower legs.

16. Check all welds and seams for cracks.

17. Check all bolts and rivets for corrosion and leaks.

18. Older style elevated tanks with spider rods and hubs should have these removed and re-placed with a stiffener ring welded around the upper perimeter of the tank wall.

19. Check to see that all cables, conduits, antennae and similar devices are properly se cured to the storage structures

20. All roof trusses, rafters and their connections must be checked for ice damage, corrosion

and soundness. This must include the welds connecting the roof to the rim angles and trusses.

Safety and security conditions:

Many safety requirements are set by Occupational Safety and Health Act (OSHA) and their latest requirements should be followed. While most OSHA requirements do not apply to political subdivisions, they do apply to privately owned firms hired to inspect, maintain and repair publicly owned facilities and are used as standards of safety by many courts. Publicly owned facilities should meet OSHA requirements to avoid liability issues, and more importantly, to protect people working on the storage facilities.

1. Older elevated water tanks, that do not have leg ladders but require maintenance workers to climb a tower leg are serious safety hazards. These must have properly constructed safe ladders installed.

2. Check ladder brackets to assure that enough are provided, that they are not damaged by corrosion and that they are secure to both the structure and the ladders.

3. Check all ladder rungs to assure that they are secure and not damaged by corrosion.

4. Check to see that all ladders (interior and exterior) are constructed to OSHA requirements and that adequate room exists between the storage structure and the ladder rungs (seven inches minimum). Replace any flimsy or improperly constructed ladders.

5. Make sure safety devices that incorporate life belts, friction brakes and sliding attachments are provided on all ladders and that they are properly secured and operate safely.

6. Cables, power conduits, antenna brackets or similar devices should not be attached to any ladder because they will obstruct the ladder and prevent the safe use of the ladder or its safety devices.

7. Ladders or sections of ladders having pitches greater than 90 percent are prohibited and must be replaced with properly constructed ladders or sections.

8. All cables and wires to devices on the storage structure must be installed inside properly constructed conduits. Properly designed brackets must safely secure the conduits to the storage structure.

9. Check catwalk railings and posts to make sure they are securely attached. All catwalks must have railings that meet OSHA construction regulations. The intent of OSHA regulations is to have railings that do more than prevent people from falling. They must also prevent equipment, work material and other objects from falling. Therefore, the spacing between railings must meet standards and toe plates must be provided.

10. Check the condition of all landings and catwalks to make sure they are clean, that they drain properly and are not damaged by corrosion.

11. Large diameter wet risers in the bottom of elevated tanks are fall hazards so guardrails must be installed to protect people from falling into the riser. Grates over the riser tops do not meet

OSHA standards, are easily damaged and displaced by ice and are dangerous to repair. If the wet riser pipe is extended into the tank for this purpose, it must meet the same criteria as a guard rail system (extend a minimum of 42-inches, have a top rail that can be gripped, etc.).

12. All water storage structures must have at least two access ways such that when ventilation equipment blocks one, the other is free from obstruction. Elevated water tanks must have at least two access ways in the tank portion of the structure and the manway in the riser does not count. The number of manways required depends on the size of the facility and is specified by OSHA.
13. Check to see that all manways are large enough (24-inches in diameter minimum).

14. Check all painters rings and brackets to assure they are sound, securely attached and not excessively corroded.

15. Inspect all Federal Aviation Administration warning lights to see that they are working properly.

Security Issues:

1. On elevated water tanks, standpipes and tall ground storage facilities, exterior ladders must terminate at least eight feet above ground and have their bottom sections covered with locking ladder guards.

2. Access to water storage structures must be restricted to only authorized people. Therefore, the tower site should be properly fenced. Check to see that security fences are sound and that their gates and locks work properly.

3. Check to see that all doors and access hatches are locked.

Coating system conditions:

The following things should be done when inspecting the coating systems on a storage facility and explained in the facility inspection report.

1. Determine the type and general condition of the interior and exterior paint systems. Determine lead and chromium levels on any paint that appears to be high in lead or chromium.

2. If rusting is continuous, approximate the percent of rusted area and determine the character of the areas (loose paint, blotchy, general corrosion, no paint).

3. Determine the extent, nature and depth of pitting.

4. Determine total system film thickness and run adhesion tests.

5. Check the paint for chalking and blistering.

6. Determine surface profiles.

7. Concrete structures should be inspected for signs of concrete deterioration (spalding, cracking, leaking, etc.).

8. Glass coated structures should be inspected for cracking, corrosion and other signs of coating deterioration.

Inspection Frequency

The frequency of inspection of items in each category varies. Sanitary, safety, security and some structural conditions should be inspected every year. Coating system conditions should be inspected every two to five years. In addition, storage facilities should be cleaned every two to five years depending on silt build up. The frequency that general information is physically determined depends upon the quality of a system's records on the particular water storage facility. However, this information should be physically determined before doing any major repair work on the storage structure and before designing other storage facilities or major expansions to the water distribution system. Therefore, the type of firm hired, the equipment required and how a facility is drained and disinfected all depend upon the scope of the inspection and the items inspected. Finally, every system should keep inspection records on file for each storage facility and use them to decide the frequency and scope of inspections.

For more information

Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-1300 office
(573) 526-1146 fax
www.dnr.mo.gov/wpscd/wpcp

_____WATER SYSTEM
CROSS-CONNECTION CONTROL PLAN

PURPOSE

This plan describes a program of action designed to inform the public of the danger of cross-connections, to identify possible cross-connections, to insure that cross-connection control devices are installed where needed, and to set forth a schedule of periodic testing of the installed control devices.

INFORMING THE PUBLIC

Since most members of the general public are unaware of the potential health hazard from cross-connections, our water system will inform them. We hope to secure better cooperation from an informed public. We will take the following measures to provide information:

1. Leaflets describing cross-connections and their dangers will be (mailed) (delivered) to customers at least twice each year.

2. Posters will be displayed at (water system) (trailer park) (etc.) office at least one month out of each quarter.

3. New customers will be told about cross-connections at the time water service is started.

IDENTIFYING CROSS-CONNECTIONS

Inspection of System. An inspection of the service area will be made (once each month) (once each quarter) (twice per year). Possible cross-connection hazards will be identified.

Action when a Cross-Connection is identified.

1. Customer will be contacted as soon as possible.
2. Cross-connection will be eliminated whenever possible.
3. A cross-connection control device will be required when hazard can not be eliminated.
4. Customer will be required to have control device installed within 60 days, if device is required.
5. In cases where cross-connections are found which pose an extreme hazard of immediate concern the water system will require immediate corrective action to be taken.

6. In the case of non-compliance, immediate steps will be taken to disconnect the customer. In such cases, water service will not be re-established until the necessary corrections have been made.

Inspection and Testing of Cross-Connection Control Devices

Any modifications to the customer's plumbing system or cross-connection control devices required for the protection of the water system will be inspected immediately after installation. Such corrective action or devices will be inspected regularly on a (quarterly) (semi-annually, etc.) basis and in all cases a minimum of once every 12 months thereafter. Where an air-gap separation is used, it will be checked to see that it has not been altered so that it can no longer be relied upon for positive protection. Vacuum breakers will be visually inspected to verify that they have not been removed, altered, are not leaking and that the air vent valve is working freely. Replacement or repair of control devices will be required as necessary to assure that protection of the water system is not compromised. In addition, any reduced pressure or double check valve cross-connection control devices used to protect the water system will be tested using approved test devices by a certified backflow prevention assembly tester certified in Missouri, (1) immediately upon installation, (2) at least every 12 months thereafter, and (3) after partial disassembly for cleaning and/or repairs. The cost of testing by individuals not employed with the water system will be paid by the customer.

RECORDS

A log will be maintained showing actions taken to control cross-connections. Permanent records will be maintained by the water system, which will permit ready review of the findings of all on-site visits, corrections required, dates corrections completed, inspection of preventive measures and test result where applicable, correspondence, etc. Information that should be retained for on-site visits should include location of premises, date of visit, name of owner's address and/or telephone number, person contacted, cross-connections found, corrections required, etc. A card file (or other system) will be utilized to keep up with when inspections and/or tests of protective measures need to be made. A permanent record of the details of all such inspections, and tests where applicable, will also be maintained.

Signed: _____, Title: _____
(owner) (chief official) (etc.)

On behalf of: _____
(the owners, governing body, etc.)

Date: _____

Missouri Department of Natural Resources

Basics of Backflow Prevention: Missouri Regulation 10 CSR 60-11.010-.030

Water Protection Program fact sheet 1/2008

Backflow Prevention

In 1997, the Missouri Department of Natural Resources revised a drinking water regulation entitled "Backflow Prevention." This revised regulation places certain responsibilities on water suppliers to ensure that customer facilities identified as actual or potential backflow hazards provide the necessary protection to prevent contaminants from entering the public water system.

What is Backflow?

Backflow is defined as the unwanted reversal of flow in a water distribution system. Due to changes in the hydraulic pressure in a water distribution system or a piping system inside a customer's premises, backflow occurs on a regular basis.

The polluting substance, usually a liquid, tends to enter the potable water supply if the net force acting upon the liquid acts in the direction of the water supply. Therefore, two factors are essential for backflow to occur. First, the normal direction of flow in the distribution system must be interrupted. Second, there must be a link or connection between the potable system and the source of contamination.

Backflow only becomes a serious problem when there are cross connections within the water distributions system.

Public Health Significance of Cross Connections

A cross connection is a physical link between a source of pollution or contamination with a potable water supply.

Public health specialists have long been aware of the threat to public health posed by cross connections. Education is the most important factor in cross connection control. No one would intentionally connect plumbing fixtures, equipment, etc. to their water supply if they knew it would contaminate their drinking water. But it happens thousands of times a day.

Various court decisions have held water suppliers responsible for the delivery of safe water to consumers. But the safety of our drinking water supply can be jeopardized at any location, at any time because of the frequency of plumbing defects and cross connections. Due to frequent changes in piping systems, an effective cross connection control program, including continued surveillance of the public water system, is necessary to prevent backflow incidents.

Components of an Effective Cross Connection Control Program

The first step in preventing backflow incidents is enacting local rules that grant the water supplier the authority to enforce the cross connection control program. For the water supplier to comply with the state backflow prevention regulation, the local rules should include the following provisions:

- A requirement for annual testing of assemblies and inspection of air-gaps.
- Authority to enter customer premises for purposes of inspection.
- Authority to terminate water service for failure to comply.

Another responsibility of the water supplier is to notify customers, where backflow hazards exist, that they must comply with the local rule. Once these customers have been notified, the supplier must maintain records of inspections, exemptions, or installation of assemblies.

A local program may not be less stringent than state regulations. Local plumbing codes may require additional backflow prevention devices.

Methods of Backflow Prevention

The department's Public Drinking Water Branch maintains a list of backflow prevention assemblies approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California www.usc.edu/dept/fccchr/. The following methods of backflow prevention meet the requirements of the state backflow prevention rule.

Air-gap: An air-gap is the most positive method of backflow protection. It is a physical separation between the water supply and the customer's internal piping system. The distance for an air-gap must be at least two times the diameter of the pipe. For example, a two-inch separation is required for a one-inch water supply pipe.

Reduced Pressure Principle Assembly: A reduced pressure principle assembly is the highest level of mechanical backflow protection. The reduced pressure principle assembly has a hydraulically operated relief port located between two spring loaded check valves. A drop in pressure from the supply or an increase in back pressure from the customer's facility will cause the check valves to close and the relief port to open, creating an air-gap within the assembly. If either check valve becomes fouled by debris, the relief port will also open. The drawback to using an reduced pressure principle assembly is that it will lower the pressure available to the customer's premises.

Double Check Valve Assembly: The double check valve assembly is designed for low hazard protection only. The double check valve assembly has two spring valves that act independently to provide protection from back pressure and back siphonage. The drawback to double check valve assemblies is that both check valves are susceptible to fouling by debris in the water system, which hinders their function and allows backflow to occur.

Testing/Inspection Requirements

The function of all backflow prevention devices must be reviewed annually. Air-gaps may be inspected by the water supplier. A state-certified backflow prevention assembly tester must perform the specific testing procedures required to verify the proper function of reduced pressure principle assemblies and double check valve assemblies.

The Public Drinking Water Branch maintains a list of certified backflow prevention assembly testers.

For Additional Assistance

Please contact your local Regional Office for more information.

Public Drinking Water Branch	(573) 751-5331
Northeast Region Office	(660) 385-8000
Southwest Region Office	(417) 891-4300
Southeast Region Office	(573) 840-9750
Kansas City Region Office	(816) 622-7000
St. Louis Region Office	(314) 416-2960

Missouri Department of Natural Resources

Backflow Prevention - Frequently Asked Questions

Water Protection Program fact sheet

1/2008

What is backflow?
Backflow is the undesirable reversal of flow in a potable water distribution system through a cross-connection. A cross-connection is an actual or potential link connecting a source of pollution or contamination with a potable water supply. Backflow may allow liquids, gases, nonpotable water and other substances, from any source, to enter a public water system.

How does backflow occur?
Backflow may occur due to high pressure on the customer side, or low pressure in the water system. Backflow through a cross-connection can contaminate the potable water in a building, on a block, or throughout an entire water system.

What is backflow prevention?
Backflow prevention protects public water systems from contamination or damage through cross-connections located in customer facilities. Backflow prevention is typically achieved by placing a backflow prevention assembly between the customer and the public water system. This is called containment backflow prevention.

Does my water system require backflow prevention?
Missouri's backflow prevention regulation (10 CSR 60-11.010) applies to all community water systems. These are water systems that serve at least 15 connections or at least 25 people on a year-round basis. Missouri has more than 1,400 community water systems. They serve more than 4.9 million people, almost 90 percent of the state population.

Must my home or business have backflow prevention?
Many businesses must have backflow prevention. Common examples are manufacturing and processing plants, medical facilities, laboratories (including school chemistry and biology labs), and buildings that have boilers, fire sprinkler systems and irrigation systems.

Solely residential facilities are exempt from the rule unless a specific cross-connection is identified. For example, single-family residences with a lawn irrigation system require backflow prevention. Multi-family residences with a boiler or fire sprinkler system require backflow prevention.

Call your local water supplier to confirm whether or not backflow prevention is required at your home or business.

What kind of backflow prevention is required at my home or business?
Under the Missouri rule, three types of backflow prevention assemblies are permissible for containment: air gaps, reduced pressure principle assemblies and double check valve assemblies. The type of assembly you need depends on the type of hazard present.

Generally, where you have a backflow hazard that may threaten public health you must have an air gap or a reduced pressure principle assembly. Where there is a lesser hazard that may damage the water system or degrade the aesthetic quality of the water, a double check valve assembly is required.

PUB002158

Only approved backflow prevention assemblies may be used. If you can find the manufacturer and model number on your assembly you can check with your water supplier to find out if it is an approved assembly. Modifications to an assembly invalidate the approval. If your assembly looks like it has been changed, get in touch with your water supplier or a certified backflow prevention assembly tester to see if it is an approved assembly.

Water suppliers may have more strict or specific requirements than the state rule. Contact your local water supplier to make sure you have the appropriate backflow prevention assembly to meet local requirements.

Must I have my backflow prevention assembly inspected?

Yes. To ensure the device is functioning properly, a certified tester must test it at least annually. For new facilities, the assembly must be tested when installed. If the tester finds the assembly is not working, you must arrange to have it repaired and tested again. It is your responsibility to pay for the test and repairs. The tester is required to provide a copy of the test report to you and the water supplier. To obtain a list of certified testers in your area, call your water supplier or the Missouri Department of Natural Resources.

Does the backflow prevention assembly protect my entire facility?

No. The required backflow prevention assembly provides containment and it protects the public water system from hazards in your facility. Cross-connections in your own plumbing may allow contaminants to backflow from hazardous processes to drinking water taps in your building.

Backflow prevention applied within a facility to protect drinking water plumbing from process plumbing is called isolation. Isolation backflow prevention is not covered by departmental rules, but may be required by local plumbing codes. Check with your local code enforcement agencies to see what standards apply to your facility.

Additional Resource:

Cross-Connection Control Manual,
U.S. Environmental Protection Agency (EPA 816-R-03-002, February 2003),
www.epa.gov/safewater/crossconnection.html

For more information

Missouri Department of Natural Resources
Water Protection Program, Public Drinking Water Branch
P.O. Box 176
Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-5331 office,
(573) 751-3110 fax
www.dnr.mo.gov/env/wpp/index.html

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

January 14, 2019

SUBJECT: Financial Assistance for Engineering Report Services – Calendar Year 2019

Dear Community Water System Official:

The Missouri Department of Natural Resources, Public Drinking Water Branch is pleased to announce the opportunity to submit an application to receive Financial Assistance for Engineering Report Services in 2019. This opportunity is eligible for community water systems serving a population less than or equal to 3,300 or community water systems with larger populations that will provide benefit to a community water system with a population equal to or less than 3,300 (i.e. regionalization, consolidation, etc.). The purpose of this funding is to help community water systems obtain an Engineering Report as a first step toward implementing changes that will help the system achieve and maintain technical, managerial, and financial capacity, including compliance with the National Primary Drinking Water Regulations and the Missouri Public Drinking Water Regulations.

This is not a loan program, but rather provides grants to water systems based on their eligibility and priority as determined by a numerical ranking process. Systems with the highest priority point scores are funded first. Awardees are eligible to receive up to 80 percent of the cost needed to hire an engineering firm to prepare an Engineering Report up to a maximum of $20,000. Disadvantaged communities are eligible for 100 percent funding up to a maximum of $25,000. Engineering firms are selected by the water systems after a solicitation process that complies with state requirements and is explained in the information packet.

The application and information packet can be found at the following web address https://dnr.mo.gov/env/wpp/pdwb/eng-report-svcs.htm, or you may contact us to receive a hard copy.

To apply, make sure your water system meets the minimum eligibility criteria in the information packet, complete the application, and submit it through the Department's new Funding Opportunities Portal no later than April 1, 2019. More information about the Funding Opportunities Portal is found in the information packet.

If you have any questions regarding this opportunity or to request a hard copy of the application and information packet, please contact Ms. Megan Torrence at 573-522-1801, or by email at megan.torrence@dnr.mo.gov, or you may contact Mr. Maher Jaafari, P.E., at 573-751-1127, or by email at maher.jaafari@dnr.mo.gov. Thank you.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW:mtm

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

January 15, 2019

Ms. Bonnie Burton
Camden County PWSD #5 - Clearwater Condos
P.O. Box 556
Camdenton, MO 65020

UNSATISFACTORY FINDINGS
RESPONSE REQUIRED

Dear Ms. Burton:

Staff from the Missouri Department of Natural Resources (Department) conducted an inspection on December 18, 2018, of Camden County PWSD #5 - Clearwater Condos public water system (system). The system operates under the public water system identification number MO3302557.

Compliance with Safe Drinking Water Law was evaluated. The enclosed report is being issued with Unsatisfactory Findings for the violations identified.

Please refer to the enclosed report for details of identified Unsatisfactory Findings and required actions. **A written response documenting actions taken to correct the violations is required by the date specified in the report.**

The Department records will document continued non-compliance of the environmental laws and regulations until the required actions are completed. Please understand that ongoing violations of laws may result in a follow-up inspection.

If you have any questions or would like to schedule a time to meet with Department staff to discuss compliance requirements, please contact Mr. Darrell Barber of my staff, by calling 417-891-4300, by email at darrell.barber@dnr.mo.gov, or via mail at Southwest Regional Office, 2040 West Woodland, Springfield, Missouri 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Mark Rader, Chief
Drinking Water Section

MDR/dbb

Enclosure

c: Mr. James J. Heppler Sr., Designated Operator – Lake of the Ozarks Water & Sewer
Ms. Lauren Mack, Water Resource Center
Public Drinking Water Branch, Monitoring Section

029.pdwp.CamdenCoPWSD5-ClearwaterCondos.mo3302557.x.2019.01.15.fy19.ins.x.dab

Missouri Department of Natural Resources
Southwest Regional Office/Public Drinking Water Branch
Report of Inspection
Camden County PWSD #5 - Clearwater Condos
Camden County, Missouri
Public Water System ID Number MO3302557
January 15, 2019

Introduction

A routine inspection was made by the Missouri Department of Natural Resources (Department) of the community public water system serving Camden County PWSD #5 - Clearwater Condos on December 18, 2018. The purpose of the inspection was to determine compliance with Missouri Safe Drinking Water Law and Regulations. The inspection reviewed all eight critical components applicable to the public water system.

The following people were present at the time of the inspection:

Camden County PWSD #5 - Clearwater Condos
Mr. James J. Heppler Sr., Designated Operator, 573-346-2092

Missouri Department of Natural Resources
Mr. Darrell Barber, Environmental Specialist, 417-891-4300

Facility Description and History

The system serves approximately 550 people in Clearwater Condominiums (208 connections) and Mission Hills Subdivision (15 houses). The system is supplied by a single state-approved well and operates year-round.

Well #1 is a state-approved well that was drilled in 2002 to a depth of 565 feet with six-inch casing to a depth of 337 feet. The 15-horsepower submersible pump is set at a depth of 331 and is rated at 100 gallons per minute. The water is disinfected with a liquid sodium hypochlorite solution that is injected into the well discharge piping prior to the water entering the ground storage tanks. System storage is provided by five ground storage tanks. Three of the ground storage tanks are approximately 3,750 gallons each (8' diameter x 10' tall). The other two tanks are approximately 4,500 gallons each (8' diameter x 12' tall). However, the useable volume in the two larger tanks is approximately 3,750 gallons each because the elevation difference between the larger and smaller tanks won't allow them to be filled to capacity without overflowing the other three smaller ground storage tanks. System pressure is provided by two high service booster pumps and two hydropneumatic pressure tanks. The first hydropneumatic tank is approximately 3,000 gallons (6' x 15') and the second hydropneumatic tank is approximately 3,750 gallons (6' x 18').

Since the last inspection on December 22, 2015, the water system plugged an abandoned well located in the Mission Hills subdivision.

The system is located in the Niangua Watershed (10290110).

The system requires an operator properly certified at the DS-II level. Mr. James J. Heppler Sr. is properly certified above this level.

Discussion of Inspection and Observation

I contacted Mr. James J. Heppler on December 6, 2018, to schedule a compliance and operations inspection for December 18. The inspection was conducted during normal business hours.

After completing an inspection at the Camden County PWSD #5 – Cedar Heights system, I followed Mr. Heppler to the Camden County PWSD #5 – Clearwater Condos system. Upon arrival I reviewed the well, chlorination system, ground storage tanks, booster pumps and the hydropneumatic pressure tanks. Photos were taken of the water system components during the inspection. At the conclusion of the inspection, I collected a bacteriological sample from the outside faucet on Building #600.

I reviewed the records for the system, and they were adequate.

The system is a registered major water user (ID No. 67100671). More information about major water users and on-line registration is available at:
http://dnr.mo.gov/geology/wrc/mwu-forms.htm. If you have questions regarding major water user or annual reporting requirements, please call Ms. Lauren Mack at 573-368-2192.

Sampling and Monitoring

One drinking water sample was collected from the outside faucet of Building #600 and was submitted for microbiological analysis to the Missouri State Public Health Laboratory. The sample tested total coliform absent or "safe". The free chlorine in the distribution system was 0.32 mg/L, and the total residual chlorine level in the system was 0.33 mg/L.

There were no monitoring violations or unsafe samples during the last 24 months.

Compliance Determination and Required Actions

The facility is not in compliance with Missouri Safe Drinking Water Regulations based on observations made during the inspection.

Unsatisfactory Findings

For all Unsatisfactory Findings listed below, a written response documenting actions taken to correct the violations is required by **February 14, 2019**.

1. The well is not equipped with a sample tap located prior to treatment for source water sampling as required by Safe Drinking Water Regulation 10 CSR 60-4.025(3)(E).

A sample tap is needed to collect samples directly from the well prior to treatment so that distribution and source problems can be distinguished from each other. Samples collected before treatment and storage reveals the condition of the raw source water. Storage tanks can sometimes harbor bacteria.

REQUIRED ACTION: Install a source water sample tap which must be located to ensure that untreated well water can be collected. The best source water sample tap location has a check valve between it and the point of chlorination. If the tap is not isolated from the chlorine injection point, then only collect source water samples when the well is running.

Recommendations

1. Well capacity is inadequate to state standards. Specifically, Well #1 was designed and approved to serve 188 condominium units. The water system is currently serving a total of 223 connections (208 condominium units and 15 houses). A construction permit was issued in 2007 for a second well, but the second well has not been constructed.

The Department recommends that the total developed ground water source capacity shall equal or exceed the design maximum day demand and equal or exceed the design average day demand with the largest producing well out of service. Since the system is served by a single well, it does not meet this recommendation.

Review the capacity of the well and to increase the capacity, obtain a construction permit from the Missouri Department of Natural Resources Public Drinking Water Branch and construct an additional well to community public water system standards that together with the existing well has a combined capacity equaling or exceeding the design maximum day demand. To obtain this construction permit, submit two copies of an engineering report, plans, and specifications each bearing the seal of a professional engineer registered in Missouri along with an application for a construction permit to Missouri Department of Natural Resources, Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, 573-751-5331.

2. The well casing was not protected against physical damage.

The well casing and all exposed piping should be protected against deterioration, physical damage, and freezing. Paint the exterior of the well casing and discharge piping to protect it from corrosion.

3. Each service connection is not individually metered.

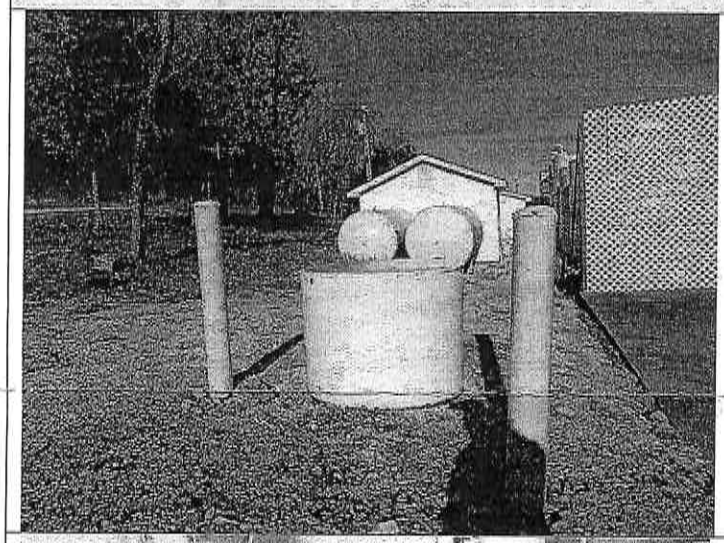
Individual meters reduce water usage compared to systems with a flat rate, unmetered charge. Customers have an economic incentive to reduce usage and fix leaks. Totaling individual customer meters and comparing with total well pumpage allows the loss due to leakage to be calculated.

The Department recommends installing meters on each service connection.

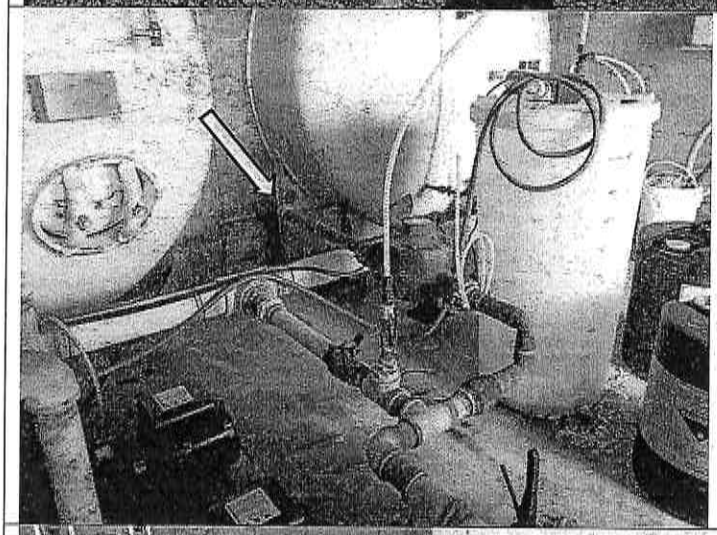
MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

PHOTOGRAPH ADDENDUM

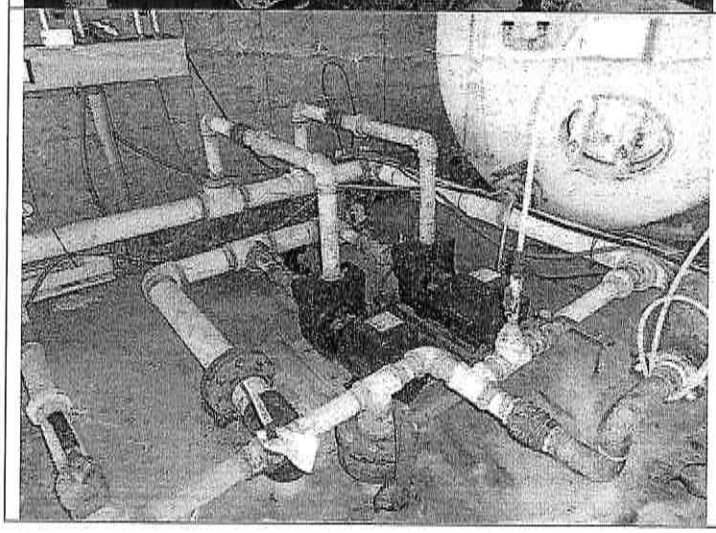
REGIONAL OFFICE
Southwest Regional Office



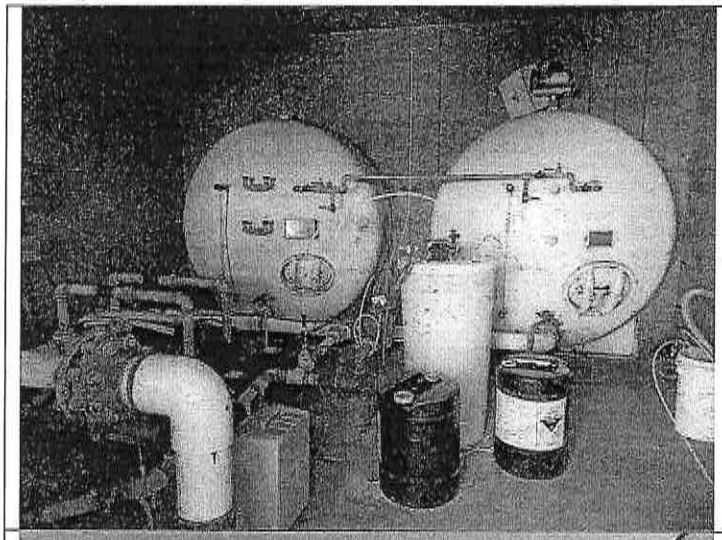
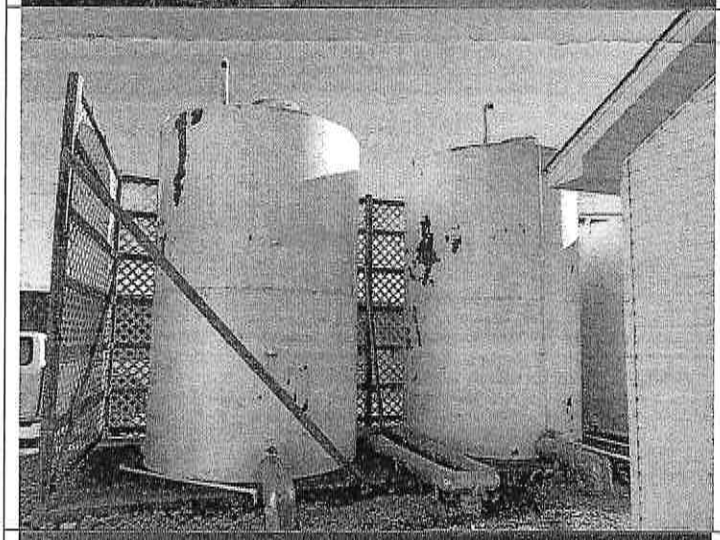
PHOTOGRAPH #1
TAKEN BY: Darrell Barber
ENTITY: Camden County PWSD #5 - Clearwater Condos
PERMIT: MO3302557
LOCATION: Outside near the well
DESCRIPTION: Enclosure for Well #1
DATE TAKEN: December 18, 2018
PROGRAM: Public Drinking Water Branch



PHOTOGRAPH #2
TAKEN BY: Darrell Barber
ENTITY: Camden County PWSD #5 - Clearwater Condos
PERMIT: MO3302557
LOCATION: Inside well house
DESCRIPTION: Well discharge piping (see arrow), master meter, chlorination system and related piping. A source water sample tap is needed prior to the chlorine injection point.
DATE TAKEN: December 18, 2018
PROGRAM: Public Drinking Water Branch



PHOTOGRAPH #3
TAKEN BY: Darrell Barber
ENTITY: Camden County PWSD #5 - Clearwater Condos
PERMIT: MO3302557
LOCATION: Inside well house
DESCRIPTION: Two high service booster pumps and related piping.
DATE TAKEN: December 18, 2018
PROGRAM: Public Drinking Water Branch

	PHOTOGRAPH #4 TAKEN BY: Darrell Barber ENTITY: Camden County PWSD #5 - Clearwater Condos PERMIT: MO3302557 LOCATION: Inside the well house DESCRIPTION: Two hydropneumatic pressure tanks, chlorination system, booster pumps and related piping. DATE TAKEN: December 18, 2018 PROGRAM: Public Drinking Water Branch
	PHOTOGRAPH #5 TAKEN BY: Darrell Barber ENTITY: Camden County PWSD #5 - Clearwater Condos PERMIT: MO3302557 LOCATION: Outside of well house DESCRIPTION: Two 4,500-gallon ground storage tanks – exteriors need to be painted and the tanks need overflow pipes. DATE TAKEN: December 18, 2018 PROGRAM: Public Drinking Water Branch
	PHOTOGRAPH #6 TAKEN BY: Darrell Barber ENTITY: Camden County PWSD #5 - Clearwater Condos PERMIT: MO3302557 LOCATION: Outside of well house DESCRIPTION: Two hydropneumatic pressure tanks, five ground storage tanks and well house. DATE TAKEN: December 18, 2018 PROGRAM: Public Drinking Water Branch

MODEL ORDINANCE
FOR
CROSS CONNECTION CONTROL

BILL NO._____ **ORDINANCE NO. _____**

BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF _____, STATE OF MISSOURI:

Section I. Cross Connection Control - General Policy

A. Purpose. The purpose of this ordinance is:

1. To protect the public potable water supply from contamination or pollution by containing within the consumer's internal distribution system or private water system contaminants or pollutants which could backflow through the service connection into the public potable water supply system.

2. To promote the elimination, containment, isolation, or control of existing cross connections, actual or potential, between the public or consumer's potable water system and non-potable water systems, plumbing fixtures, and industrial-process systems.

3. To provide for the maintenance of a continuing program of cross connection control which will systematically and effectively prevent the contamination or pollution of all potable water systems.

B. Application. This ordinance shall apply to all premises served by the public potable water system of the city of_____.

C. Policy. This ordinance will be reasonably interpreted by the water purveyor. It is the water purveyor's intent to recognize the varying degrees of hazard and to apply the principle that the degree of protection shall be commensurate with the degree of hazard.

The water purveyor shall be primarily responsible for protection of the public potable water distribution system from contamination or pollution due to backflow of contaminants or pollutants through the water service connection. The cooperation of all consumers is required to implement and maintain the program to control cross connections. The water purveyor and consumer are jointly responsible for preventing contamination of the water system.

If, in the judgement of the water purveyor or their authorized representative, cross connection protection is required through either piping modification or installation of an approved backflow prevention device, due notice shall be given to the consumer. The consumer shall immediately comply by providing the required protection at their own expense; and failure, refusal, or inability on the part of the consumer to provide such protection shall constitute grounds for discontinuing water service to the premises until such protection has been provided.

Section II. Definitions

A. The definitions listed in Appendix A shall apply in the interpretation and enforcement of this ordinance.

Section III. Cross Connections Prohibited

A. No water service connection shall be installed or maintained to any premises where actual or potential cross connections to the public potable or consumer's water system may exist unless such actual or potential cross connections are abated or controlled to the satisfaction of the water purveyor, and as required by the laws and regulations of the Missouri Department of Natural Resources.

B. No connection shall be installed or maintained whereby an auxiliary water supply may enter a public potable or consumer's water system unless such auxiliary water supply and the method of connection and use of such supply shall have been approved by the water purveyor and the Missouri Department of Natural Resources.

C. No water service connection shall be installed or maintained to any premises in which the plumbing system, facilities and fixtures have not been constructed and installed using acceptable plumbing practices considered by the water purveyor as necessary for the protection of health and safety.

Section IV. Survey and Investigations

A. The consumer's premises shall be open at all reasonable times to the water purveyor, or his authorized representative, for the conduction of surveys and investigations of water use practices within the consumer's premises to determine whether there are actual or potential cross connections to the consumer's water system through which contaminants or pollutants could backflow into the public potable water system.

B. On request by the water purveyor or their authorized representative, the consumer shall furnish information on water use practices within their premises.

C. It shall be the responsibility of the water consumer to conduct periodic surveys of water use practices on their premises to determine whether there are actual or potential cross connections to their water system through which contaminants or pollutants could backflow into their or the public potable water system.

Section V. Type of Protection Required

A. The type of protection required by this ordinance shall depend on the degree of hazard which exists, as follows:

1. An approved air gap separation shall be installed where the public potable water system may be contaminated with substances that could cause a severe health hazard.

2. An approved air gap separation or an approved reduced pressure principle backflow prevention assembly shall be installed where the public potable water system may be contaminated with a substance that could cause a system or health hazard.

3. An approved air gap separation or an approved reduced pressure principle backflow prevention assembly or an approved double check valve assembly shall be installed where the public potable water system may be polluted with substances that could cause a pollutional hazard not dangerous to health.

Section VI. Where Protection is Required

A. An approved backflow prevention assembly shall be installed on each service line to a consumer's water system serving premises where, in the judgement of the water purveyor or the Missouri Department of Natural Resources, actual or potential hazards to the public potable water system exist. The type and degree of protection required shall be commensurate with the degree of hazard.

B. An approved air gap separation or reduced pressure principle backflow prevention assembly shall be installed at the service connection or within any premises where, in the judgement of the water surveyor or the Missouri Department of Natural Resources, the nature and extent of activities on the premises, or the materials used in connection with the activities, or materials stored on the premises, would present an immediate and dangerous hazard to health should a cross connection occur, even though such cross connection may not exist at the time the backflow prevention device is required to be installed. This includes but is not limited to the following situations:

1. Premises having an auxiliary water supply, unless the quality of the auxiliary supply is acceptable to the

water purveyor and the Missouri Department of Natural Resources.

2. Premises having internal cross connections that are not correctable, or intricate plumbing arrangements which make it impractical to ascertain whether or not cross connections exist.

3. Premises where entry is restricted so that inspection for cross connections cannot be made with sufficient frequency or at sufficiently short notice to assure the cross connections do not exist.

4. Premises having a repeated history of cross connections being established or reestablished.

5. Premises, which due to the nature of the enterprise therein, are subject to recurring modification or expansion.

6. Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.

7. Premises where materials of a toxic or hazardous nature are handled such that if back siphonage or back pressure should occur, a serious health hazard may result.

C. The types of facilities listed in Appendix B fall into one or more of the categories of premises where an approved air gap separation or reduced pressure principle backflow prevention assembly is required by the water purveyor and the Missouri Department of Natural Resources to protect the public water supply and must be installed at these facilities unless all hazardous or potentially hazardous conditions have been eliminated or corrected by other methods to the satisfaction of the water purveyor and the Missouri Department of Natural Resources.

Section VII. Backflow Prevention Assemblies

A. Any backflow prevention assembly required to protect the facilities listed in Appendix B shall be of a model or construction approved by the water purveyor and the Missouri Department of Natural Resources.

1. Air gap separation to be approved shall be at least twice the diameter of the supply pipe, measured vertically above the top rim of the vessel, but in no case less than one inch.

2. A double check valve assembly or a reduced pressure principle backflow prevention assembly shall be approved by the water purveyor, and shall appear on the current "list of approved backflow prevention assemblies" established by the Missouri Department of Natural Resources.

B. Existing backflow prevention assemblies approved by the water purveyor at the time of installation and properly maintained shall, except for inspection and maintenance requirements, be excluded from the requirements of this ordinance so long as the water purveyor is assured that they will satisfactorily protect the water system. Whenever the existing assembly is moved from its present location, or requires more than minimum maintenance, or when the water purveyor finds that the maintenance constitutes a hazard to health, the unit shall be replaced by a backflow prevention assembly meeting the requirements of this ordinance.

Section VIII. Installation

A. Backflow prevention assemblies required by this ordinance shall be installed at a location and in a manner approved by the water purveyor and shall be installed at the expense of the water consumer.

B. Backflow prevention assemblies installed on the service line to the consumer's water system shall be located on the consumer's side of the water meter, as close to the meter as is reasonably practical, and prior to any

other connection.

C. Backflow prevention assemblies shall be located so as to be readily accessible for maintenance and testing, protected from freezing. No reduced pressure principle backflow prevention assembly shall be located where it will be submerged or subject to flooding by any fluid.

Section IX. Inspection and Maintenance

A. It shall be the duty of the consumer at any premises on which backflow prevention assemblies required by this ordinance are installed to have inspection, tests, and overhauls made in accordance with the following schedule or more often where inspections indicate a need.

1. Air gap separations shall be inspected at the time of installation and at least every twelve months thereafter.

2. Double check valve assemblies shall be inspected and tested for tightness at the time of installation and at least every twelve months thereafter.

3. Reduced pressure principle backflow prevention assemblies shall be inspected and tested for tightness at the time of installation and at least every twelve months thereafter.

B. Inspections, tests, and overhauls of backflow prevention assemblies shall be made at the expense of the water consumer and shall be performed by a State of Missouri certified backflow prevention assembly tester.

C. Whenever backflow prevention assemblies required by this ordinance are found to be defective, they shall be repaired or replaced at the expense of the consumer without delay.

D. The water consumer must maintain a complete record of each backflow prevention assembly from purchase to retirement. This shall include a comprehensive listing that includes a record of all tests, inspections, and repairs. Records of inspections, tests, repairs, and overhauls shall be made available to the water purveyor upon request.

E. Backflow prevention assemblies shall not be bypassed, made inoperative, removed, or otherwise made ineffective.

Section X. Violations

A. The water purveyor shall deny or discontinue, after reasonable notice to the occupants thereof, the water service to any premises wherein any backflow prevention assembly required by this ordinance is not installed, tested, and maintained in a manner acceptable to the water purveyor, or if it is found that the backflow prevention assembly has been removed or bypassed or if an unprotected cross connection exists on the premises.

B. Water service to such premises shall not be restored until the consumer has corrected or eliminated such conditions or defects in conformance with this ordinance to the satisfaction of the water surveyor.

APPENDIX A

DEFINITIONS

1. "Air gap separation" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the overflow level rim of the receptacle, and shall be at least double the diameter of the supply pipe measured vertically above the flood level rim of the vessel, but in no case less than one inch.

2. "Auxiliary water supply" means any water source or system, other than the public water supply, that may be available in the building or premises.

3. "Backflow" means the flow other than the intended direction of flow, of any foreign liquids, gases or substances into the distribution system of a public water supply.

4. "Backflow prevention assembly" means any double check valve or reduced pressure principle backflow preventer having resilient-seated shut-off valves on both the upstream and downstream end and the necessary test cocks as integral parts of the assembly.

5. "Consumer" means the owner or person in control of any premises supplied by or in any manner connected to a public water system.

6. "Containment" means protection of the public water supply by installing a backflow prevention assembly or air gap separation on the main service line to a facility.

7. "Contamination" means an impairment of the quality of the water by sewage, process fluids or other wastes to a degree which could create an actual hazard to the public health through poisoning or through spread of disease by exposure.

8. "Cross connection" means any physical link between a potable water supply and any other substance, fluid or source which makes possible contamination of the potable water supply due to the reversal of flow of the water in the piping or distribution system.

9. "Hazard, Degree of" means an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

    a) Hazard, Health - any condition, device, or practice in the water supply system and its operation which could create or may create a danger to the health and well-being of the water consumer.

    b) Hazard, Plumbing - a plumbing type cross connection in a consumer's potable water system that has not been properly protected by a vacuum breaker, air gap separation or backflow prevention assembly.

    c) Hazard, Pollutional - an actual or potential threat to the physical properties of the water system or to the potability of the public or the consumer's potable water system but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

    d) Hazard, System - an actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system, or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

10. "Industrial process system" means any system containing a fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, system, pollutional or plumbing hazard if introduced into a potable water supply.

11. "Isolation" means protection of a facility's internal plumbing system by installing a backflow prevention assembly, air gap separation or other backflow prevention device on an individual fixture, appurtenance or system.

12. "Pollution" means the presence of any foreign substance (organic, inorganic or biological) in water which tends to degrade its quality so as to constitute a hazard or impair the usefulness of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

13. "Public potable water system" means any publicly or privately owned water system supplying water to the general public which is satisfactory for drinking, culinary and domestic purposes and meets the requirements of the Missouri Department of Natural Resources.

14. "Service connection" means the terminal end of a service line from the public water system. If a meter is installed at the end of the service, then the service connection means the downstream end of the meter.

15. "Water purveyor" means the owner, operator or individual in responsible charge of a public water system.

APPENDIX B

TYPES OF FACILITIES REPRESENTING CROSS CONNECTION HAZARDS

1. Aircraft and missile manufacturing plants;

2. Automotive plants including those plants which manufacture motorcycles, automobiles, trucks, recreational vehicles and construction and agricultural equipment;

3. Potable water dispensing stations which are served by a public water system;

4. Beverage bottling plants including dairies and breweries;

5. Canneries, packing houses and reduction plants;

6. Car washes;

7. Chemical, biological and radiological laboratories including those in high schools, trade schools, colleges, universities and research institutions;

8. Hospitals, clinics, medical buildings, autopsy facilities, morgues, mortuaries and other medical facilities;

9. Metal or plastic manufacturing, fabrication, cleaning, plating or processing facilities;

10. Plants manufacturing paper and paper products;

11. Plants manufacturing, refining, compounding or processing fertilizer, film, herbicides, natural or synthetic rubber, pesticides, petroleum or petroleum products, pharmaceuticals, radiological materials or any chemical which would be a contaminant to the public water system;

12. Commercial facilities that use herbicides, pesticides, fertilizers or any chemical which would be a contaminant to the public water system;

13. Plants processing, blending or refining animal, vegetable or mineral oils;

14. Commercial laundries and dye works;

15. Sewage, storm water and industrial waste treatment plants and pumping stations;

16. Waterfront facilities including piers, docks, marinas and shipyards;

17. Industrial facilities which recycle water;

18. Restricted or classified facilities or other facilities closed to the supplier of water or the department;

19. Fire sprinkler systems using any chemical additives;

20. Auxiliary water systems;

21. Irrigation systems with facilities for injection of pesticides, herbicides or other chemicals or with provisions for creating back pressure;

22. Portable tanks for transporting water taken from a public water system; and

23. Facilities which have pumped or repressurized cooling or heating systems that are served by a public water system, including all boiler systems.

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

March 1, 2019

Ms. Bonnie Burton
Camden County PWSD #5 - Clearwater Condos
P.O. Box 556
Camdenton, MO 65020

RETURN TO COMPLIANCE

Dear Ms. Burton:

Staff from the Missouri Department of Natural Resources (Department) conducted an inspection on December 18, 2018, of the Camden County PWSD #5 – Clearwater Condos public water system.

On February 13, 2019, a sufficient response was received to the required actions in the January 15, 2019, report. No further response is required to address the report.

The Department appreciates your efforts to comply with the laws of Missouri and your continued efforts to work with us to improve protection of Missouri citizens and our natural resources.

If you have any questions, please contact Mr. Darrell Barber, of my staff, by calling 417-891-4300, by email at darrell.barber@dnr.mo.gov, or via mail at Southwest Regional Office, 2040 West Woodland, Springfield, Missouri 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Mark Rader, Chief
Drinking Water Section

MDR/dbb

c: Mr. James J. Heppler Sr., Designated Operator – Lake of the Ozarks Water & Sewer
Public Drinking Water Branch, Monitoring Section

029.pdwp.CamdenCoPWSD5-ClearwaterCondos.mo3302557.x.2019.03.01.fy19.rtc.x.dab

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

MAR 21 2019

Camden County PWSD No. 5
P.O. Box 556
Camdenton, MO 65020

Subject: Public Notice for Proposed State Operating Permit for Cedar Heights Condominiums

Dear Permittee:

The enclosed public notice pertains to your proposed State Operating Permit.

Federal regulations required issuance of this public notice to inform interested persons of the agency's intent to issue an operating permit to discharge, and allows a 30-day period for comment. This public notice package should be posted on a bulletin board at your place of business. If response to the public notice indicates significant interest, a public hearing or adjudicatory hearing may be held. Based on comments received, or the results of a hearing, the proposed permit will be modified and issued or possibly denied.

Any questions you may have should be sent to the address indicated on the enclosed public notice.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW/jz

Enclosure

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

PUBLIC NOTICE

DRAFT MISSOURI STATE OPERATING PERMIT

DATE: March 29, 2019

In accordance with the state Clean Water Law, Chapter 644, RSMo, Missouri Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state, or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years unless noted otherwise in the Public Notice for that discharge.

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

Persons wishing to comment on the proposed permit conditions are invited to submit them in writing to: Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, ATTN: NPDES Operating Permits /Permit Comments. **Please include the permit number in all comment letters.**

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The Department may not consider as relevant comments or objections to a permit based on issues outside the authority of the Missouri Clean Water Commission, (see Curdt v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be received or postmarked by 5 p.m. on April 29, 2019. The Department will consider all written comments including emails, faxes, and letters in the formulation of all final determinations regarding the applications. Email comments will be accepted at the following address: publicnoticenpdes@dnr.mo.gov. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

Copies of all draft permits and other information including copies of applicable regulations are available for inspection and copying at the Department's website at http://www.dnr.mo.gov/env/wpp/permits/permit-pn.htm, or at Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, between the hours of 8 a.m. and 5 p.m. on Monday through Friday.

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-0129038
Owner:	Camden County Public Water District No. 5
Address:	PO Box 556, Camdenton, MO 65020
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Cedar Heights Condominiums Wastewater Treatment Facility
Facility Address:	0.1 miles NW of the intersection of Cedar Heights Dr. & Hwy 54 Camdenton, MO 65020
Legal Description:	Sec. 33, T38N, R17W, Camden County
UTM Coordinates:	X= 517915, Y= 4205354
Receiving Stream:	Tributary to Lake of the Ozarks
First Classified Stream and ID:	Lake of the Ozarks (L2) (7205)
USGS Basin & Sub-watershed No.:	(10290110-0403)

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

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "C" Operator.
Flow equalization basin / extended aeration / chlorination / dechlorination / sludge holding tank / sludge disposal by contract hauler.
Design population equivalent is 847.
Design flow is 72,000 gallons per day.
Actual flow is 7,800 gallons per day.
Design sludge production is 15.2 dry tons/year.

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

Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

Expiration Date

Chris Wieberg, Director, Water Protection Program

OUTFALL #001

TABLE A.
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 **Effective Date** 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/quarter****	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/quarter****	composite**
Total Suspended Solids	mg/L		30	20	once/quarter****	composite**
E. coli (Note 1)	#/100mL		630	126	once/quarter****	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	5.6 10.8		1.3 2.1	once/quarter****	composite**
Total Residual Chlorine (Note 3, Page 3)	µg/L	< 130		< 130	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE MONTH 28, 20XX. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

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

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE MONTH 28, 20XX.

EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen (Note 3, Page 3)	mg/L	*		*	once/quarter****	grab
Biochemical Oxygen Demand$_5$ – Percent Removal (Note 2)	%			85	once/quarter****	calculated
Biochemical Oxygen Demand5 – Percent Removal (Note 2)	%			85	once/quarter****	calculated

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE MONTH 28, 20XX.

* Monitoring requirement only.
** A composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.
*** pH is measured in pH units and is not to be averaged.
**** See table on Page 3 for quarterly sampling requirements.

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

Note 2 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. amples are to be collected prior to any treatment process. Percent Removal is calculated by the following formula: [(Average Influent –Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, made up from a minimum of four grab samples.

Quarterly Minimum Sampling Requirements				
Quarter	**Months**	***E. coli*, Total Residual Chlorine (TRC), and Dissolved Oxygen**	**All Other Parameters**	**Report is Due**
First	January, February, March	Not required to sample.	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	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	Sample at least once during any month of the quarter	October 28th
Fourth	October	**Sample once during October**	Sample at least once during any month of the quarter	January 28th
	November & December	Not required to sample.		

Note 3 - This permit contains a Total Residual Chlorine (TRC) limit.

(a) The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be 17 µg/L (daily maximum limit) and 8 µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation.

(b) Disinfection is required during the recreational season from April 1 through October 31. Do not chlorinate during the non-recreational months and an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary.

(c) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**

(d) If no chlorine was used in a given sampling period, an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary. Simply report as "0 µg/L" for TRC and "NA" for DO.

B. 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.

C. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System.
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Sludge/Biosolids Annual Reports; and
      (2) Any additional report required by the permit excluding bypass reporting.
      After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
      (1) Notices of Termination (NOTs); and
      (2) Bypass reporting, See Special Condition #8 for 24-hr. bypass reporting requirements.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
   (a) To comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.

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

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

5. Reporting of Non-Detects:
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   (b) 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 method 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).

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

C. SPECIAL CONDITIONS (continued)

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

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

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

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

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

12. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or ri 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.

13. Sludge treatment, storage and disposal practices shall be conducted in accordance with Standard Conditions Part III.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0129038
CEDAR HEIGHTS CONDOMINIUMS WASTEWATER TREATMENT FACILITY

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

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

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

This Factsheet is for a Minor Operating Permit covering domestic POTW Wastewater Treatment Facilities (WWTF).

Part I – Facility Information

Facility Type: POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "C" Operator.
Flow equalization basin / extended aeration / chlorination / dechlorination / sludge holding tank / sludge disposal by contract hauler.
Design population equivalent is 847.
Design flow is 72,000 gallons per day.
Actual flow is 7,800 gallons per day.
Design sludge production is 15.2 dry tons/year.

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

Application Date: 12/3/18
Expiration Date: 6/30/19

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.11	Secondary	Domestic

Facility Performance History:
This facility was last inspected on June 21, 2016. The conditions of the facility at the time of inspection were found to be satisfactory. A review of discharge monitoring data submitted by the permittee did not indicate any exceedances.

Comments:
Changes in this permit include the re-calculation of Ammonia as N. and sampling and reporting frequencies have been reduced from monthly to quarterly. See Part VI of the Fact Sheet for further information regarding the addition and removal of effluent parameters. Special conditions were updated to include the requirement to submit discharge monitoring data via the Electronic Discharge Monitoring Report (eDMR) submission system.

Part II – Operator Certification Requirements

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

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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
- ☐ - County
- ☐ - Public Sewer District
- ☐ - State agency
- ☒ - Public Water Supply Districts
- ☐ - Private Sewer Company regulated by the Public Service Commission

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200).

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

Operator's Name: James Heppler
Certification Number: 5092
Certification Level: C

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

Part III– Operational Control Testing Requirements

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

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

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

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

Operational Monitoring Parameter	Frequency
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Aerobic Digester	Daily (M-F)
Total Residual Chlorine	Daily (M-F)

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)
Tributary to the Lake of the Ozarks	NA	NA	General Criteria	10290110-0403	0.0
Lake of the Ozarks	L1	7205	AQL, WBC-A, SCR, HHP, IRR, LWW		0.2

*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	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to the Lake of the Ozarks	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:
No receiving water monitoring requirements recommended at this time.

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

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

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

☒ - The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)], 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.

- **Ammonia as N.** Effluent limitations were re-calculated for Ammonia based on new information derived from discharge monitoring reports and on the current Missouri Water Quality Standards for Ammonia. The newly established limitations are still protective of water quality.
- **Sampling and Reporting Frequency**. Sampling and reporting frequencies were reduced from monthly to quarterly. Discharge monitoring data submitted by the permittee shows that operations at the facility have been consistent and have low variability. Therefore, the Department has found the permittee eligible for reduced monitoring frequencies. The permit is still protective of water quality.

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

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

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

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

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

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(2)(C)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, when a higher level authority is available, must submit information to the department for review and approval, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works

☒ - Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler.

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

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

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

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

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

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

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

NUMERIC LAKE NUTRIENT CRITERIA

☒ - This facility discharges into a lake watershed where numeric lake nutrient criteria are applicable. However, regulations established in 10 CSR 20-7.015as well as the department's lake nutrient criteria implementation plan do not require nutrient monitoring for facilities with design flows less than or equal to 0.1MGD. Should the lake within this watershed be identified as impaired due to nutrient loading, the department will conduct watershed modeling to determine if this facility has reasonable potential to cause or contribute to the impairment. Consequently, monitoring or effluent limitations may be established at a later date based on the modeling results. For more information, please see the department's Nutrient Criteria Implementation Plan at: https://dnr.mo.gov/env/wpp/rules/documents/nutrient-implementation-plan-final-072618.pdf

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

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

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

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

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

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

☒ - An RPA 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(12)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

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

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

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

☒ - This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

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

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

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

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

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

should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

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

In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). A facility can apply for conditional exclusion for "no exposure" of industrial activities and materials to stormwater by submitting a permit modification via Form B2 (http://dnr.mo.gov/forms/780-1805-f.pdf) appropriate application filing fees and a completed No Exposure Certification for Exclusion from NPDES Stormwater Permitting under Missouri Clean Water Law (https://dnr.mo.gov/forms/780-2828-f.pdf) to the Department's Water Protection Program, Operating Permits Section. Upon approval of the No Exposure Certification, the permit will be modified and the Special Condition to develop and implement a SWPPP will be removed. This information will be reevaluated at the time of renewal.

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

VARIANCE:

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(86)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

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

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

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

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

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

Number of Samples "n":

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

WLA MODELING:

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

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

WATER QUALITY STANDARDS:

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

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

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

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

☒ - At this time, the permittee is not required to conduct WET test for this facility.

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 does not discharge to a 303(d) listed stream.

Part VI – Effluent Limits Determination

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

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

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	1/quarter	quarterly	T
BOD_5	mg/L	1		30	20	30/20	1/quarter	quarterly	C
TSS	mg/L	1		30	20	30/20	1/quarter	quarterly	C
*Escherichia coli***	#/100mL	1, 3		630	126	630/126	1/quarter	quarterly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	5.6		1.3	5.1/1.3	1/quarter	quarterly	C
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	10.8		2.1	11.7/2.2	1/quarter	quarterly	C
Chlorine, Total Residual	µg/L	1, 3	< 130		< 130	<130/ <130	1/quarter	quarterly	G
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	1/quarter	quarterly	G
PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
Dissolved Oxygen (DO)	mg/L	3, 7	*		*	*/*	1/quarter	quarterly	G
BOD_5 Percent Removal	%	1			85	85	1/quarter	quarterly	M
TSS Percent Removal	%	1			85	85	1/quarter	quarterly	M

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

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

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

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

- **Biochemical Oxygen Demand (BOD_5).** Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**
- **Total Suspended Solids (TSS).** Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 mL as a geometric mean and Weekly Average of 630 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

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

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

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.11 + 0.0)1.5 – (0.0 * 0.01))/0.11$
$C_e = 1.5$ mg/L

Acute WLA: $C_e = ((0.11 + 0.0)12.1 – (0.0 * 0.01))/0.11$
$C_e = 12.1$ mg/L

$LTA_c = 1.5$ mg/L (0.576) = 0.864 mg/L [CV = 1.4, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.153) = 1.85 mg/L [CV = 1.4, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 0.864 mg/L (6.54) = **5.6** mg/L [CV = 1.4, 99th Percentile]
AML = 0.864 mg/L (1.46) = **1.3** mg/L [CV = 1.4, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.11 + 0.0)3.1 – (0.0 * 0.01))/0.11$
$C_e = 3.1$ mg/L

Acute WLA: $C_e = ((0.11 + 0.0)12.1 – (0.0 * 0.01))/0.11$
$C_e = 12.1$ mg/L

$LTA_c = 3.1$ mg/L (0.297) = 0.92 mg/L [CV = 3.61, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.086) = 1.03 mg/L [CV = 3.61, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 0.92 mg/L (11.69) = **10.8** mg/L [CV = 3.61, 99th Percentile]
AML = 0.92 mg/L (2.24) = **2.1** mg/L [CV = 3.61, 95th Percentile, n =30]

- **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]. Background TRC = 0.0 µg/L.

  Chronic WLA: $C_e = ((0.11 + 0.0)10 - (0.0 * 0.0))/0.11$
  $C_e = 10$ µg/L

  Acute WLA: $C_e = ((0.11 + 0.0)19 - (0.0 * 0.0))/0.11$
  $C_e = 19$ µg/L

  $LTA_c = 10\ (0.527) = 5.3$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 19\ (0.321) = 6.1$ µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 5.3 (3.11) = **17** µg/L [CV = 0.6, 99th Percentile]
  AML = 5.3 (1.55) = **8** µg/L [CV = 0.6, 95th Percentile, n = 4]

  The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be **17** µg/L (daily maximum limit) and **8** µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – Cl. G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation.

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

  Dissolved Oxygen. This facility utilizes dechlorination chemicals in order to reduce the amount of total residual chlorine that is discharged in the effluent. Dechlorination chemicals are known to exhibit an oxygen demand on the effluent and if not properly managed the effects on the effluent DO concentrations can be significant. Monitoring only requirements have been included in this permit in order to determine if a future effluent limitation is necessary to protect water quality

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

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

Sampling Frequency Justification:
Sampling and reporting frequencies were reduced from monthly to quarterly. Discharge monitoring data submitted by the permittee shows that operations at the facility have been consistent and have low variability. The permit is still protective of water quality. Sampling for *E. coli* is set at quarterly per 10 CSR 20-7.015(9)(D)6.C.

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

OUTFALL #001 – GENERAL CRITERIA CONSIDERATIONS:

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

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on June 21, 2016, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with secondary treatment technology based effluent limits established in 40 CFR 133 and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

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

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

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.

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

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

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

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

Part VII – Cost Analysis for Compliance

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

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

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

☒ - The Department is not required to determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

Part VIII – Administrative Requirements

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

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

☒ - This operating permit does not contain requirements for a water quality standard that has changed twenty-five percent or more since the previous operating permit.

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.

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 is tentatively scheduled to begin in March 2019 or is in process.

DATE OF FACT SHEET: FEBRUARY 26, 2019

COMPLETED BY:

DANIELLE SKOUBY, 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 , peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	
Effluent Discharge		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
Direct reuse or recycle of effluent	6	
Land Application/Irrigation		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
Variation in Raw Wastes (highest level only)		
Variations do not exceed those normally or typically expected	0	0
Reoccurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2	
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	
Grit removal	3	
Plant pumping of main flow	3	
Flow equalization	5	
Primary Treatment		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	4	
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	
Activated sludge (including aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film	10	
Biological, physical, or chemical	12	
Carbon regeneration	4	
Total from page ONE (1)	---	18

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	
Disinfection		
Chlorination or comparable	5	5
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	2
UV light	4	
Required Laboratory Control Performed by Plant Personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page **TWO (2)**	---	20
Total from page **ONE (1)**	---	18
Grand Total	---	38

☐ - 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	8.34	1.5	8.34	56.00	3.37/0	1.40	2.47	YES
Total Ammonia as Nitrogen (Winter) mg/L	12.1	122.57	3.1	122.57	48.00	25/0.012	3.61	4.90	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 OUTFALL #001:

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.

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ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

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

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
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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
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

May 14, 2019

Camden County Water Supply No. 5
P.O. Box 556
Camdenton, MO 65020

LETTER OF WARNING
RESPONSE REQUIRED

Dear Permittee:

Staff from the Missouri Department of Natural Resources (Department) conducted an inspection on April 11, 2019, of the Clearwater Condominiums Wastewater Treatment Facility located at Clearwater Drive (Lake Road 54-82E), Camdenton, MO in Camden County. The facility operates under the authority of Missouri State Operating Permit MO0126985.

Compliance with Missouri Clean Water Law was evaluated. A Letter of Warning (LOW) is being issued for the violations identified in the enclosed report.

Please direct your attention to the **Compliance Determination and Listing of Violations and Required Actions** in the enclosed report. The report documents the findings and the actions that you must take to address the violations. **A written response documenting actions taken to correct the violations is required by the date specified in the report.**

Failure to address the required actions will result in the issuance of a Notice of Violation. If you have any questions or would like to schedule a time to meet with Department staff to discuss compliance requirements, please contact Ms. Laura Grootens at 417-891-4300, via email at laura.grootens@dnr.mo.gov, or in writing at Southwest Regional Office, 2040 W. Woodland, Springfield, Missouri 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Kevin Hess, Chief
Water Pollution Section
KH/lgb

Enclosures

c: Lake of the Ozarks Water & Sewer

029.wpcp.ClearwaterCondominiums.mo0126985.x.2019.05.14.fy19.ins.x.lmg

Missouri Department of Natural Resources
Southwest Regional Office/Water Pollution Control Branch
Report of Inspection
Clearwater Condominiums
Camden County, Missouri
MO0126985
May 14, 2019

Introduction

On April 11, 2019, a routine compliance inspection of the Clearwater Condominiums Wastewater Treatment Facility in Camden County, Missouri was conducted by the Missouri Department of Natural Resources (Department). The purpose of this inspection was to determine compliance with Missouri State Operating Permit (MSOP) MO0126985, the Missouri Clean Water Commission Regulations, and Missouri Clean Water Law. This report presents the findings and observations made during the compliance inspection. Authority for this inspection is provided in Missouri Clean Water Law 644.026.1(21), RSMo. The following participants were present during the inspection:

Clearwater Condominiums WWTF
Mr. Jim Heppler, Operator, Lake of the Ozarks Water & Sewer

Missouri Department of Natural Resources
Ms. Laura Grootens, Environmental Specialist
Ms. Sarah Filkins, Environmental Specialist

Facility Description and History

The treatment facility is composed of flow equalization, extended aeration, chlorination, and dechlorination. The system has a design flow capacity of 75,750 gallons per day. Sludge is disposed of by contract hauler. Discharge from this facility flows into Lake of the Ozarks which is classified as a gaining setting and located in the Lake of the Ozarks HUC 8 (10290110) Watershed. The facility has a design population equivalent of 755. The UTM 83 coordinates for this facility's outfall are E 0515819, N 4207626. The MSOP MO0126985 was last issued on January 1, 2015, and expires on June 30, 2019. An application for renewal was received on December 3, 2018 by the Department and is in the process of being renewed.

Our records indicate that the previous inspection of this facility was conducted by the Department on May 28, 2015. The facility received a Notice of Violation for Total Residual Chlorine and ammonia exceedances, but no response was required.

It was also noted that the facility is currently in Enforcement for delinquent permit fees.

During the office portion of the inspection I reviewed the facility's Form S Annual Sludge Report and Discharge Monitoring Reports (DMR). The previous year's Annual Sludge Report was received by the Department on January 10, 2019, prior to the January 28 deadline. The DMRs submitted to this office from the first quarter of 2017 to the first quarter of 2019 reflect compliance with MSOP limits/reporting requirements. The facility is enrolled in the

Department's electronic DMR (eDMR) online system. The Whole Effluent Toxicity (WET) Test was received by the Department on January 22, 2019.

Discussion of Inspection and Observations

The inspection was conducted during normal business hours. Prior notification of the inspection was provided to ensure timely access to the site. When I arrived at the facility, I met with Mr. Heppler and outlined the purpose and scope of the inspection. Mr. Heppler granted permission to access the site and accompanied me throughout the tour of the facility.

All-weather access was provided. The facility was enclosed in a fence with lockable gate and warning signs. Mr. Heppler turned on the four blowers present and all were functional. Two blowers were for the flow equalization basin and two for the aeration basin. The aeration basin was a chocolate brown color and appeared to have adequate aeration. The sludge return was functioning properly. We discussed the small amount of denitrified sludge in the clarifier. The weir and weir trough were clear. I observed chlorination and dechlorination tablets in the applicators. The outfall was marked on the inside of the fence near the sample port. Flow measurement was provided. We discussed the solid waste on the ground near the clarifier and I advised that it should be thrown away.

Sampling and Monitoring

The appropriate sampling materials were taken on the inspection, including a copy of the Missouri Department of Natural Resources' Standard Operating Procedures for Sampling. Instruments for field monitoring were taken on the inspection that are capable of testing pH, temperature, conductivity, and dissolved oxygen.

Water quality field monitoring was conducted at the following location for the listed parameters.

OUTFALL #001	
PARAMETER	RESULT
pH	7.31 s.u.
Temperature	18.2 °C
Total Residual Chlorine	0.00 mg/L
Dissolved Oxygen	5.95 mg/L

Samples were collected during the inspection and sent for laboratory analysis. Sample results will be forwarded upon receipt.

Compliance Determination and Required Actions

Based upon observations made during the inspection, the facility was found to be out of compliance with the Missouri Clean Water Law, its implementing regulations, and MSOP MO0126985.

Letter of Warning (LOW)

Please submit your responses to the following violations **by June 13, 2019**, to the Southwest Regional Office, 2040 W. Woodland, Springfield, MO 65807.

1. According to Department records, the facility has an outstanding fee balance for the 2018 and 2019 annual fees. This is a violation of Missouri Clean Water Law Section 644.076.1, MSMo and Missouri Clean Water Commission Regulation 10 CSR 20-6.011(1)(F).

REQUIRED ACTION: Immediately, the Permittee must pay the outstanding balance including late fees. Please note that a 2 percent late fee is assessed every month that the balance is not paid. For an up to date fee balance, please contact the Budget and Fees Unit at 573-751-1300 or P. O. Box 176, Jefferson City, MO 65102.

Recommendations

Solid waste from the clarifier should be properly disposed of. Place the solid waste that has been removed from the clarifier into a device that is capable of letting the water drip back into the facility, such as a five gallon bucket with small holes drilled in the bottom of it. After the solid waste has dried or most of the water removed simply throw away for the trash service to pick up. It may also be beneficial to talk to residences about what they are flushing.

Signatures

SUBMITTED BY:

Laura M. Grootens

Laura Grootens
Environmental Specialist
Southwest Regional Office

REVIEWED BY:

Tina A. White, Chief
Water Pollution Inspection and Enforcement Unit
Southwest Regional Office

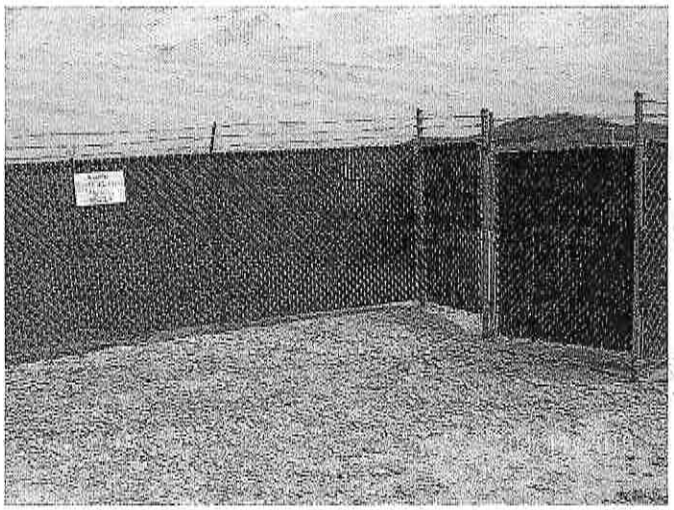
Attachments

Attachment # 1 – Aerial Map
Attachment # 2 – Photographs (#001 through #008)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

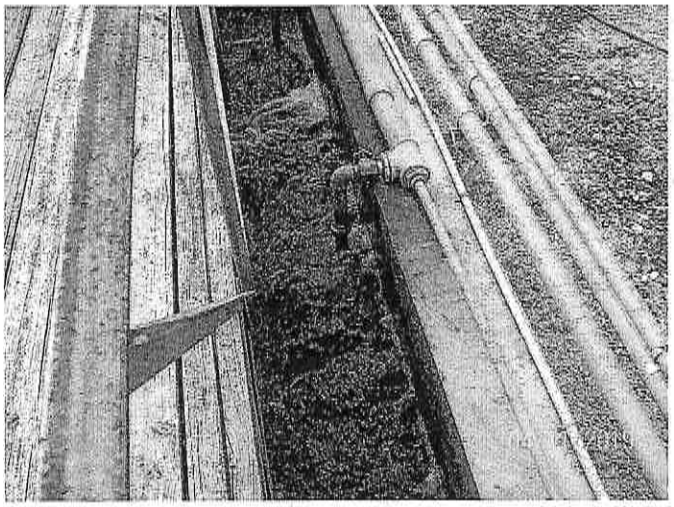
PHOTOGRAPH ADDENDUM

REGIONAL OFFICE
Southwest



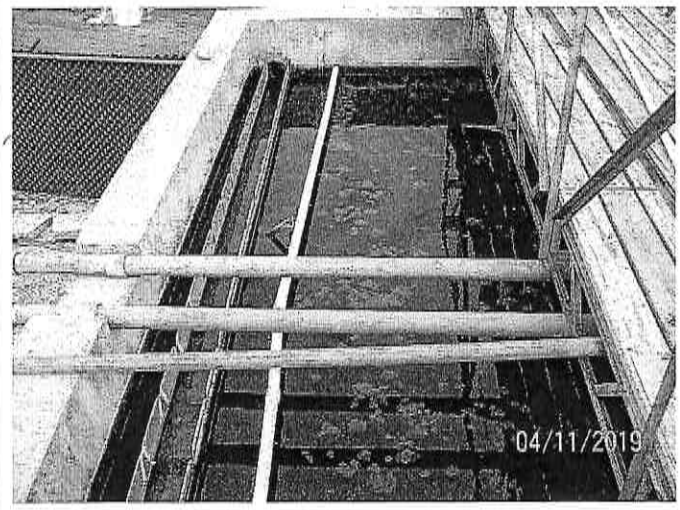
PHOTOGRAPH# 1

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Fence, gate, and warning sign



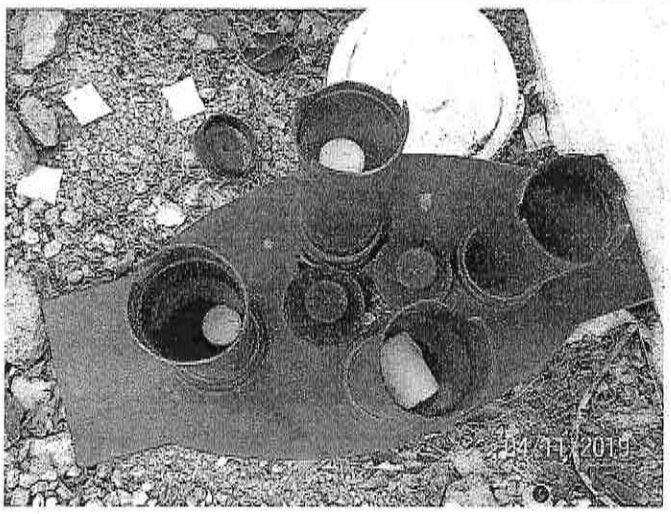
PHOTOGRAPH# 2

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Aeration



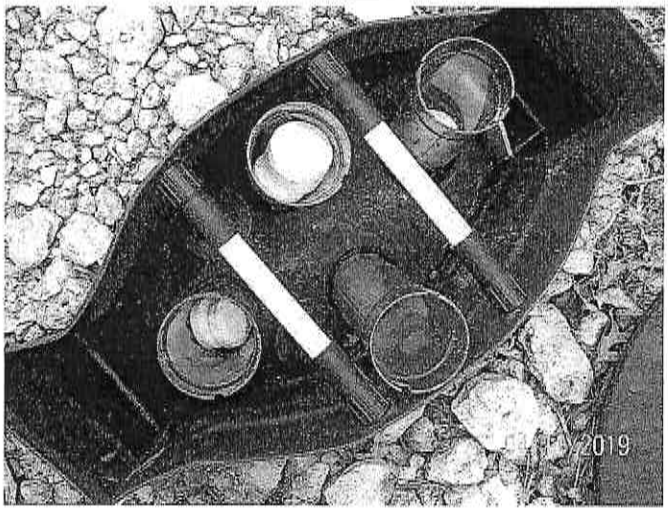
PHOTOGRAPH# 3

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Clarifier and weir



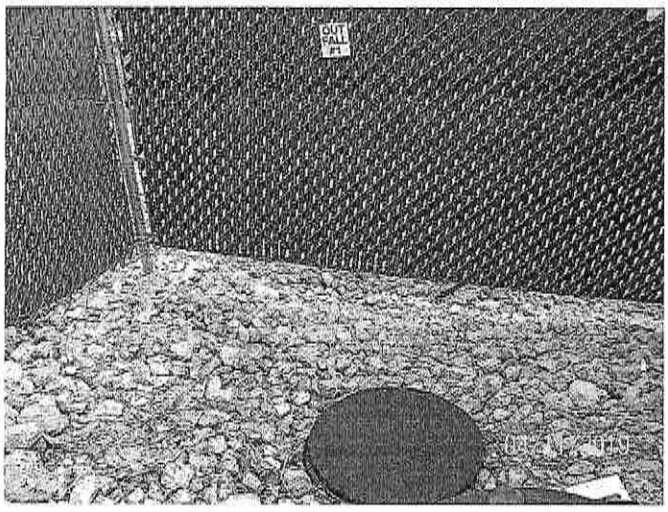
PHOTOGRAPH# 4

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Chlorination



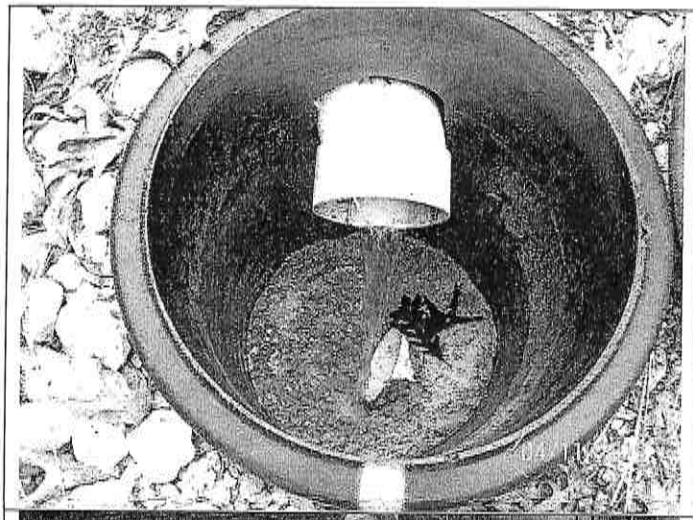
PHOTOGRAPH# 5

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Dechlorination



PHOTOGRAPH# 6

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Outfall sign and sample port



PHOTOGRAPH# 7

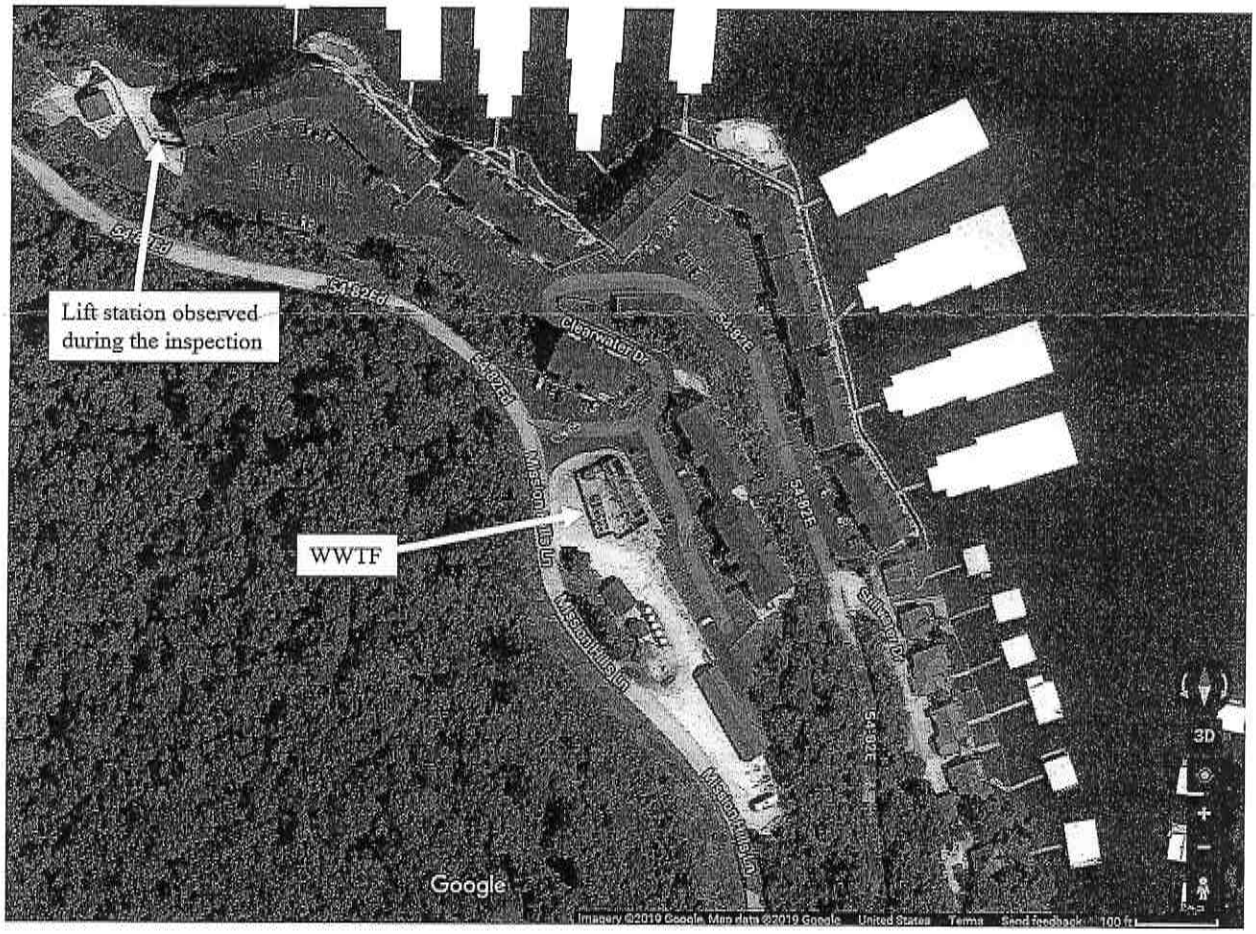
DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Inside sample port

PHOTOGRAPH# 8

DATE TAKEN: April 11, 2019
TAKEN BY: Laura Grootens
PROGRAM: WPCP
ENTITY: Clearwater Condominiums
PERMIT: MO0126985
LOCATION: WWTF
DESCRIPTION: Solid waste removed from clarifier on the ground

Attachment – Aerial Photograph
Clearwater Condominiums WWTF

Aerial Photograph Courtesy of Google Maps



Sludge handling checklist for wastewater treatment facilities

Facility Name:	MSOP #:		
Clearwater Condominiums WWTF	MO0126985		
Issue to be addressed	**Options**		**Not Inspected**
What method is used for sludge management?	Contract Hauler		☐
	Date		
How often is sludge removed from the facility?	As needed		☐
When was the last time sludge was removed?	Prior to 2017		☐
	Yes	**No**	**Not Inspected**
Has the Form S annual report been submitted?	☒	☐	☐
Have the applicable additional sections been submitted? (If not, please describe deficiencies below in the comments field)	☒	☐	☐
Is the form filled out correctly? (If not, please describe deficiencies below in the comments field)	☒	☐	☐
Is the monitoring frequency for metals, pathogens and vectors (WQ 423) being met?	☐	☐	☒
Are the requirements for pathogens and vector attraction (WQ 424) being met?	☐	☐	☒
Are land applied biosolids below the ceiling concentration for metals (WQ 425)?	☐	☐	☒
Are the nitrogen, soil pH and soil phosphorus limitations (WQ426) being met?	☐	☐	☒

Other Comments:

Sludge was reported as not hauled in 2017 and 2018.

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

May 31, 2019

Ms. Bonnie Burton
Camden County PWSD #5
P. O. Box 556
Camdenton, MO 65020

RE: Change to Public Drinking Water System Classification

Dear Ms. Burton:

The Missouri Department of Natural Resources is sending this letter to notify you of recent amendments to state regulation 10 CSR 60-14.010 that became effective on February 28, 2019. The amendments included changes to the classification criteria for distribution systems. The classification level affects the minimum level of certified operator necessary for the distribution system. Drinking water distribution systems range from level DS-1 as the lowest and DS-3 as the highest.

Prior to the amendment, Camden County PWSD #5 – Clearwater Condos, public water system ID number MO3302557, was classified as a level DS-2 drinking water distribution system. Following a record review on May 24, the water system's classification is now a level DS-1 drinking water distribution system.

The water system is required to have a properly certified operator with a minimum of a DS-1 certification to oversee the distribution system. Please share this letter with your operator(s). Properly trained and certified operators are a critical asset to your community and the protection of public health. To ensure continuity in operations, the regulations require public water systems to have a contingency plan for a standby replacement chief operator to be available at all times. This may be, for example, additional individuals certified at the chief operator level, a mutual assistance agreement with a neighboring system, or a pre-arrangement with a contract operator. Please review your system's contingency plan and staffing levels.

Records indicate that Mr. James J. Heppler Sr., operator certificate number 5092, is currently listed as the designated chief operator for the system. Mr. Heppler holds a level DS-III drinking water distribution operator certificate which satisfies the requirement for the system to have a chief operator that possess a valid certificate equal to or greater than the classification of the system. To view the full list of contacts for your public water system and to make changes, visit www.dnr.mo.gov/operator and conduct a facility search.

A copy of 10 CSR 60-14.010 can be found on the Secretary of State's website at https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c60-14.pdf.

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the Administrative Hearing Commission (AHC). To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal must be directed to: Administrative Hearing Commission, United States Post Office Building, Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, MO 65102. Phone: 573-751-2422, fax: 573-751-5018, and website: www.oa.mo.gov/ahc.

If you have any questions or would like to schedule a time to meet with Department staff to discuss compliance requirements, please contact Mr. Darrell Barber of my staff, by calling 417-891-4300, by email at darrell.barber@dnr.mo.gov, or via mail at Southwest Regional Office, 2040 West Woodland, Springfield, Missouri 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Mark Rader, Chief
Drinking Water Section

MDR/dbw

c: Ms. Darlene Helmig, Public Drinking Water Branch

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

JUN 4 2019

Camden County Public Water District No. 5
P.O. Box 556
Camdenton, MO 65020

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, we have issued and are enclosing your State Operating Permit to discharge from Cedar Heights Condominiums Wastewater Treatment Facility.

Please read your permit and attached Standard Conditions. They contain important information on monitoring requirements, effluent limitations, sampling frequencies and reporting requirements.

Monitoring reports required by the special conditions must be submitted on a periodic basis via the Department's electronic Discharge Monitoring Report (eDMR) system unless waived, or can be submitted on the enclosed forms if you are subject to an eDMR registration schedule as established in the permit. Upon registration, please access the eDMR system via the following link: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx. If you experience difficulties with using the eDMR system, you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.

This permit may include requirements with which you may not be familiar. If you would like the Missouri Department of Natural Resources to meet with you to discuss how to satisfy the permit requirements, an appointment can be set up by contacting the Southwest Regional Office by phone at 417-891-4300, by email at SWRO@dnr.mo.gov, or by mail at 2040 W. Woodland, Springfield, MO 65807-5912. These visits are called Compliance Assistance Visits and focus on explaining the requirements to the permit holder.

This permit is both your Federal National Pollutant Discharge Elimination System Permit and your new Missouri State Operating Permit and replaces all previous State Operating Permits issued for this facility under this permit number. In all future correspondence regarding this facility, please refer to your State Operating Permit number and facility name as shown on page one of the permit.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250, RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is: Administrative Hearing Commission, United States Post Office Building, Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, MO 65102, phone: 573-751-2422, fax: 573-751-5018, and website: www.oa.mo.gov/ahc.

Please be aware that this facility may also be subject to any applicable county or other local ordinances or restrictions.

If you have any questions concerning this permit, please do not hesitate to contact the Department's Water Protection Program at P.O. Box 176, Jefferson City, MO 65102, or by phone at 573-751-1300. Thank you.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg

Chris Wieberg
Director

CW/vs

Enclosure

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-0129038
Owner:	Camden County Public Water District No. 5
Address:	P.O. Box 556, Camdenton, MO 65020
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Cedar Heights Condominiums Wastewater Treatment Facility
Facility Address:	0.1 miles NW of the intersection of Cedar Heights Dr. & Hwy 54 Camdenton, MO 65020
Legal Description:	Sec. 33, T38N, R17W, Camden County
UTM Coordinates:	X= 517915, Y= 4205354
Receiving Stream:	Tributary to Lake of the Ozarks
First Classified Stream and ID:	Lake of the Ozarks (L2) (7205)
USGS Basin & Sub-watershed No.:	(10290110-0403)

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

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "C" Operator.
Flow equalization basin / extended aeration / chlorination / dechlorination / sludge holding tank / sludge disposal by contract hauler.
Design population equivalent is 847.
Design flow is 72,000 gallons per day.
Actual flow is 7,800 gallons per day.
Design sludge production is 15.2 dry tons/year.

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

July 1, 2019
Effective Date

Edward B. Galbraith
Edward B. Galbraith, Director, Division of Environmental Quality

June 30, 2024
Expiration Date

Chris Wieberg
Chris Wieberg, Director, Water Protection Program

OUTFALL #001

TABLE A.
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 **July 1, 2019** 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/quarter****	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/quarter****	composite**
Total Suspended Solids	mg/L		30	20	once/quarter****	composite**
E. coli (Note 1)	#/100mL		630	126	once/quarter****	grab
Ammonia as N (Apr 1 – Sep 30) (Oct 1 – Mar 31)	mg/L	5.6 10.8		1.3 2.1	once/quarter****	composite**
Total Residual Chlorine (Note 3, Page 3)	µg/L	< 130		< 130	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

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

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2019.

EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen (Note 3, Page 3)	mg/L	*		*	once/quarter****	grab
Biochemical Oxygen Demand$_5$ – Percent Removal (Note 2)	%			85	once/quarter****	calculated
Biochemical Oxygen Demand5 – Percent Removal (Note 2)	%			85	once/quarter****	calculated

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2019.

* Monitoring requirement only.
** A composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.
*** pH is measured in pH units and is not to be averaged.
**** See table on Page 3 for quarterly sampling requirements.

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

Note 2 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Percent Removal is calculated by the following formula: [(Average Influent –Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, made up from a minimum of four grab samples.

Quarterly Minimum Sampling Requirements				
Quarter	**Months**	***E. coli*, Total Residual Chlorine (TRC), and Dissolved Oxygen**	**All Other Parameters**	**Report is Due**
First	January, February, March	Not required to sample.	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	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	Sample at least once during any month of the quarter	October 28th
Fourth	October	**Sample once during October**	Sample at least once during any month of the quarter	January 28th
	November & December	Not required to sample.		

Note 3 - This permit contains a Total Residual Chlorine (TRC) limit.

(a) The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be 17 µg/L (daily maximum limit) and 8 µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation.

(b) Disinfection is required during the recreational season from April 1 through October 31. Do not chlorinate during the non-recreational months and an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary.

(c) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**

(d) If no chlorine was used in a given sampling period, an actual analysis for TRC and Dissolved Oxygen (DO) is not necessary. Simply report as "0 µg/L" for TRC and "NA" for DO.

B. 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.

C. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System.
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Sludge/Biosolids Annual Reports; and
      (2) Any additional report required by the permit excluding bypass reporting.
      After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
      (1) Notices of Termination (NOTs); and
      (2) Bypass reporting, See Special Condition #8 for 24-hr. bypass reporting requirements.
   (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

2. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
   (a) To comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.

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

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

5. Reporting of Non-Detects:
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   (b) 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 method 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).

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

C. SPECIAL CONDITIONS (continued)

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

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

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

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

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

12. 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.

13. Sludge treatment, storage and disposal practices shall be conducted in accordance with Standard Conditions Part III.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0129038
CEDAR HEIGHTS CONDOMINIUMS WASTEWATER TREATMENT FACILITY

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

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

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

This Factsheet is for a Minor Operating Permit covering domestic POTW Wastewater Treatment Facilities (WWTF).

Part I – Facility Information

Facility Type: POTW – SIC #4952
The use or operation of this facility shall be by or under the supervision of a Certified "C" Operator.
Flow equalization basin / extended aeration / chlorination / dechlorination / sludge holding tank / sludge disposal by contract hauler.
Design population equivalent is 847.
Design flow is 72,000 gallons per day.
Actual flow is 7,800 gallons per day.
Design sludge production is 15.2 dry tons/year.

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

Application Date: 12/3/18
Expiration Date: 6/30/19

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.11	Secondary	Domestic

Facility Performance History:
This facility was last inspected on June 21, 2016. The conditions of the facility at the time of inspection were found to be satisfactory. A review of discharge monitoring data submitted by the permittee did not indicate any exceedances.

Comments:
Changes in this permit include the re-calculation of Ammonia as N. and sampling and reporting frequencies have been reduced from monthly to quarterly. See Part VI of the Fact Sheet for further information regarding the addition and removal of effluent parameters. Special conditions were updated to include the requirement to submit discharge monitoring data via the Electronic Discharge Monitoring Report (eDMR) submission system.

Part II – Operator Certification Requirements

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

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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
☐ - County
☐ - Public Sewer District
☐ - State agency
☒ - Public Water Supply Districts
☐ - Private Sewer Company regulated by the Public Service Commission

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200).

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

Operator's Name: James Heppler
Certification Number: 5092
Certification Level: C

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

Part III– Operational Control Testing Requirements

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

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

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

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

Operational Monitoring Parameter	Frequency
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Aerobic Digester	Daily (M-F)
Total Residual Chlorine	Daily (M-F)

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)
Tributary to the Lake of the Ozarks	NA	NA	General Criteria	10290110-0403	0.0
Lake of the Ozarks	L1	7205	AQL, WBC-A, SCR, HHP, IRR, LWW		0.2

*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	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to the Lake of the Ozarks	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:
No receiving water monitoring requirements recommended at this time.

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

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

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

☒ - The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)], 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.

- **Ammonia as N.** Effluent limitations were re-calculated for Ammonia based on new information derived from discharge monitoring reports and on the current Missouri Water Quality Standards for Ammonia. The newly established limitations are still protective of water quality.
- **Sampling and Reporting Frequency**. Sampling and reporting frequencies were reduced from monthly to quarterly. Discharge monitoring data submitted by the permittee shows that operations at the facility have been consistent and have low variability. Therefore, the Department has found the permittee eligible for reduced monitoring frequencies. The permit is still protective of water quality.

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

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

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

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

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

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

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(2)(C)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, when a higher level authority is available, must submit information to the department for review and approval, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works

☒ - Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler.

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

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

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

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

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

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

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

NUMERIC LAKE NUTRIENT CRITERIA

☒ - This facility discharges into a lake watershed where numeric lake nutrient criteria are applicable. However, regulations established in 10 CSR 20-7.015as well as the department's lake nutrient criteria implementation plan do not require nutrient monitoring for facilities with design flows less than or equal to 0.1MGD. Should the lake within this watershed be identified as impaired due to nutrient loading, the department will conduct watershed modeling to determine if this facility has reasonable potential to cause or contribute to the impairment. Consequently, monitoring or effluent limitations may be established at a later date based on the modeling results. For more information, please see the department's Nutrient Criteria Implementation Plan at: https://dnr.mo.gov/env/wpp/rules/documents/nutrient-implementation-plan-final-072618.pdf

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

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

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

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

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

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

☒ - An RPA 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(12)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

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

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

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

☒ - This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

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

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

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

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

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

to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

f 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.

In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). A facility can apply for conditional exclusion for "no exposure" of industrial activities and materials to stormwater by submitting a permit modification via Form B2 (http://dnr.mo.gov/forms/780-1805-f.pdf) appropriate application filing fees and a completed No Exposure Certification for Exclusion from NPDES Stormwater Permitting under Missouri Clean Water Law (https://dnr.mo.gov/forms/780-2828-f.pdf) to the Department's Water Protection Program, Operating Permits Section. Upon approval of the No Exposure Certification, the permit will be modified and the Special Condition to develop and implement a SWPPP will be removed. This information will be reevaluated at the time of renewal.

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

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(86)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

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

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

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

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

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

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

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

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

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

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

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

☒ - At this time, the permittee is not required to conduct WET test for this facility.

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 does not discharge to a 303(d) listed stream.

Part VI – Effluent Limits Determination

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

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

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	1/quarter	quarterly	T
BOD_5	mg/L	1		30	20	30/20	1/quarter	quarterly	C
TSS	mg/L	1		30	20	30/20	1/quarter	quarterly	C
*Escherichia coli***	#/100mL	1, 3		630	126	630/126	1/quarter	quarterly	G
Ammonia as N (Apr 1 –Sep 30)	mg/L	2, 3	5.6		1.3	5.1/1.3	1/quarter	quarterly	C
Ammonia as N (Oct 1 – Mar 31)	mg/L	2, 3	10.8		2.1	11.7/2.2	1/quarter	quarterly	C
Chlorine, Total Residual	µg/L	1, 3	< 130		< 130	<130/ <130	1/quarter	quarterly	G
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	1/quarter	quarterly	G
PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
Dissolved Oxygen (DO)	mg/L	3, 7	*		*	*/*	1/quarter	quarterly	G
BOD_5 Percent Removal	%	1			85	85	1/quarter	quarterly	M
TSS Percent Removal	%	1			85	85	1/quarter	quarterly	M

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

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

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

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

- **Biochemical Oxygen Demand (BOD_5).** Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

- **Total Suspended Solids (TSS).** Operating permit retains 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination.**

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 mL as a geometric mean and Weekly Average of 630 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

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

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

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.11 + 0.0)1.5 – (0.0 * 0.01))/0.11$
$C_e = 1.5$ mg/L

Acute WLA: $C_e = ((0.11 + 0.0)12.1 – (0.0 * 0.01))/0.11$
$C_e = 12.1$ mg/L

$LTA_c = 1.5$ mg/L (0.576) = 0.864 mg/L [CV = 1.4, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.153) = 1.85 mg/L [CV = 1.4, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 0.864 mg/L (6.54) = **5.6** mg/L [CV = 1.4, 99th Percentile]
AML = 0.864 mg/L (1.46) = **1.3** mg/L [CV = 1.4, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.11 + 0.0)3.1 – (0.0 * 0.01))/0.11$
$C_e = 3.1$ mg/L

Acute WLA: $C_e = ((0.11 + 0.0)12.1 – (0.0 * 0.01))/0.11$
$C_e = 12.1$ mg/L

$LTA_c = 3.1$ mg/L (0.297) = 0.92 mg/L [CV = 3.61, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.086) = 1.03 mg/L [CV = 3.61, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 0.92 mg/L (11.69) = **10.8** mg/L [CV = 3.61, 99th Percentile]
AML = 0.92 mg/L (2.24) = **2.1** mg/L [CV = 3.61, 95th Percentile, n =30]

- **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]. Background TRC = 0.0 µg/L.

  Chronic WLA: $C_e = ((0.11 + 0.0)10 - (0.0 * 0.0))/0.11$
  $C_e = 10$ µg/L

  Acute WLA: $C_e = ((0.11 + 0.0)19 - (0.0 * 0.0))/0.11$
  $C_e = 19$ µg/L

  $LTA_c = 10\ (0.527) = 5.3$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 19\ (0.321) = 6.1$ µg/L [CV = 0.6, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 5.3 (3.11) = **17** µg/L [CV = 0.6, 99th Percentile]
  AML = 5.3 (1.55) = **8** µg/L [CV = 0.6, 95th Percentile, n = 4]

  The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be **17** µg/L (daily maximum limit) and **8** µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation.

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

- **Dissolved Oxygen**. This facility utilizes dechlorination chemicals in order to reduce the amount of total residual chlorine that is discharged in the effluent. Dechlorination chemicals are known to exhibit an oxygen demand on the effluent and if not properly managed the effects on the effluent DO concentrations can be significant. Monitoring only requirements have been included in this permit in order to determine if a future effluent limitation is necessary to protect water quality

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

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

Sampling Frequency Justification:
Sampling and reporting frequencies were reduced from monthly to quarterly. Discharge monitoring data submitted by the permittee shows that operations at the facility have been consistent and have low variability. The permit is still protective of water quality. Sampling for *E. coli* is set at quarterly per 10 CSR 20-7.015(9)(D)6.C.

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