Exhibit No. _____
Issue: DNR Policy; Technical, Managerial and Financial Capability of CSWR
Witness: Kristi Savage-Clarke
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: Confluence Rivers Utility Operating Company, Inc.
File Nos.: WA-2019-0299
Date: September 23, 2019

Missouri Public Service Commission

Surrebuttal Testimony

of

Kristi Savage-Clarke

September 23, 2019

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SURREBUTTAL TESTIMONY OF
KRISTI SAVAGE-CLARKE

WITNESS INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Kristi Savage-Clarke. My business address is Missouri Department of Natural Resources, Lewis and Cark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri, 65101.

Q. WHAT IS THE ROLE OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR)?

A. MDNR is a state agency created by Section 640.010, RSMo to administer the programs relating to environmental control for protecting human health and the state's natural resources.

Q. WHAT IS YOUR POSITION WITHIN MDNR?

A. I am Chief of the Water Pollution Compliance and Enforcement Section within the Water Protection Program.

Q. HOW LONG HAVE YOU BEEN EMPLOYED WITH MDNR?

A. I have been employed with MDNR since April 1, 2011. I was an Environmental Specialist for almost six years, then Unit Chief for two years. I am now the Section Chief. During my tenure at MDNR, I have been involved in approximately 700 cases.

Q. WHAT WERE YOUR DUTIES AS AN ENVIRONMENTAL SPECIALIST?

A. As an Environmental Specialist, I worked as the case manager for water pollution cases I was assigned. For each case, my duties included:

- reviewing the requirements of the system's Missouri State Operating Permit (permit) and determining whether the system's conditions and operation were compliant with the permit, as well as the Missouri Clean Water Law and its implementing regulations;
- For non-compliant systems, I recommended what actions and changes in operation and maintenance the system's owner(s)/operator(s) could take to bring the system back into compliance. This included meeting with the system's owner(s)/operator(s) to discuss the non-compliance and options for resolution;
- calculating recommended penalties under the Missouri Clean Water Law and implementing regulations for system non-compliance;
- drafting compliance instruments, such as Abatement Orders, Settlement Agreements, and injunctive relief for court orders;
- coordinating with the enforcement sections within MDNR for drinking water, waste management and air pollution for related compliance issues; and
- testifying in administrative proceedings and civil court trials regarding compliance history of systems, among other duties.

Q. PLEASE DESCRIBE YOUR PRIMARY DUTIES AS CHIEF OF THE COMPLIANCE AND ENFORCEMENT SECTION.

A. As Chief of the Compliance and Enforcement Section, I supervise a team of 10 individuals and their workloads. I am responsible for assigning cases and assist my team in understanding and interpreting the Missouri Clean Water Law and implementing regulations, as well as the permit that relates to each case they manage. I review their work product, which includes proposed actions for compliance, letters, reports, and compliance instruments such as Abatement Orders, Settlement Agreements, and court orders.

Q. HAVE YOU BEEN AUTHORIZED BY MDNR TO APPEAR AS A WITNESS IN THIS MATTER?

A. Yes.

PURPOSE

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my testimony is to provide responsive testimony to the rebuttal testimonies of Lake Perry Lot Owners Association (LPLOA) witnesses Mr. Richard DeWilde, Mr. Chad Sayre, and Mr. Glen Justis. Finally, I will provide the position of MDNR regarding Confluence Rivers' Application in this case.

Rebuttal Testimony of Richard DeWilde

Q. HAVE YOU READ THE REBUTTAL TESTIMONY OF LPLOA WITNESS RICHARD DEWILDE?

A. Yes, I have.

Q. ON PAGE 3, LINES 12-13, PAGE 5, LINES 6-8, AND PAGE 11, LINES 21-22 OF HIS REBUTTAL TESTIMONY, MR. DEWILDE ALLEGES THAT THE

APPLICATION OF CONFLUENCE RIVERS IS DETRIMENTAL TO THE PUBLIC INTEREST. DO YOU AGREE?

A. No. I do not. It is MDNR's position that Confluence Rivers' Application is not detrimental to the public interest.

Q. PLEASE EXPLAIN.

A. MDNR's permitting regulations for drinking water systems, as well as wastewater systems, set forth in preferential order the types of operating authorities to which MDNR will issue permits. For drinking water, 10 CSR 60-3.020 (6)(A) sets forth the preferential order for issuing permits to dispense:

> 1. Municipality, public water supply district, and water system regulated by the Missouri Public Service Commission (PSC). 2. Any person showing complete control over and responsibility for the public water system and all property served by it. 3. Any incorporated association of property owners served by a public water system….

In this instance, there is a preference by MDNR to issue a permit to dispense water: first, to Confluence Rivers, as a water system regulated by the Commission; second, to Lake Perry Service Company; and third, Lake Perry Lot Owners Association.

As to wastewater systems, 10 CSR 20-6.010 (2)(B) also sets forth a preferential order for issuing operating permits for wastewater treatment facilities:

> 3. **Level 3 Authority**. A municipality, public sewer district, or sewer company regulated by the Public Service Commission (PSC) other than one which qualifies under paragraph (2)(B)1. or 2. of this rule or a public water supply district…; 4. **Level 4 Authority**. Any person, industry, or group of persons contractually obligated to collectively act as a wastewater collection and treatment service, or nonprofit company

> organized under section 393.825, RSMo, with complete control of, and responsibility for the water contaminant source, point source, or wastewater treatment system. 5**. Level 5 Authority**. An association of property owners served by the wastewater treatment facility….

Emphasis added. In this instance, there is a preference by MDNR to issue an operating permit for the wastewater treatment facility: first, to Confluence Rivers as a Level 3 Authority; second, to Lake Perry Service Company as a Level 4 Authority; and third, to Lake Perry Lot Owners Association as a Level 5 Authority.

Q. WHY IS THERE A HIERARCHY WITHIN THE TYPES OF CONTINUING AUTHORITIES THAT MDNR WILL PERMIT TO DISPENSE DRINKING WATER AND OPERATE WASTEWATER TREATMENT FACILITIES?

A. As explained above, MDNR's role is to administer programs relating to environmental regulation for the protection of human health and the state's natural resources. The hierarchy in both the drinking water and wastewater regulations recognizes that higher ranked continuing authorities are typically more permanent than lower ranked continuing authorities. If permitted by MDNR, continuing authorities must be responsible for the long-term ongoing maintenance and modernization of either a wastewater or drinking water system. In my experience, higher ranked continuing authorities typically have a greater technical, managerial and financial capacity than lower ranked continuing authorities. A continuing authority with greater technical, managerial and financial capability is more likely to provide consistent asset management, which will in turn better protect the interests of human health and the environment. Delaying maintenance and repairs

due to financial shortfalls can result in system malfunctions or failure, putting human health, neighboring properties, and the environment at risk, and ultimately costing the system more money.

Q. WHAT IS TECHNICAL, MANAGERIAL AND FINANCIAL CAPACITY?

A. Capacity, as defined by the U.S. Environmental Protection Agency, includes technical, managerial, and financial capabilities, also known as TMF capacity. Systems with sufficient TMF capacity can safely and consistently provide drinking water and wastewater services to their customers and are far less likely to receive notices of violation (NOVs) for non-compliance than systems with insufficient capacity. Conversely, systems that are struggling to develop or maintain capacity may be at an increased risk for operational problems such as non-compliance violations.

Q. IS THIS THE SAME TMF CAPACITY CONCEPT USED BY THE STAFF OF THE COMMISSION.

A. It appears to be. MDNR uses TMF when evaluating drinking water permit applications, while it is my understanding that Staff uses TMF when evaluating whether to grant a CCN or allow an entity to acquire utility assets.

Q. ON PAGE 6, LINES 17-21, PAGE 7, LINES 1-12, AND PAGE 8, LINES 1 THROUGH PAGE 9, LINE 21 OF HIS REBUTTAL TESTIMONY, MR. DEWILDE GENERALLY DISCUSSES THE FINANCING ASPECT OF PURCHASING AND OPERATING THE PORT PERRY WATER AND WASTEWATER SYTEMS. DO

YOU HAVE CONCERNS WITH LAKE PERRY SERVICE COMPANY'S FINANCIAL CAPACITY?

A. Yes, I do. Assuming (1) that Lake Perry Service Company can secure enough commitments from lot owners to secure a bank loan, and (2) that Port Perry Service Company would accept Lake Perry Service Company's contingent offer for purchase, it does not appear Lake Perry Service Company's Business Plan (attached as Schedule GJ-01 to the testimony of Mr. Glen Justis) includes funds until 2024 for necessary repairs to meet the minimum design standards for Missouri community water systems. Also, there does not appear to be any funds immediately available for an emergency equipment replacement reserve. An emergency equipment replacement reserve would factor in the replacement cost of the most expensive mechanical equipment items for both the drinking water and wastewater operations and have these funds available for emergency replacement expenses only. Both these items suggest Lake Perry Service Company lacks the necessary TMF capacity to provide safe and adequate service.

Q. ON PAGE 12, LINES 13-14, MR. DEWILDE STATES MAINTENANCE AND REPAIRS…WOULD BE DELAYED BY A LARGE ENTITY SPANNING 5 STATES. HAS THIS BEEN MDNR'S EXPERIENCE WITH CONFLUENCE RIVERS' REGULATED AFFILIATES ALSO OWNED AND MANAGED BY CENTRAL STATES WATER RESOURCES, INC.?

A. No, this has not been our experience with Confluence Rivers and its affiliates, or other large entities that operate drinking water and wastewater systems in Missouri

and multiple other states. The larger entities have access to operational experts who are available to consult on all manner of repairs. These operational experts can readily identify operational improvements when necessary. Also, the larger entities often maintain 24-hour telephone lines for reporting system malfunctions. MDNR has found that Central States Water Resources, Inc. (Central States) also recognizes the importance of environmental compliance. Central States has taken on systems with major compliance issues and brought those systems back into compliance. In correspondence, we have expressed our appreciation for their proactive efforts to comply with Missouri's environmental laws and their continued effort to work with MDNR to improve protection of Missouri citizens and our natural resources. I have attached three such communications to my testimony: (1) a November 4, 2016 letter regarding Indian Hills Utilities Operating Company, Inc., marked as **Schedule KSC-S1**; (2) a March 1, 2017 letter regarding Hillcrest Utility Operating Company, Inc.'s wastewater system marked as **Schedule KSC-S2**; and (3) a February 1, 2018 letter regarding Hillcrest Utility Operating Company, Inc.'s drinking water system marked as **Schedule KSC-S3**.

Rebuttal Testimony of Chad Sayre

Q. HAVE YOU READ THE REBUTTAL TESTIMONY OF LPLOA WITNESS CHAD SAYRE?

A. Yes, I have.

Q. ON PAGE 6, BEGINNING AT LINE 18, CONTINUING THROUGH PAGE 7, LINES 1-3 OF HIS REBUTTAL TESTIMONY, MR. SAYRE ALLEGES THAT THE

APPLICATION OF CONFLUENCE RIVERS IS DETRIMENTAL TO THE PUBLIC INTEREST. DO YOU AGREE?

A. No. I do not. For the same reasons I explained above in response to the testimony of Mr. DeWilde, it is MDNR's position that Confluence Rivers' Application is not detrimental to the public interest. If recommended repairs and maintenance are delayed, it may result in a risk to human health. Waters of the state are a shared resource and system owners must be good neighbors to others who use the waters of the state.

Rebuttal Testimony of Glen Justis

Q. HAVE YOU READ THE REBUTTAL TESTIMONY OF LPLOA WITNESS GLEN JUSTIS?

A. Yes, I have.

Q. ON PAGE 4, LINES 5-7 OF HIS REBUTTAL TESTIMONY, MR. JUSTIS ALLEGES THE "PUBLIC" IN THIS CASE "PRIMARILY CONSISTS OF THE LOT OWNERS IN THE LAKE PERRY COMMUNITY (LAKE PERRY) AND NEARBY PERSONS CURRENTLY SERVED BY PPSC." DO YOU AGREE?

A. No. I do not. The public to be considered should also include the entirety of Missouri's citizens. The Missouri Clean Water Law and MDNR's implementing regulations are intended to conserve, protect, maintain, and improve the quality of Missouri's waters for all Missouri citizens. Delayed repairs or maintenance, or improper system operation, can result in pollution to waters of the state. Pollution to waters of the state can result in the loss of beneficial uses designated to the

receiving waters. This affects all Missourians. Similarly, the Missouri Safe Drinking Water Law, and MDNR's implementing regulations are intended to ensure that Missouri's public water systems provide safe drinking water to every resident and visitor to Missouri. The TMF capacity considerations developed under these environmental laws and regulations have all of Missouri in mind.

Q. ON PAGE 5, LINES 4-8, MR. JUSTIS STATES THAT LAKE PERRY SERVICE COMPANY IS A VAIABLE AND FEASIBLE ALTERNATIVE TO CONFLUENCE RIVERS. DO YOU AGREE?

A. Respectfully, I disagree. Based on my experience working with systems regulated by MDNR, and my review of Lake Perry Service Company's proposed business plan, Lake Perry Service Company would lack TMF capacity from day one. It is my opinion that Lake Perry Service Company cannot safely and consistently provide drinking water and wastewater services to their customers.

Q. ON PAGE 11, LINES 13-16, AND PAGE 18, MR. JUSTIS STATES THAT LAKE PERRY SERVICE COMPANY CAN PROVIDE SERVICE AT LOWER RATES THAN CONFLUENCE RIVERS. BASED ON YOUR EXPERIENCE, WHY ARE RATES TYPICALLY HIGHER IN REGULATED SYSTEMS VERSES PROPERTY OWNERS ASSOCIATIONS?

A. Most often, lower level continuing authorities, such as property owners associations and non-profits, do not have the resources to invest in system infrastructure to provide and maintain safe and adequate service. Many systems operated by lower level continuing authorities are one major equipment breakdown

away from a serious failure. Lake Perry Service Company's business proposal pushes out system upgrades until year 2024 due to financial restraints. Current customers of Port Perry Service Company will have to go another five (5) years before Lake Perry Service Company expects to invest in **minimum design standards**.

Also, ownership priorities can be too focused on minimizing expenditures with the intent of keeping user rates as low as possible. It is important for expenditures to be prudent, but it is equally important to avoid prolonging necessary maintenance for the sake of lower customer rates. In my experience, mismanaged assets can become a liability. The longer a system is allowed to deteriorate, the more expensive upgrades can be in the long run for customers. Significant effort is required to properly manage and operate wastewater and drinking water systems.

Q. ON PAGE 5, LINE 20, AND PAGE 21, LINES 3-14, MR. JUSTIS CONCLUDES THAT CONFLUENCE RIVERS APPLICATION IS DETRIMENTAL TO THE PUBLIC INTEREST. DO YOU AGREE?

A. No, I do not. I respectfully disagree with Mr. Justis' conclusion for the same reasons I discussed above regarding the similar conclusions reached by Mr. DeWilde and Mr. Sayre. Central States Water Resources, Inc. has an established history with maintaining its water and wastewater systems in Missouri and investing in operational improvements to ensure their systems stay in compliance with the Missouri Clean Water Law, and MDNR regulations and permits. There is a measure of safety to both human health and the environment, as well as long-

term financial benefits, when system upgrades can be made proactively instead of reactively. Confluence Rivers has a clear plan for remedying the reliability and safety issues identified in both the water and wastewater systems.

POSITION OF MDNR

Q. DOES MDNR HAVE A POSITION ON WHETHER CONFLUENCE RIVERS' APPLICATION IS DETRIMENTAL TO THE PUBLIC INTEREST?

A. MDNR believes Confluence Rivers' application to acquire substantially all the water and wastewater system assets of Port Perry Service Company, including its CCNs, is not detrimental to the public interest because Confluence Rivers has the requisite TMF capacity and can provide safe and adequate service to the customers.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

AFFIDAVIT

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

I, Kristi Savage-Clarke, state that I am the Chief of the Water Pollution Compliance and Enforcement Section within the Water Protection Program of the Missouri Department of Natural Resources; that the Surrebuttal Testimony and schedules attached hereto have been prepared by me or under my direction and supervision; and, that the answers to the questions posed therein are true to the best of my knowledge, information and belief.

Subscribed and sworn to before me this 23rd day of September, 2019.

Notary Public

My Commission Expires: February 22, 2020

(SEAL)

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

JENNIFER A. ALEXANDER
My Commission Expires
February 22, 2020
Miller County
Commission #12268775

Crawford County - PDWB
Indian Hills Utilities Operating Co. Inc.
General File
PWS ID # MO6036052

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Harry D. Bozoian, Director
DEPARTMENT OF NATURAL RESOURCES
dnr.mo.gov

NOV 07 2016

November 4, 2016

Mr. Josiah Cox, Owner
Indian Hills Utilities Operating Co. Inc.
c/o Central States Water Resources
500 Northwest Plaza Drive, Suite 500
St. Louis, MO 63074

Finding of Compliance

Dear Mr. Cox:

An Inspection was conducted by the Missouri Department of Natural Resources staff pursuant to Section 640.100.4 of the Missouri Safe Drinking Water statutes on October 26, 2016. The Indian Hills Utilities Operating Co. Inc.'s Public Water System was found to be in compliance based upon the observations made at the time of this inspection.

The Report of Inspection describes the findings and may list important recommendations that should be considered to ensure continued compliance. Your cooperation implementing those recommendations will be appreciated.

If you have questions regarding the enclosed inspection report or would like to schedule a time to meet in person, please contact Ms. Michelle Oglesby at (573) 368-7344 or in writing at the Missouri Department of Natural Resources, Southeast Regional Office, Rolla Satellite Office, 111 Fairgrounds Road (P.O. Box 250), Rolla, MO 65401.

Sincerely,

SOUTHEAST REGIONAL OFFICE

Bradley K. Ledbetter
Chief, Public Drinking Water Unit

BKL/mol

Enclosures: Report of Inspection

c: Mr. Ben Kuenzel, Midwest Water Operations LLC, 1351 Jefferson, Suite 301, Washington, MO 63090
Mr. Matt Eaton, 201 East Spencer, Cuba, MO 65453
Public Service Commission, P.O. Box 360, Jefferson City, MO 65101-0360
Public Drinking Water Branch (electronically)

Missouri Department of Natural Resources
Southeast Regional Office/Public Drinking Water Program
Report of Inspection
Indian Hills Utilities Operating Co. Inc.
500 Northwest Plaza Drive, Suite 500, St. Louis, MO 63074
Crawford County Missouri
MO6036052
November 4, 2016

Introduction

Pursuant to Section 640.100.4 of the Missouri Safe Drinking Water Statutes, a routine Compliance and Operation Inspection of Indian Hills Utilities Operating Co. Inc.'s public drinking water system was conducted by the Southeast Regional Office on October 26, 2016. This inspection was conducted to determine the facility's compliance with the Missouri Safe Drinking Water Statutes and the Missouri Safe Drinking Water Regulations. This report presents the findings and observations made during the inspection and covers all (8) critical components of a public water system; System Management and Operation, Operator Certification, Monitoring and Reporting, System Source, System Treatment, Pumping Facilities, Finished Water Storage, and Distribution System.

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

Indian Hills Utilities Operating Co. Inc.
Mr. Josiah Cox, Owner (314) 736-4672
Mr. Ben Kuenzel, Engineer (636) 432-5029
Mr. Matt Eaton, Chief Operator (573) 205-3241
Mr. Joe Cason, Operator (573) 259-43473

Missouri Department of Natural Resources (department)
Ms. Michelle Oglesby, Environmental Specialist III (573) 368-7344

Facility Description and History

The Indian Hills Utilities Operating Co. Inc.'s water system is classified as a community public water system that is in operation throughout the year. This is a primary system which is 100% groundwater. The system is comprised of two (2) wells, two (2) booster pump stations, a 263,000 gallon standpipe and a 53,000 gallon standpipe. The water system is a chlorinated system utilizing 12% sodium hypochlorite or liquid chlorine. The system serves a population of approximately 2,200 individuals with 712 service connections. The water system is unable to calculate average water usage or water loss since Mr. Cox has taken ownership of this public water system, because historical records where not turned over by the previous owner. Since Mr. Cox has taken possession of public water system, his company has been diligently replacing leaking lines and upgrading the entire system. The current upgraded water system is keeping track of water loss (only a couple of months of data at this time). However, there is no historical data to report water loss or usage.

Indian Hills Utilities Operating Co. Inc.'s water system is classified at a DS II level of certification for treatment and distribution. The operator in charge of treatment and distribution is listed as Mr. Matt Eaton, Certification #11846. Mr. Eaton has a DS II certification. Mr. Joe Cason, Certification #2316 is listed as the stand-by or backup operator. Mr. Cason has a DS III and Level C certifications.

The last inspection was conducted on August 20, 2014, with several items noted for correction for the previous owners. Since that time, Mr. Cox has upgraded the major components of this public water system. Well #1 was refurbished with a new drop pipe and pump, booster pump station, chemical injection room and equipment. There are backup pumps for treatment and a continuous chlorine reader for verification of amount of chlorine being injected into the water system. Installation of a generator for Well #1, that automatically turns on if loss of power occurs at this well and a 263,000 gallon standpipe. Previous storage at this well was inadequate for the number individuals on this water system. Well #3 was drilled for usage/back-up and set up like Well #1, along with an additional 53,000 gallon standpipe.

Since Well #2 could not be salvaged, it has been removed from the water system and plugged appropriately. Documentation of all water system ordinances, site plans, maps, sampling, etc. is being kept in one central location and operator is able to access if asked for.

Previous owner was under a Bilateral Compliance Agreement (BCA) for not obtaining a properly certified stand-by operator that was signed on July 17, 2015. This BCA was closed on April 22, 2016, after Mr. Cox provided proof of a certified operator and back-up operator for the water system.

Prior to the inspection, the files and other facility information for Indian Hills Utilities Operating Co. Inc. Public Water System (MO6036052) were reviewed. The inspection was conducted during normal business hours. Prior notification of the inspection was provided to ensure timely access to the site.

Discussion of Inspection and Observations

Upon arrival at the facility, I met with Mr. Josiah Cox, Mr. Ben Kuenzel, Mr. Matt Eaton, Mr. Joe Cason and multiple members of the Public Service Commission. During this time, I introduced myself and conducted a review of all relevant paperwork associated with the water system. Current paperwork and records appeared to be well kept and in order. It was noted that no historical records where given to Mr. Cox from the previous owner. The facility appeared to have a copy of their lead ban and cross connection agreements, emergency operations plan, coliform site plan, distribution map, and had records of all coliform and chemical sample results.

After the records review, I inspected the wells and storage tanks beginning at Well #1 and 263,000 gallon standpipe. Well #1 was drilled in 1963 and is approximately 990 feet deep with 275 feet of 8" casing. The well pumps approximately 220 gpm. The well house, treatment facilities, booster pumps and all controls appeared to be in good working condition. The 263,000 gallon standpipe has a ¼ inch screen with flap valve. The flap valve does not have a gasket and does not fit tight to overflow pipe, creating a gap that insects could get into and potentially contaminate the water storage tank. Well #3 was drilled in 2016 and is approximately 1,050 feet deep with 400 feet of 10" casing. The well pumps approximately 320 gpm. The 53,000 gallon standpipe has a ¼ inch screen with flap valve. The flap valve does not have a gasket and does not fit tight to the overflow pipe, creating a gap that insects could get into and potentially contaminating the water storage tank. Well #2 has been removed from the water system and properly plugged by Flynn Well Drilling. Also, the booster pump station at Well #2 has been removed along with the pressure tanks at Well #1.

Sampling and Monitoring

The appropriate sampling materials were taken on the inspection. The manufacturer's standard methods and sampling procedures for each instrument were followed. The instruments for field monitoring that were utilized on the inspection are the Hach chlorine colormeter, Missouri State Health Department approved bacteriological sample bottles, and the necessary reagents. All instruments were properly calibrated according to manufacturer's recommendations and all reagents were used prior to the stated expiration date. QA/QC data for all field equipment is maintained at the regional office. The sample was analyzed as coliform absent **(safe). The following analytical field data was collected at the time of inspection:**

Analytical Field Data			
Parameter	**Sample Location**	**Results**	**Units**
Bacteria (Total Coliform)	Community Hall #R2	Absent	CFU/100 ml
Chlorine (Free)	Community Hall #R2	0.93	mg/L
Chlorine (Total)	Community Hall #R2	1.15	mg/L
Bacteria (Total Coliform)	Maintenance Shed #15	Absent	CFU/100 ml
Chlorine (Free)	Maintenance Shed #15	1.11	mg/L
Chlorine (Total)	Maintenance Shed #15	1.15	mg/L

Compliance Determination and Required Actions

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

Recommendations

1. An improperly constructed flap valve on the overflow piping allows the entrance of insects into the water storage facilities.

   Overflow piping should be protected from the entrance of birds, animals or insects by a tight fitting counterweighted flap valve and/or screen. The current ¼ inch screen eliminates the entrance of birds or animals, but can allow the entrance of insects, because the flap valve is not tight fitting to the overflow piping.

   It is strongly recommended that the utility contact a water storage tank maintenance company of your choosing to replace the existing flap valve or provide a gasket so the current flap valve is tight fitting to the overflow piping, to eliminate possible contamination of the water storage facilities.

Additional Comments

I would like to commend you for your efforts and attention to the water system in providing safe potable water for the public to drink. I would also like to thank you, Mr. Ben Kuenzel, Mr. Matt Eaton, and Mr. Joe Cason for their time and assistance during the inspection. If there are any questions concerning this report please feel free to contact me at 573-368-7344.

Signatures

SUBMITTED BY:

Michelle Oglesby
Environmental Specialist III
Southeast Regional Office

REVIEWED BY:

Bradley K. Ledbetter
Chief, Public Drinking Water Unit
Southeast Regional Office

Attachments

Attachment #1 – Photos 1-17
Attachment #2 – Map – Page 5

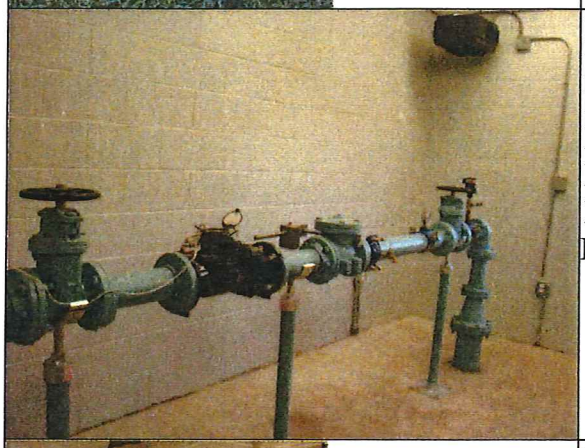
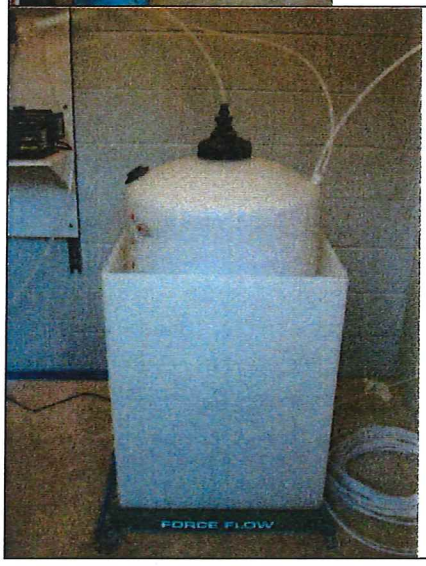
	**Photo #:001** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1
	**Photo #:002** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 - Piping
	**Photo #:003** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 – Chlorine Room with chlorine pumps.
	**Photo #:004** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 – Chlorine Room with chemical storage.

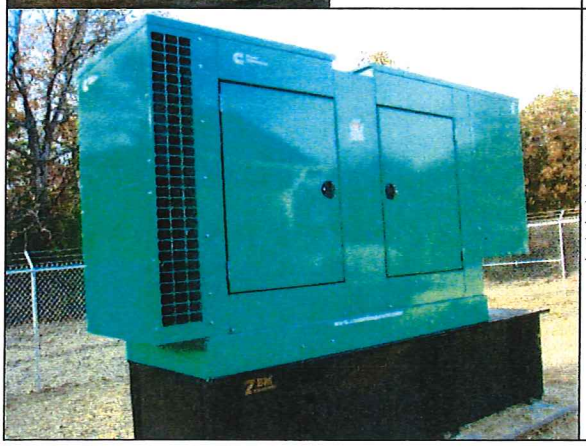
	**Photo #:005** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 – Continuous chlorine reader.
	**Photo #:006** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 – Booster Pump Station
	**Photo #:007** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 – 263,000 gallon standpipe.
	**Photo #:008** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #1 – Generator

Photo #:009
Date Taken: 10/26/2016
By: Michelle Oglesby
Program: PDWB
File: Crawford County
Location: Indian Hills Utilities Operating Co. Inc.
Description: Location where Well #2 used to be.

Photo #:010
Date Taken: 10/26/2016
By: Michelle Oglesby
Program: PDWB
File: Crawford County
Location: Indian Hills Utilities Operating Co. Inc.
Description: Location where Well #2 booster pumps station was located.

Photo #:011
Date Taken: 10/26/2016
By: Michelle Oglesby
Program: PDWB
File: Crawford County
Location: Indian Hills Utilities Operating Co. Inc.
Description: Well #3

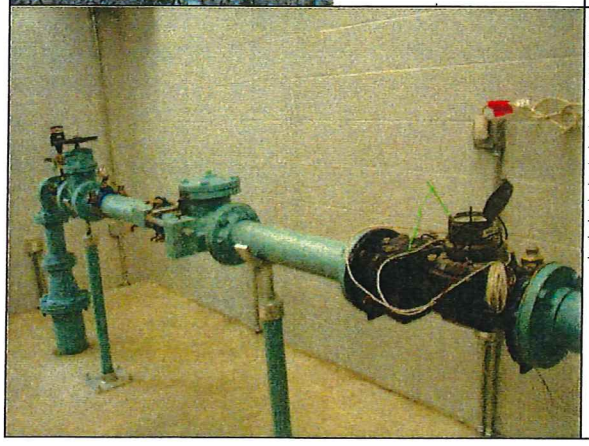


Photo #:012
Date Taken: 10/26/2016
By: Michelle Oglesby
Program: PDWB
File: Crawford County
Location: Indian Hills Utilities Operating Co. Inc.
Description: Well #3 - Piping

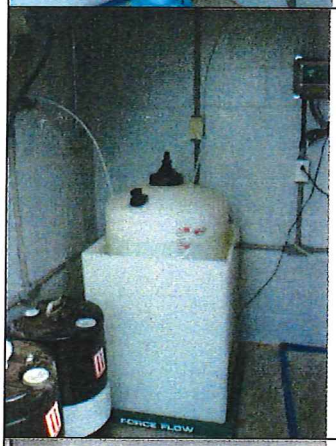
	**Photo #:013** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #3 – Chlorine Room with chlorine pumps.
	**Photo #:014** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #3 – Chlorine Room with chemical storage.
	**Photo #:015** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #3 – Continuous chlorine reader.
	**Photo #:016** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #3 – Booster Pump Station.

	**Photo #:017** **Date Taken**: 10/26/2016 **By**: Michelle Oglesby **Program**: PDWB **File**: Crawford County **Location**: Indian Hills Utilities Operating Co. Inc. **Description**: Well #3 – 53,000 gallon standpipe.

ATTACHMENT #2 – Map
November 4, 2016
Indian Hills Utilities Operating Co. Inc.

Hillcrest Manor WWTF
Cape Girardeau County
MO-0088072

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

March 1, 2017

Hillcrest Operating Utility Company, Inc.
500 Northwest Plaza Drive
Suite 500
St. Ann, MO 63074

FINDING OF COMPLIANCE

Staff from the Missouri Department of Natural Resources conducted an inspection on February 28, 2017, of the Hillcrest Manor Wastewater Treatment Facility (WWTF), at 720 Williams Street, Cape Girardeau, Missouri, in Cape Girardeau County.

Compliance with the Missouri Clean Water Law was evaluated. Hillcrest Manor WWTF 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 recommendations that should be considered to ensure continued compliance. Your cooperation implementing those recommendations will be appreciated.

Fact sheets are available on the department's web site to assist entities with understanding and following environmental requirements.

If you have any questions or would like to schedule a time to meet with department staff to discuss compliance requirements, please contact, Tim Mattingly at (573) 429-6100 or in writing at the Southeast Regional Office, 2155 N. Westwood Blvd., Poplar Bluff, MO 63901.

Sincerely,

SOUTHEAST REGIONAL OFFICE

Arthur Goodin, CHMM
Chief, Water Pollution Control Unit

Enclosures: Report of Inspection

Recycled paper

Schedule KSC-S2

RECEIVED MAR 10 2017

Missouri Department of Natural Resources
Southeast Regional Office/Water Protection Program
Report of Inspection
Hillcrest Manor WWTF
720 Williams Street/Cape Girardeau/Cape Girardeau County
MO-0088072
March 1, 2017

Introduction

Pursuant to Section 644.026.1 RSMo of the Missouri Clean Water Law, I conducted a routine compliance inspection of the Hillcrest Manor WWTF in Cape Girardeau County, Missouri, on February 28, 2017. Participants in the inspection were:

Hillcrest Manor WWTF
Terry Brady, Wastewater Operator (WW C#12381) (573) 243-4080 bstricklandengineering.com

MDNR
Tim Mattingly, Environmental Specialist III

This inspection was conducted to determine the facility's compliance with Missouri State Operating Permit MO-0088072, the Missouri Clean Water Commission Regulations, and the Missouri Clean Water Law. This report presents the findings and observations made during the compliance inspection.

Entity Description and History

Missouri State Operating Permit MO-0088072 was issued on July 1, 2013, and expires on September 30, 2017. This permit sets forth effluent limitations, monitoring requirements, and permit conditions, both standard and specific, that the permittee is to follow.

The legal description of Hillcrest Manor WWTF is listed on the permit as Landgrant 211 in Cape Girardeau County. The UTM coordinates for this site are x=798478, y=4134337. The receiving stream for this outfall is a tributary to Williams Creek, watershed number 07140107-0601.

The wastewater treatment entity consists of a two-cell lagoon, a moving bed biofilm reactor, a polishing lagoon cell followed by chlorination and de-chlorination. The design population equivalent is 940 with a design flow of 60,000 gallons per day. The actual flow is 41,680 gallons per day. Design sludge production is 7.19 dry tons per year.

The last inspection was conducted by John Chronister on May 9, 2012, and the entity was found to be in non-compliance at that time. Two major items of the non-compliance included failure to meet a Schedule of Compliance in the Missouri State Operating Permit and operating a water contaminant point source with an expired Missouri State Operating Permit. This prompted the issuance of Notice of Violation number 19130 SE and an Enforcement Action Request, both issued on June 6, 2012. A review of the compliance history as recorded in the Missouri Clean Water Information System (MoCWIS) was reviewed from February 1, 2015 through February 28, 2017 with nine violations found. These violations were as follows: exceeded the biochemical oxygen demand (BOD) limit on February 28, 2015; exceeded the *Escherichia coli* (*E. coli*) limit on May 31, 2015; exceeded the ammonia as nitrogen limit on December 31, 2015; failed to report BOD, flow, ammonia as nitrogen, and total suspended solids (TSS) on October 31, 2016; failed to report BOD on November 30, 2016; and failed to report BOD on December 31, 2016. These issues have been addressed.

An Abatement Order on Consent was agreed upon and signed on February 2, 2013. A major portion of this agreement was upgrading the WWTF to enable it to meet the current parameter limits of the Missouri State Operating Permit. Construction Permit #CP0001685 was issued by the Department to Hillcrest Operating Utility Company, Inc. to proceed with the proposed upgrades to the WWTF.

Discussion of Inspection and Observations

The inspection was conducted during normal business hours, but was announced to insure a representative from Strickland Engineering would be able to meet with me. I prearranged to meet with Mr. Terry Brady, Wastewater Operator for Strickland Engineering (WW-C #12381) at the entrance to Hillcrest Manor Subdivision. It was drizzling rain upon my arrival at the prearranged location. Meeting with Mr. Brady briefly, I explained the purpose and scope of the inspection.

Mr. Brady led the way to the WWTF. The Hillcrest Manor Subdivision WWTF was upgraded recently to a new technology, incorporating a moving bed biofilm reactor in the treatment process. Photographs were taken of the new moving bed biofilm reactor, the three-cell lagoon, the polishing cell, and the chlorination disinfection unit and de-chlorination unit.

We began the inspection by looking at the moving bed biofilm reactor. Mr. Brady informed me that there were only two that he knew of in the state. Essentially, the moving bed biofilm reactor consists of two concrete pits approximately twelve feet deep that are filled with honeycomb like plastic media about an inch in diameter and about an inch long. The effluent from the third lagoon cell is pumped into the moving bed biofilm reactor via a small lift station. It is then aerated by two blower units adjacent to the biofilm reactor. The wastewater travels to a weir structure before being discharged into the lagoon polishing cell.

There was foaming on the surface of the reactor during the inspection. I asked Mr. Brady about the foam and he informed me that any time there was a large temperature variance or if the facility experienced rainfall they had some foam on the surface. It appears that these variances slightly interfere with the microbial activity in the top layers of the biofilm.

We walked around the lagoons and I noted that the aerator in the second cell was functioning properly. There were some areas in the berms of the lagoons where burrowing animals had caused some minor damage. Mr. Brady informed me that Strickland Engineering does retain the services of a trapper who serves the WWTF's that they contract operate and that he was scheduled to come to Hillcrest Manor Subdivision in the very near future.

We proceeded to the discharge area and I observed the tablet chlorination unit, the chlorine contact chamber, the de-chlorination unit, and the discharge pipe. Mr. Brady did tell me that he often has problems with turtles getting stuck in the inlet to the chlorination unit or the inlet to the discharge pipe at the inlet. I suggested perhaps a large grid screen of some type could be placed over the opening of the inlet of the discharge pipe. The chlorination disinfection unit was not in operation as it is only required April 1 through October 31. The discharge on the day of inspection was very clear. There was no offensive odor and no trash or bottom deposits, only a little algae growth. The receiving stream had a low flow, but the water was clear with no odor.

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. The results of the field tests are in the following table.

Outfall 001-Grab Sample		
Parameter	**Result**	**Units**
pH	7.6	SU
Temperature	12.6	°C
Dissolved Oxygen	12.27	mg/L

A grab sample was taken at the discharge structure for the parameters listed in the Missouri State Operating Permit. I delivered them to the Cape Girardeau County Health Department for the courier to deliver to the Environmental Services Program for analysis. The results of the Environmental Services Program analysis were not available at the time this report was written.

Compliance Determination

Based upon observations made at the time of the inspection and a review of Discharge Monitoring Reports in MoCWIS, the facility was found to be in compliance with the Missouri Clean Water Law, the Clean Water Commission Regulations, and Missouri State Operating Permit MO-0135011.

Recommendations

No recommendations at this time.

Comments

I found this site very clean and well maintained. I would like to thank Mr. Brady for his time and assistance during the inspection.

SUBMITTED BY:

Tim Mattingly
Environmental Specialist III
Southeast Regional Office

REVIEWED BY:

Arthur Goodin, CHMM
Chief, Water Pollution Control Unit
Southeast Regional Office

Attachment #1-Photos 1 through 3

Photo #: 001
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This is a photo of the primary cell of the lagoon system at Hillcrest Manor Subdivision.

Date Taken: 2/28/2017
Program: WPC Unit

Photo #: 002
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: The second cell of the lagoon serving Hillcrest manor Subdivision. The aerator was fully functional.

Date: 2/28/2017
Program: WPC Unit

Photo #: 003
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: A photograph of the third cell of the Hillcrest Manor Subdivision. The pipe seen is for emergency maintenance on the second or third cells.

Date Taken: 2/28/2017
Program: WPC Unit

Attachment #2-Photos 4 through 6

Photo #: 004
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This small lift station is located between cells two and three and pumps wastewater from cell three to the moving bed biofilm reactor.

Date Taken: 2/28/2017
Program: WPC Unit

Photo #: 005
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This is a photo of the moving bed biofilm reactor. The foam seen here is minimal, only occurring during extreme temperature fluctuations or periods of rain.

Date: 2/28/2017
Program: WPC Unit

Photo #: 006
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: These are the two blowers that provide the air for the moving bed biofilm reactor. Their usage alternates between the two.

Date Taken: 2/28/2017
Program: WPC Unit

Attachment #3-Photos 7 through 9

Photo #: 007
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: A picture of the internal components of the individual blowers.

Date Taken: 2/28/2017
Program: WPC Unit

Photo #: 008
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This is a photograph of the exterior of the weir box. The wastewater travels from the moving bed biofilm reactor to this structure.

Date: 2/28/2017
Program: WPC Unit

Photo #: 009
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This is the interior of the weir box.

Date Taken: 2/28/2017
Program: WPC Unit

Attachment #4-Photos 10 through 12

Photo #: 010
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: The pipe in the center of the circle is the pipe through which the wastewater travels from the weir box into the polishing cell.

Date Taken: 2/28/2017
Program: WPC Unit

Photo #: 011
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This photo is a view of the polishing cell.

Date: 2/28/2017
Program: WPC Unit

Photo #: 012
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This is a photograph of the chlorine contact chamber. The blue box at the top of the picture is the tablet chlorinator.

Date Taken: 2/28/2017
Program: WPC Unit

Attachment #5-Photos 13 through 15

Photo #: 013
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: The blue box in this picture is the tablet de-chlorination unit. Obviously, the facility's outfall sign is also seen.

Date Taken: 2/28/2017
Program: WPC Unit

Photo #: 014
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This photo show outfall #001 for the facility. The effluent was clear with no odor.

Date: 2/28/2017
Program: WPC Unit

Photo #: 015
By: Tim Mattingly
Facility: Hillcrest Manor
Permit: MO-0088072
Location: Cape Girardeau County

Description: This is a picture of the receiving stream downstream of the WWTF. It had a low flow with a little algae growth. This stream also receives drainage for the subdivision just prior to the area where this photo was taken.

Date Taken: 2/28/2017
Program: WPC Unit

Hillcrest Utility Operating Company, Inc.
PWS ID # MO4036038

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

February 1, 2018

Mr. Josiah Cox, President
Central States Water Resources
500 Northwest Plaza Drive, Suite 500
Saint Ann, MO 63074

FINDING OF COMPLIANCE

Dear Mr. Cox:

Staff from the Department of Natural Resources conducted an inspection on January 24, 2018, of Hillcrest Utility Operating Company, Inc., located on Highway K, in Cape Girardeau County, Missouri. The entity operates under the authority of Permit to Dispense Water MO4036038.

Compliance with Missouri Safe Drinking Water Statutes Section 640.100.4 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 recommendations, to ensure continued compliance. Your cooperation in implementing those recommendations will be appreciated.

Fact sheets are available on the Department's website to assist entities with understanding and following environmental requirements.

If you have any questions or would like to schedule a time to meet with Department staff to discuss compliance requirements, please contact Mr. Michael Wyatt at (573) 840-9488 or in writing at the Missouri Department of Natural Resources, Southeast Regional Office, 2155 North Westwood Boulevard, Poplar Bluff, Missouri 63901.

Sincerely,

SOUTHEAST REGIONAL OFFICE

Bradley K. Ledbetter
Chief, Public Drinking Water Unit

BKL/mwl

Enclosures: Report of Inspection
Photo Attachment

Schedule KSC-S3

c: Public Drinking Water Branch (electronically)
Mr. Brian Strickland, P.E. and Mr. Terry Brady, Strickland Engineering, 113 West Main Street, Jackson, MO 63755

Missouri Department of Natural Resources
Southeast Regional Office/Public Drinking Water Program
Report of Inspection
Hillcrest Utility Operating Company, Inc.
Highway K, Cape Girardeau, MO 63702
Cape Girardeau County Missouri
MO4036038
February 1, 2018

Introduction

Pursuant to Section 640.100.4 of the Missouri Safe Drinking Water Statutes, a routine Compliance and Operation Inspection of Hillcrest Utility Operating Company, Inc.'s public drinking water system was conducted by the Southeast Regional Office on January 24, 2018. This inspection was conducted to determine the facility's compliance with the Missouri Safe Drinking Water Statutes and the Missouri Safe Drinking Water Regulations. This report present the findings and observations made during the inspection and covers all (8) critical components of a public water system; System Management and Operation, Operator Certification, Monitoring and Reporting, System Source, System Treatment, Pumping Facilities, Finished Water Storage and Distribution System.

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

Hillcrest Utility Operating Company, Inc.
Mr. Brian Strickland, P.E., Contract Operator – Present during records review only (573) 243-4080
Mr. Terry Brady, Chief Operator (573) 450-1319

Missouri Department of Natural Resources (Department)
Mr. Michael Wyatt, Environmental Specialist III

Facility Description and History

Hillcrest Utility Operating Company, Inc.'s water system is classified as a community public water system that is in operation throughout the year. This is a primary system which is 100% groundwater and is comprised of one (1) active drinking water well. The supply has an estimated 2,100 gallon hydro-pneumatic pressure tank and a 58,000 gallon ground storage tank in operation. 10.0% sodium hypochlorite bleach is currently being fed for disinfection purposes. The system serves an estimated population of 700 individuals with 238 active service connections available. The supply produces an average of 32,266 gallons per day and a maximum of 51,000 gallons per day. According to information obtained during the inspection, water loss for 2017 was estimated at 2.0%.

Hillcrest Utility Operating Company, Inc.'s water system is classified at a DS-I distribution system certification level. The operator in charge is listed as Mr. Terry Brady, Certification #12381. Mr. Brady has a C level treatment certification and a DS-I level certification for distribution. The backup operator is listed as Mr. Mike Hornbuckle, Certification #10078. Mr. Hornbuckle has a DS-II level certification for distribution.

The well and ground storage tank is located at decimal degrees [37.31096°, -89.62407°].

The last inspection was conducted on June 17, 2015, with numerous items mentioned for correction. Since that time, all items mentioned have been adequately addressed by the supply.

Prior to the inspection, the files and other facility information for Hillcrest Utility Operating Company, Inc. Public Water System (MO4036038) were reviewed. The inspection was conducted during normal business hours. Prior notification of the inspection was provided to ensure timely access to the site.

Discussion of Inspection and Observations

Upon arrival at the facility, I met with Brian Strickland, P.E., and Terry Brady. During this time, I introduced myself and began the inspection by reviewing all relevant system paperwork. Paperwork and records were in acceptable condition during the inspection. The supply's Permit to Dispense Water was issued on January 1, 1975.

The supply is currently in the process of developing a distribution system flushing program. Several new isolation valves have recently been installed. Reportedly, there is one dead end line within the distribution system that is not equipped with a flush hydrant. Approximately 85 new satellite meters have been installed thus far. The supply does not provide fire protection to its residents and reportedly there are no active backflow devices in use within the distribution system. The supply has a large stationary generator available for emergency electricity requirements.

After the records review, I inspected the supply's well; hydro-pneumatic pressure tank, chlorine feed system and 58,000 gallon ground storage tank. The well was drilled in 1973 and is approximately 450 feet deep. The well is cased to a depth of 400 feet and produces approximately 232 GPM. The estimated 2,100 gallon hydro-pneumatic pressure tank was internally sandblasted and epoxy lined in 2016. At that time, a new manway was installed into the tank side also. The 58,000 gallon ground storage tank was constructed in 2015 and has not yet been inspected. The well house building and ground storage tank are surrounded with lockable security fencing.

Sampling and Monitoring

The appropriate sampling materials were taken on the inspection. The manufacturer's standard methods and sampling procedures for each instrument were followed. The instruments for field monitoring that were utilized on the inspection were the Hach Pocket Colorimeter II; Missouri State Health Department approved bacteriological sample bottles and the necessary testing reagents. All instruments were properly calibrated according to manufacturer's recommendations and all reagents were used prior to the stated expiration date. QA/QC data for all field equipment is maintained at the regional office. Two (2) bacteriological water samples were collected during the inspection that tested (**safe**).

The following analytical field data was collected at the time of inspection:

Analytical Field Data			
Parameter	**Sample Location**	**Results**	**Units**
2 Bacteria (Total Coliform)	Route K One Stop	Absent	CFU/100 ml
Chlorine (Free)	Route K One Stop	1.06	mg/L
Chlorine (Total)	Route K One Stop	1.11	mg/L
Chlorine (Free)	Entry Point To Distribution	1.06	mg/L
Chlorine (Total)	Entry Point To Distribution	1.11	mg/L

Compliance Determination and Required Actions

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

Unsatisfactory Findings

No Unsatisfactory Findings were cited as a result of this inspection.

Recommendations

1. The supply does not routinely conduct drawdown measurement testing.

   Drawdown measurement tests performed on a monthly basis are recommended and can warn the operator of impending issues such as a screen blockage, low water table and/or excessive pump wear.

   The Department recommends that the supply conduct monthly drawdown measurement tests and record the results for review.

2. The supply has only one (1) well available.

   Having a single source of drinking water places the supply at risk of water outages.

   The Department recommends that the supply consider drilling a second well for backup water requirements when feasible.

Additional Comments

I would like to thank Mr. Brian Strickland, P.E., and Mr. Terry Brady for their cooperation and assistance during the inspection. This supply has shown great improvement and appears to be very well operated and maintained. All personnel involved are to be commended for their efforts. If there are any questions concerning this report please feel free to contact me at 573-840-9488.

Signatures

SUBMITTED BY:

Michael Wyatt
Environmental Specialist III
Southeast Regional Office

REVIEWED BY:

Bradley K. Ledbetter
Chief, Public Drinking Water Unit
Southeast Regional Office

Attachments

Attachment #1 – Photos 1-4
Attachment #2 – Photos 5-8
Attachment #3 – Map

Photo #: 001
Date Taken: 01/24/2018
By: Michael Wyatt
Program: PDWB
File: Hillcrest Utility Operating Co., Inc. – General
Location: Well house
Description: Well.

Photo #: 002
Date Taken: 01/24/2018
By: Michael Wyatt
Program: PDWB
File: Hillcrest Utility Operating Co., Inc. – General
Location: Well house
Description: Discharge piping.

Photo #: 003
Date Taken: 01/24/2018
By: Michael Wyatt
Program: PDWB
File: Hillcrest Utility Operating Co., Inc. – General
Location: Well house
Description: ~2,100 gallon hydro-pneumatic pressure tank.

Photo #: 004
Date Taken: 01/24/2018
By: Michael Wyatt
Program: PDWB
File: Hillcrest Utility Operating Co., Inc. – General
Location: Well house
Description: High service pumps.

	**Photo #: 005** **Date Taken:** 01/24/2018 **By:** Michael Wyatt **Program:** PDWB **File:** Hillcrest Utility Operating Co., Inc. – General **Location:** Chlorine feed room **Description:** Chlorine feed system.
	**Photo #: 006** **Date Taken:** 01/24/2018 **By:** Michael Wyatt **Program:** PDWB **File:** Hillcrest Utility Operating Co., Inc. – General **Location:** Back of well house building **Description:** Stationary generator.
	**Photo #: 007** **Date Taken:** 01/24/2018 **By:** Michael Wyatt **Program:** PDWB **File:** Hillcrest Utility Operating Co., Inc. – General **Location:** Tank site **Description:** 58,000 gallon ground storage tank.
	**Photo #: 008** **Date Taken:** 01/24/2018 **By:** Michael Wyatt **Program:** PDWB **File:** Hillcrest Utility Operating Co., Inc. – General **Location:** Well/tank site **Description:** Fenced well house and storage tank.


Hillcrest Utility Operating Company, Inc.
MO-4036038
Legend
58,000 gallon tank
Stationary generator
Well house
Stationary generator
58,000 gallon tank
Well house
S Forester Dr
Google Earth
N