



Missouri Department of dnr.mo.gov

**NATURAL RESOURCES**

Eric R. Greitens, Governor

Carol S. Comer, Director

August 29, 2017

Ms. Jessica Braden  
Great Southern Bank  
P.O. Box 68  
Springfield, MO 65801

**UNSATISFACTORY FINDINGS  
RESPONSE REQUIRED**

Dear Ms. Braden:

Staff from the Missouri Department of Natural Resources (Department) conducted an inspection on August 9, 2017, of the Reflections Condos public water system (system). The system operates under the public water system identification number MO3071337. Compliance with Safe Drinking Water Law was evaluated.

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 will result in a follow-up inspection. In addition, enforcement actions, including the assessment of monetary penalties, may be pursued.

This system was referred to the Public Drinking Water Branch for enforcement on October 7, 2009. Additional comments may be forthcoming from the Public Drinking Water Branch following receipt and review of this report. For questions concerning this enforcement action, please contact Mr. Lance Dorsey with the Public Drinking Water Branch at P.O. Box 176, Jefferson City, MO, 65102; telephone 573-751-5331.

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 this office by calling



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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

A handwritten signature in black ink, appearing to read 'Mark Rader', with a long horizontal flourish extending to the right.

Mark Rader, Chief  
Drinking Water Section

MDR/dbw

Enclosure

c: Mr. Lance Dorsey, Public Drinking Water Branch  
Mr. Brian Fredrick, Water Resource Center  
Ms. Brandy Gelber, Public Drinking Water Branch  
Ms. Airin Haselwander, Wellhead Protection Section  
Mr. Tim Ripley, Sampler – Lake of the Ozarks Water & Sewer  
Reflections Condominium Owners Association, Inc.

029.pdwp.ReflectionsCondos.mo3071337.x.2017.08.29.fy18.ins.x.dab

Carbon Copy Address Attachment

Include each individual identified in the carbon copy line in one of the groups below.

Physical Addresses:

Mr. Tim Ripley  
Lake of the Ozarks Water & Sewer  
840 Thunder Mountain Rd  
Camdenton, MO 65020

Reflections Condominium Owners Association, Inc.  
c/o Professional Management Group, Inc.  
P. O. Box 2409  
Lake Ozark, MO 65049

Email Addresses: (for those that have indicated this is the preferred method of receipt; also for SWRO staff – list names only)

Mr. Brian Fredrick, Water Resource Center  
Ms. Airin Haselwander, Wellhead Protection Section

Exchange Drive: (simply list the individuals)

Mr. Lance Dorsey, Public Drinking Water Branch  
Ms. Brandy Gelber, Public Drinking Water Branch

**Missouri Department of Natural Resources  
Southwest Regional Office/Public Drinking Water Branch  
Report of Inspection  
Reflections Condos  
Camden County, Missouri  
Public Water System ID Number MO3071337  
August 29, 2017**

**Introduction**

A routine inspection was made by the Missouri Department of Natural Resources (Department) of the transient non-community public water system serving Reflections Condos on August 9, 2017. 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:

Reflections Condos

Mr. Tim Ripley, Sampler – Lake of the Ozarks Water & Sewer, 573-346-2092

Missouri Department of Natural Resources:

Mr. Darrell Barber, Environmental Specialist

**Facility Description and History**

The system serves approximately 50 people in the condominium complex through 52 connections. The system is supplied by a single state-approved well and operates year-round.

The well was drilled in 2001 to a depth of 900 feet with six-inch casing to a depth of 440 feet. The submersible pump is set at 357 feet and is rated at 125 gallons per minute. There is no treatment of the water. System pressure and storage are provided by seven Well-X-Trol model WX-350 bladder type pressure tanks.

Reflections Condos was referred to the Public Drinking Water Branch on October 7, 2009 for violations of Missouri Safe Drinking Water Law (Section 640.115 RSMo) and Missouri Safe Drinking Water Regulation (10 CSR 60-10.010 and 10 CSR 60-3.010). As documented below, the violations that led to this referral have not been corrected.

No changes occurred since the last inspection on January 9, 2013.

The system is located in the Lake of the Ozarks Watershed (10290109).

There is an abandoned well located approximately 135 feet from the public water system's well. This well is located on property that is not owned by the public water system or the condominium owner's association. However, due to the potential for the abandoned well to serve

as a contamination source that could contaminate the public water system's well, the public water system should consider working with the owner of the abandoned well and the Department's Wellhead Protection Program to properly plug the abandoned well. For guidance on properly plugging the well, please contact Ms. Airin Haselwander in the Wellhead Protection Section at 573-368-2196.

### **Discussion of Inspection and Observation**

I contacted Mr. Tim Ripley on August 3, 2017, to schedule a compliance and operations inspection for August 9. The inspection was conducted during normal business hours.

Upon arrival I met with Mr. Tim Ripley and discussed the scope and the purpose of the inspection. I followed Mr. Ripley to the well house and reviewed the well and the bladder tanks. Photos were taken of the system components. Upon completion of the inspection, I collected a bacteriological sample from sample site 04.

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

The system is a registered major water user (ID No. 51538494). 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 Mr. Brian Fredrick at 417-891-4392.

### **Sampling and Monitoring**

One drinking water sample was collected from the outside faucet on the condominium building at 748 Pershing Dr. (sample site 04) and was submitted for microbiological analysis to the Missouri State Public Health Laboratory. The sample tested total coliform absent or "safe". No chlorine residuals were detected within the distribution system as expected for an untreated facility.

There were no monitoring or maximum contaminant level violations 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 **September 29, 2017**.

1. The public water system does not have a permit to dispense water as required by Safe Drinking Water Regulation 10 CSR 60-3.010(2)(A).

All public water systems must obtain a permit to dispense water to the public. There is no permit fee. A public water system must submit a permit to dispense application and must meet bacterial and chemical monitoring and maximum contaminant level requirements.

**REQUIRED ACTION:** Complete the enclosed application for a permit to dispense and submit it with all required documentation, including a deed to the well property, to: Missouri Department of Natural Resources, Public Drinking Water Branch, Infrastructure, Permits and Engineering Section, P.O. Box 176, Jefferson City, MO 65102, Phone 573-751-5331, Fax: 573-751-3110.

2. The public water system failed to construct the public water system in accordance with approved plans and specifications in violation of Safe Drinking Water Regulation 10 CSR60-10.010(4). Specifically, the water system failed to construct the standpipe storage tank as proposed and approved by the Department's August 6, 2009, construction authorization (project number 54556-09). Additionally, the water system failed to reconstruct the water main as proposed and approved by the Department's November 28, 2007, construction authorization (project number 54327-07).

All community public water systems must obtain written authorization (a construction permit) from the Department prior to construction, alteration, or extension of the water system. Any deviation from the approved plans and specifications affecting capacity, hydraulic conditions, operating units, the functioning of water treatment processes, or the quality of water to be delivered must be approved in writing before such changes are made. Revised plans and specifications shall be submitted to the Department for review and approval before any construction work affected by such changes is started.

Within 90 calendar days of the date of this report, the public water system shall submit two copies each of the previously-approved engineering report, plans, and specifications along with an application for a new construction permit to the Missouri Department of Natural Resources, Public Drinking Water Branch, P.O. Box 176, Jefferson City, Missouri 65102, 573-751-5331, for construction/completion of the public water system in accordance with the previously-approved engineering report, plans, and specifications. Specifically, the water system shall construct the previously approved standpipe storage tank and reconstruct the water main.

### **Recommendations**

1. The hydropneumatic (pressure) tanks do not provide adequate storage volume. Also, the use of hydropneumatic storage as the only source of storage is not appropriate for the size of the water system.

Hydropneumatic (pressure) tanks are acceptable as the only storage facilities for small water systems with 50 or fewer connections. The gross volume for hydropneumatic storage should be 35 gallons per capita and a usable volume of 6.25 gallons per capita. Since the system has a design population of approximately 156 people (three persons per dwelling unit) the usable hydropneumatic tank capacity should be 975 gallons, while the actual capacity is 245.7 gallons. This calculation is based on the specifications for a WX-350 model tank, which provides 35.1 gallons drawdown at 40/60 cut in and cut out pressures (7 tanks X 35.1 gallons = 245.7 gallons). The minimum storage capacity for non-hydropneumatic systems, not providing fire protection, shall be equal to the average daily consumption. Note: the recommended storage volume does not include any allowance for future development of the condominium complex.

Continued use of hydropneumatic storage as the only means of storage is not recommended. There may be other options that are more appropriate for this system. Please consult your engineer to determine a more specific solution to address your storage needs. A construction permit must be obtained to construct the additional storage needed for this public water system. 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 water system has piping components that do not comply with AWWA standards. Specifically, the piping in the well house includes sections of four-inch solvent-welded plastic pipe.

AWWA standards require all piping larger than two inches to be bolted-flanged mechanical joint, threaded or fusion welded pipe. Plastic piping is more susceptible to failure over time and should be replaced.

The Department recommends replacing the plastic piping in the well house.

### 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 4  
Permit to Dispense Application for Transient Noncommunity Water Systems



PHOTOGRAPH# 1  
TAKEN BY: Darrell Barber  
ENTITY: Reflections Condos  
PERMIT: MO3071337  
LOCATION: Inside well house  
DESCRIPTION: Well #1 and related discharge piping.  
DATE TAKEN: August 9, 2017  
PROGRAM: Public Drinking Water Branch



PHOTOGRAPH# 2  
TAKEN BY: Darrell Barber  
ENTITY: Reflections Condos  
PERMIT: MO3071337  
LOCATION: Inside well house  
DESCRIPTION: Seven (7) 119-gallon bladder tanks. Piping in well house includes four inch solvent-welded PVC piping, which is not recommended. Storage was not constructed per the approved plans and specifications.  
DATE TAKEN: August 9, 2017  
PROGRAM: Public Drinking Water Branch



PHOTOGRAPH# 3  
TAKEN BY: Darrell Barber  
ENTITY: Reflections Condos  
PERMIT: MO3071337  
LOCATION: Parking lot by garages and condo buildings.  
DESCRIPTION: Water main is suspended over the side of the rock bluff – was not properly buried as required by the approved plans and specifications.  
DATE TAKEN: August 9, 2017  
PROGRAM: Public Drinking Water Branch





PHOTOGRAPH# 4  
TAKEN BY: Darrell Barber  
ENTITY: Reflections Condos  
PERMIT: MO3071337  
LOCATION: Southeast of well house  
DESCRIPTION: Abandoned well approximately 135 feet from the public water system well for Reflections Condos. The abandoned well is not located on property owned by Great Southern Bank or Reflections Condominium Owners Association, Inc.  
DATE TAKEN: August 9, 2017  
PROGRAM: Public Drinking Water Branch

Kathleen Spero  
Abandoned Well Report  
August 9, 2017



Owner and contact information: Kathleen Spero property (adjacent to Reflections Condominiums) near 370 Pershing Dr., Sunrise Beach, MO

GPS Coordinates: Latitude: 38.13091 Longitude: -92.821043

Photographer: Darrell Barber

Date: August 9, 2017

Comments: Abandoned private well located on a parcel owned by Kathleen Spero, which is adjacent to a PWS well for Reflections Condominiums (MO3071337).