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November 21, 2018

Filed Electronically in TPUC Docket Roon on 11/21/2018

VIA ELECTRONIC FILING

Hon. David Jones, Chairman
c/o Sharla Dillon, Dockets and Records Manager
Tennessee Public Utilities Commission
502 Deaderick Street, 4th Floor
Nashville, TN 37243

RE: Joint Petition of Tennessee-American Water Company, and Thunder Air, Inc. d/b/a Jasper Highlands Development, Inc. for Approval of a Purchase Agreement and for the Issuance of a Certificate of Convenience and Necessity
TPUC Docket NO. 18-00099

Dear Chairman Jones:

We are enclosing for filing Thunder Air, Inc.'s Response to First Discovery Request of the Consumer Protection and Advocate Division in the above-referenced matter.

As required, the original and four copies will be mailed to your office. Please give me a call if you have any questions.

Sincerely,

Carol M. Ballard
For Horton, Ballard & Pemerton, PLLC

Attachment
cc: Daniel Whitaker, Consumer Protection and Advocate Division
Melvin J. Malone, Counsel for Tennessee-American Water Company
Dane Bradshaw

Request Number 17

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243
PHONE: 615-532-0191 FAX: 615-532-0686

March 20, 2014

Mr. Jerry Hightower, PE
CTI Engineers, Inc.
1122 Riverfront Parkway
Chattanooga TN 37402

Re: Jasper Highlands Water System (PWSID# Not Yet Assigned)
Marion County
Project Number WS 13-1248
Jasper Highlands Development – Water System (Phases 1A & 1B)

Dear Mr. Hightower:

The Tennessee Department of Environment and Conservation, Division of Water Resources, acknowledges receipt of four sets of final construction documents on December 13, 2013.

This project consists of 8-inch, 6-inch, and 2-inch water lines along with two water pumping stations; a 15,000 gallon storage tank; and a master meter connection to the South Pittsburg Water System. This project will serve 85 lots in Phase 1A and an additional 139 lots in Phase 1B As indicated by our stamp, this project has been approved for construction.

This letter, with the enclosed engineering documents bearing our official stamp, constitutes approval by the Commissioner of the Tennessee Department of Environment and Conservation for construction of the referenced facility. Approval is granted in accordance with the Tennessee Safe Drinking Water Act of 1983 and Regulations of the Water Quality Control Board. One complete set of plans and specifications, bearing the official stamp, must be kept at the construction site. Projects utilizing previously approved standard specifications are not required to maintain a stamped copy of the specifications at the construction site. All construction must conform with these approved documents. It is the responsibility of the water utility and/or their engineer to ensure that construction conforms to the plans and specifications. We have retained one copy of this submittal for our records. Please take note of the following comments:

The elevation of the proposed storage tank (near pump station #2) will not allow the tank to provide gravity flow storage or maintain water service during a power failure. Pump station #2 will have to run continuously to maintain water pressure in the system. When the Jasper Highlands development reaches 50 active water service connections, additional water storage capacity will be required at a higher elevation.

Approval expires one year from the stamped approval date unless construction is either underway or complete. Any request for its extension must be made prior to this expiration date. Deviations from the approved plan documents which may affect the quality or quantity of potable water must be submitted and approved in writing before such changes are made.

The Division's appropriate Field Office may desire to schedule an inspection of the construction work to verify compliance with the approved plans and specifications. Therefore the engineer or the water utility shall notify the Chattanooga Field Office of the start of construction. This notification may be made by completing and mailing the attached "Construction Start Notification" form to the field office.

To expedite matters, please reference the assigned WS Project Number on future correspondence. If we may be of any assistance, please contact us at (615) 532-0191.

Sincerely,

R. William Hench, P.E.
Drinking Water Engineering
Division of Water Resources

RWH/ DWS104

Enclosures: Approved Construction Documents
Construction Start Notification Form

cc: Chattanooga Field Office - Division of Water Resources
Donald Blansett, South Pittsburg Water System
John Thornton, Thunder Enterprises

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243
PHONE: 615-532-0191 FAX: 615-532-0686

July 22, 2016

Mr. Joseph Parks, PE
March Adams & Associates
310 Dodds Avenue
PO Box 3689
Chattanooga TN 37404

Re: Jasper Highlands (PWSID# 0008286)
Marion County
Project Number DW 16-0816
Jasper Highlands Phase 2 - Water Lines & Storage Tank

Dear Mr. Parks:

The Tennessee Department of Environment and Conservation, Division of Water Resources, acknowledges receipt of five sets of final construction documents on July 20, 2016.

This project consists of approximately 35,800 feet of 8-inch, 6-inch, 4-inch, and 2-inch water lines along with a 269,000 gallon water storage tank. As indicated by our stamp, this project has been approved for construction.

This letter, with the enclosed engineering documents bearing our official stamp, constitutes approval by the Commissioner of the Tennessee Department of Environment and Conservation for construction of the referenced facility. Approval is granted in accordance with the Tennessee Safe Drinking Water Act of 1983 and Regulations of the Tennessee Board of Water Quality, Oil and Gas. One complete set of plans and specifications, bearing the official stamp, must be kept at the construction site. Projects utilizing previously approved standard specifications are not required to maintain a stamped copy of the specifications at the construction site. All construction must conform with these approved documents. It is the responsibility of the water utility and/or their engineer to ensure that construction conforms to the plans and specifications. We have retained one copy of this submittal for our records. Please take note of the following:

1. **The bolted steel, glass coated water storage tank must be designed/constructed in accordance with AWWA Standard D103 and disinfected in accordance with AWWA Standard C652.**
2. **Customers served with water pressure over 100 psi must have pressure reducers.**

Approval expires one year from the stamped approval date unless construction is either underway or complete. Any request for its extension must be made prior to this expiration date.

Deviations from the approved plan documents which may affect the quality or quantity of potable water must be submitted and approved in writing before such changes are made.

The Division's appropriate Field Office may desire to schedule an inspection of the construction work to verify compliance with the approved plans and specifications. Therefore the engineer or the water utility shall notify the Chattanooga Field Office of the start of construction. This notification may be made by completing and mailing the attached "Construction Start Notification" form to the field office.

To expedite matters, please reference the assigned DW Project Number on future correspondence. If we may be of any assistance, please contact us at (615) 532-0191.

Sincerely,

R. William Hench, P.E.
Drinking Water Engineering
Division of Water Resources

RWH/ DWS104

Enclosures: Approved Construction Documents
Construction Start Notification Form

cc: Chattanooga Field Office - Division of Water Resources
John Thornton, Thunder Enterprises

CONSTRUCTION START NOTIFICATION

INSTRUCTIONS: **WHEN THE CONSTRUCTION START DATE FOR A PROJECT IS KNOWN, COMPLETE THIS FORM AND MAIL OR FAX TO:**

Gary Burriss
Chattanooga Field Office
Division of Water Resources
1301 Riverfront Parkway, Suite 206
Chattanooga TN 37402
(423) 634-6389

Water System - _____

County - _____

Project Name - _____

WS Project Number - _____

Start Construction Date - _____

Estimated Completion - _____

Will this project require interruption of water service? _____ **Yes**
_____ **No**

Number of Customers Affected _____

Request Number 18

INITIAL DISTRIBUTION SYSTEM EVALUATION

IDSE

STANDARD MONITORING PLAN

For The

Jasper Highlands Water

PWSID # 0008286

In compliance with the Final Stage 2 Disinfectants and Disinfection Byproducts Rule For Systems Serving <500

July 29, 2016

Updated: 9/12/18

TABLE OF CONTENTS

Standard Monitoring Plan Form for Systems Serving < 10,000

I. GENERAL INFORMATION

A. PWS Information*

B. Date Submitted* _____

PWSID: 0000~~0~~2~~0~~6

PWS Name: Jasper Highlands Water

PWS Address: P.O. BOX 408 138 S CEDAR AVENUE

City: SOUTH PITTSBURG State: TN Zip: 37380

Population Served: _____

System Type:	Source Water Type:	Buying / Selling Relationships:
■ CWS	■ Subpart H	☐ Consecutive System
☐ NTNCWS	☐ Ground	☒ Wholesale System

C. PWS Operations

Residual Disinfectant Type: ■ Chlorine ☐ Chloramines ☐ Other: _____

Number of Disinfected Sources: 1 Surface ___ GWUDI ___ Ground ___ Purchased

D. Contact Person*

Name: Clarence E. Howard

Title: MANAGER

Phone #: 423-421-7775 Fax #: 423-220-4500

E-mail: Clarence@tn.and.com

II. IDSE REQUIREMENTS*

A. Number of Sites	B. Schedule	C. Standard Monitoring Frequency
Total: 2		
Near Entry Point: 1	☐ Schedule 1	☐ During peak historical month (1 monitoring period)
Avg Residence Time: 1	☐ Schedule 2	
High TTHM: 2	☐ Schedule 3	☒ Every 90 days (4 monitoring periods)
High HAA5: 1	☒ Schedule 4	☐ Every 60 days (6 monitoring periods)

Standard Monitoring Plan Form for Systems Serving < 500

III. SELECTING STANDARD MONITORING SITES

A. Data Evaluated Put a "✓" in each box corresponding to the data that you used to select each type of standard monitoring site. Check all that apply.

Data Type	Type of Site			
	Near Entry Pt.	Avg. Residence Time	High TTHM	High HAA5
System Configuration				
Pipe layout, locations of storage facilities		✓	✓	✓
Locations of sources and consecutive system entry points	✓			
Pressure zones				
Information on population density		✓	✓	✓
Locations of large customers			✓	✓
Water Quality and Operational Data				
Disinfectant residual data		✓	✓	✓
Stage 1 DBP data		✓	✓	✓
Other DBP data				
Microbiological monitoring data (e.g., HPC)				
Tank level data, pump run times		✓	✓	✓
Customer billing records		✓	✓	✓

B. Summary of Data* Provide a summary of data you relied on to justify standard monitoring site selection (*attach additional sheets if needed*)

During the preliminary gathering of data distribution system piping layout, pipe size and population density were the primary tools used. On into the project estimations of water retention times in the piping, storage tanks and endpoints were contributing factors. In the final stages chlorine residual and customer water usage played a big part in the selection of sites.

Standard Monitoring Plan Form for Systems Serving < 500

IV. JUSTIFICATION OF STANDARD MONITORING SITES*

Standard Monitoring Site ID (from map)[1]	Site Type	Justification
S21	☐ Near Entry Pt ■ Avg. Res. Time ☐ High TTHM ☐ High HAA5	This site should provide data in water storage tank turnover and should be representative of our system.
S22	☐ Near Entry Pt ☐ Avg. Res. Time ■ High TTHM ☐ High HAA5	This site should provide data on problems in outlying areas of the distribution system at typical sites.
S23	☐ Near Entry Pt ☐ Avg. Res. Time ■ High TTHM ☐ High HAA5	This site should provide data on minimal usage, few taps, and residual at non-typical sites.
S24	☐ Near Entry Pt ☐ Avg. Res. Time ☐ High TTHM ■ High HAA5	This site should provide viable data on locations with few customers in isolated picket areas.
S25	■ Near Entry Pt ☐ Avg. Res. Time ☐ High TTHM ☐ High HAA5	This site will provide data on DBP precursors leaving the water treatment plant.

[1] *Verify that site IDs match IDs in Section IV and on your distribution system schematic (See Section VII of this form).*

V. PEAK HISTORICAL MONTH AND STANDARD MONITORING SCHEDULE

A. Peak Historical Month* August

B. If Multiple Sources, Source Used to Determine Peak Historical Month (write "N/A" if only one source in your system)

n/a

C. Peak Historical Month Based On* (check all that apply)

☒ High TTHM ☒ Warmest water temperature

☒ High HAA5

If you used other information to select your peak historical month, explain here (*attach additional sheets if needed*)

Standard Monitoring Plan Form for Systems Serving < 500

V. PEAK HISTORICAL MONTH AND STANDARD MONITORING SCHEDULE (Continued)

D. Proposed Standard Monitoring Schedule*

Standard Monitoring Site ID (from map) [1]	Projected Sampling Date (date or week) [2]			
	Period 1	Period 2	Period 3	Period 4
JH 1	5/12/09	8/11/09	11/10/0	2/9/10
JH 15	5/12/09	8/11/09	11/10/0	2/9/10

[2] *period = monitoring period. Complete for the number of periods from Section II.C. Can list exact date or week (e. , week of 7/9/07)*

VI. PLANNED STAGE 1 DBPR COMPLIANCE MONITORING SCHEDULE*

Stage 1 DBPR Monitoring Site ID (from map) [1]	Projected Sampling Date (date or week) [2]			
	Period 1	Period 2	Period 3	Period 4
JH 1	5/5/09	8/4/09	11/3/09	2/2/10
JH 15				

[1] *Verify that site IDs match IDs on your distribution system schematic (See Section VII of this form).*

[2] *period = monitoring period. Complete for the number of periods in which you must conduct Stage 1 DBPR monitoring during IDSE monitoring. Can list exact date or week (e.g., week of 7/9/07)*

Standard Monitoring Plan Form for Systems Serving < 500

VII. DISTRIBUTION SYSTEM SCHEMATIC*

ATTACH a schematic of your distribution system.

Distribution system schematics are not confidential and should not contain information that poses a ***security risk*** to your system. EPA recommends that you use one of two options:

Option 1: Distribution system schematic with no landmarks or addresses indicated. Show locations of sources, entry points, storage facilities, standard monitoring locations, and Stage 1 compliance monitoring locations (required). Also include pressure zone boundaries and locations of pump stations. Provide map scale.

Option 2: City map without locations of pipes indicated. Show locations of sources, entry points, storage facilities, standard monitoring locations, and Stage 1 compliance monitoring locations (required). Also include boundaries of the distribution system, pressure zone boundaries and locations of pump stations. Provide map scale.

VIII. ATTACHMENTS

- ■ Distribution System Schematic* (Section VII).
- ■ Additional sheets for the summary of data or site justifications (Sections III and IV).
- ☐ Additional copies of Page 3 for justification of Standard Monitoring Sites (Section IV).
- ☐ Additional sheets for explaining how you used data other than TTHM, HAA5, and temperature data to select your peak historical month (Section V).
- ☐ Additional sheets for planned Stage 1 DBPR compliance monitoring schedule (Section VI).

Total Number of Pages in Your Plan 24

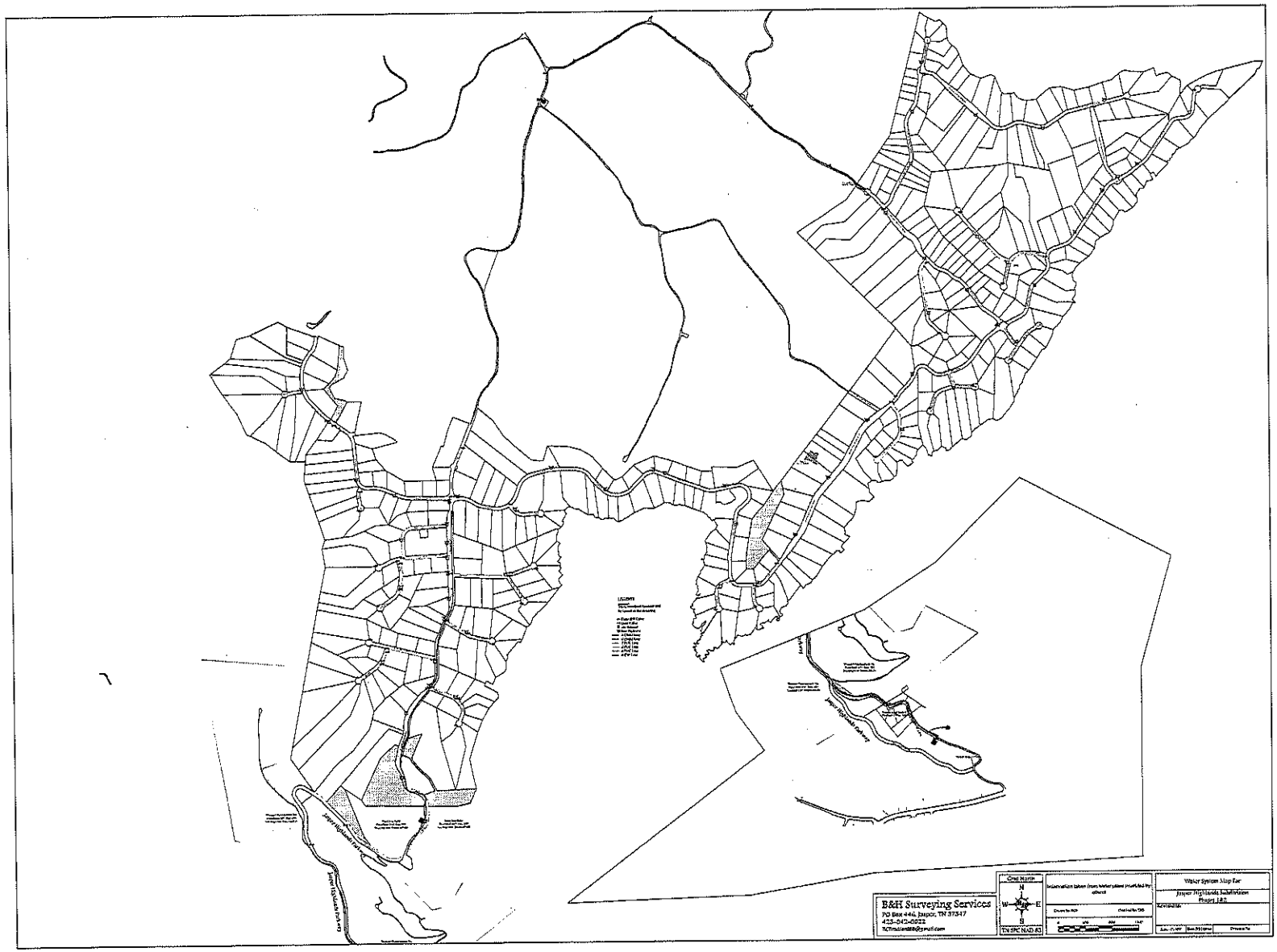
Note: Fields with an asterisk (*) are required by the Stage 2 DBPR

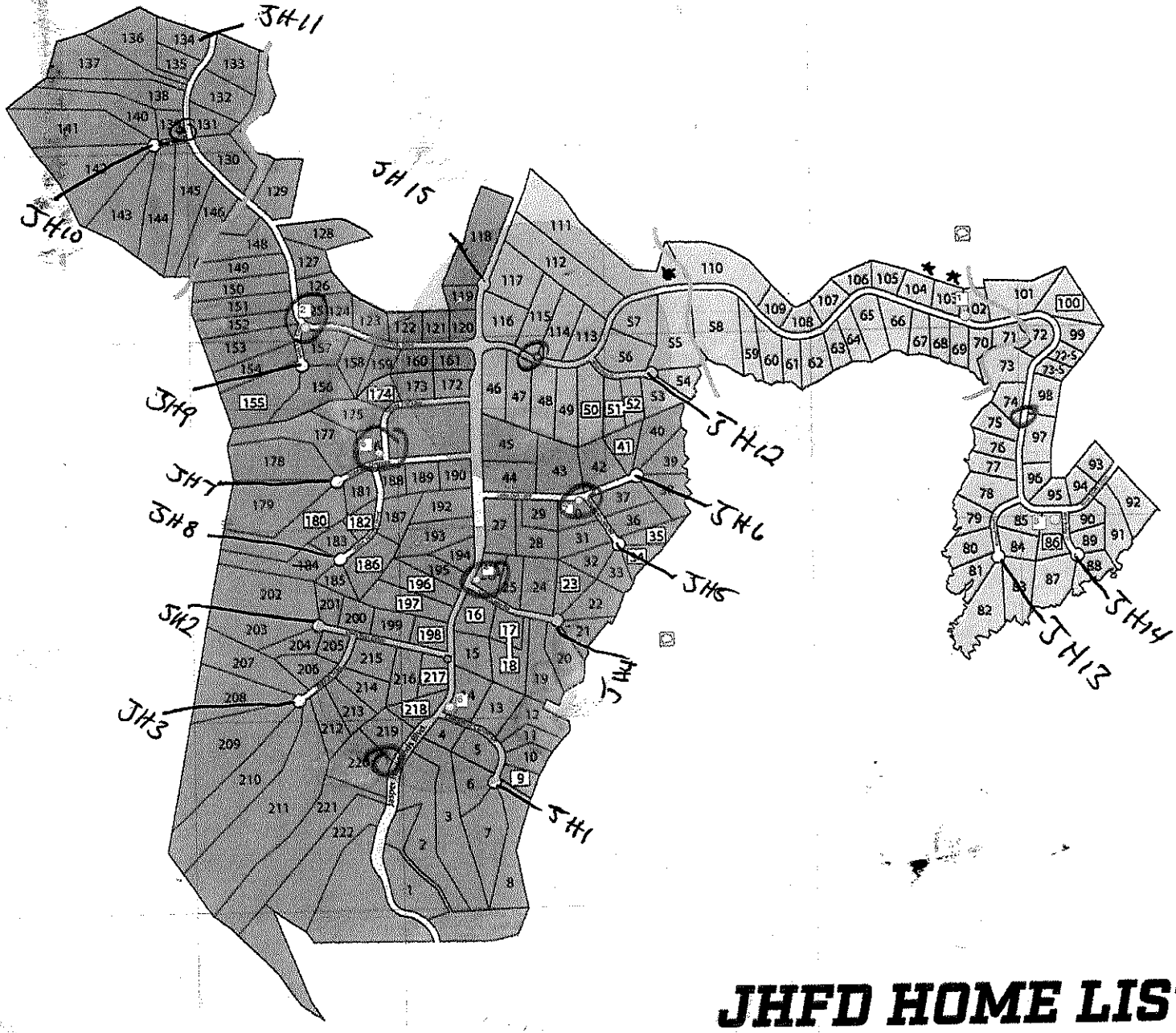
ATTACHMENT #1

DISTRIBUTION SYSTEM SCHEMATICS

OF THE

Jasper Highlands Water Distribution System

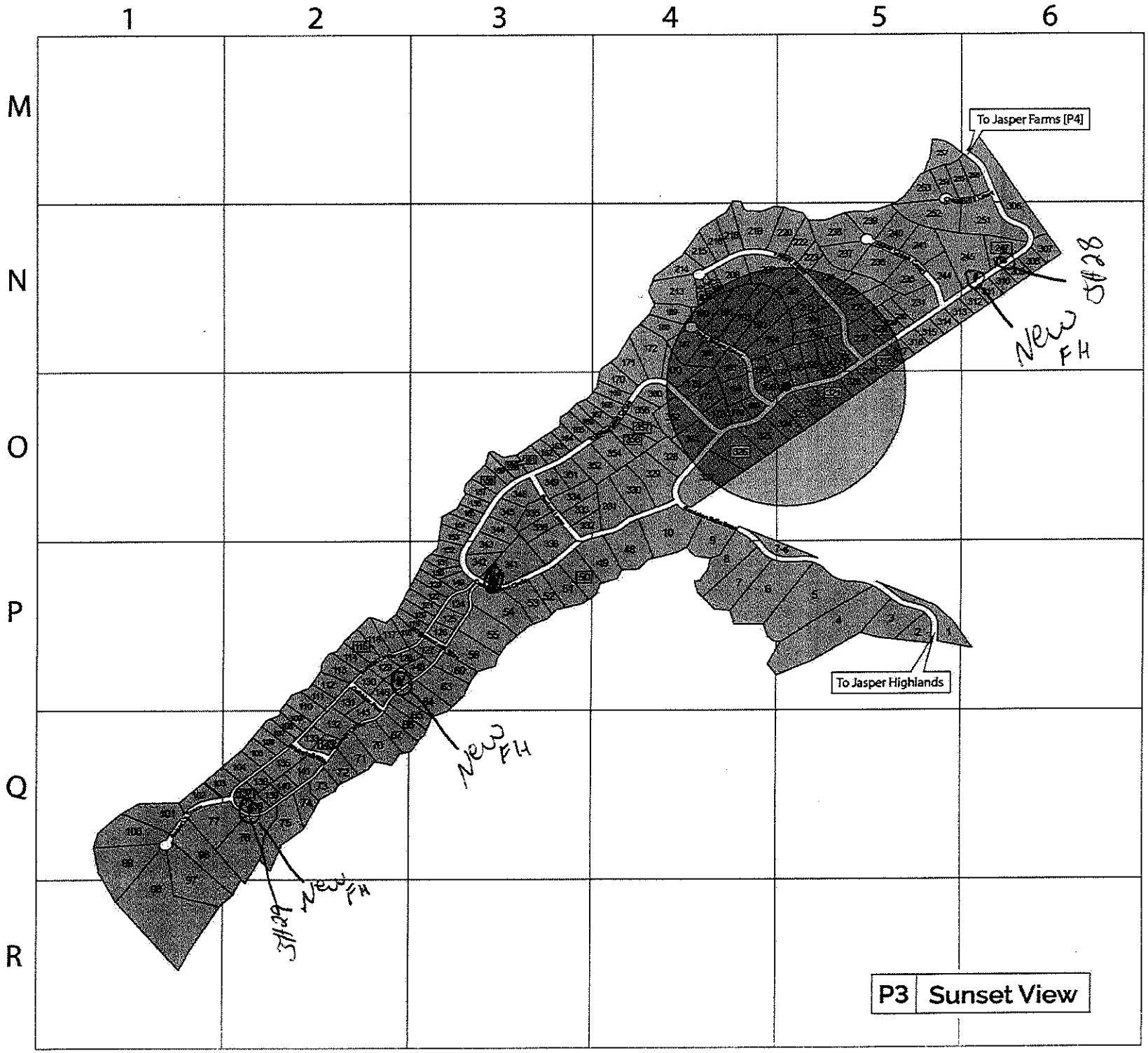

Grid North
N
W
E
S
TN SPC NAD 83
B&H Surveying Services
PO Box 444, Jasper, TN 37347
423-942-6022
Water System Map For
Jasper Highlands Subdivision
Phase 1&2



JHFD HOME LIST

07/07/2016

Phase 2
STH 23
STH 24
STH 25
STH 22
STH 21
STH 20
STH 19
STH 18
STH 17
STH 16
STH 26
STH 27
G
H
I
J
K
L


1
2
3
4
5
6
M
N
O
P
Q
R
To Jasper Farms [P4]
To Jasper Highlands
New FH
New FH
New FH
P3 Sunset View

ZONE #1 SOUTH PITTSBURG MOUNTAIN
BT, STAGE 1 and STAGE 2
DBP MONITORING SITES

BACTERIOLOGICAL TEST SITES

JH 1 Draggin Canoe

JH 15 River Bluffs Drive

STAGE 1 DBP THM/HAA5 MONITORING SITE

JH 1 Dragging Canoe

STAGE 2 DBP THM/HAA5 MONITORING SITE

JH 15 River Bluffs Drive

SOUTH PITTSBURG MOUNTAIN WATER STORAGE TANK

Jasper Highlands Underground Tank 8,000 Gallons

ATTACHMENT #2

JUSTIFICATION OF SITES

OF THE

JASPER HIGHLANDS WATER DISTRIBUTION SYSTEM

SITE JUSTIFICATIONS

STAGE 2 DBP THM/HAA5 MONITORING SITES

During the inital Stage 1 selection of sites the South Pittsburg Water System deemed the four most benefical sites to be those of highest THMs and HAA5s. All four sites chosen were of Maximum residence time in our system instead of one maximum and three average resident time locations. Therefore, it was concluded by the South Pittsburg Water System that monitoring of these sites would be considered to be representative of our system in relation to formation of DBPs in our water storage areas of the longest time in the system. In selection of the Stage 2 sites all information gathered from from Stage 1 sites were carefully considered. Stage 2 requires four additional sites to be added, one (1) Ave. Res. Time site, two (2) High THM sites and one (1) High HAA5 site. We have added an additional site, one (1) Near Entry Point Site, to help in monitoring our water treatment plant output. All sites chosen were those considered to be of greatest benefit in determining future solutions in detering or eliminating DBP in our system.

JH 1 Dragging Canoe- This site is located in Zone 1. It was chosen because it represents the Avg. Res. Time. This site should provide the optimum details of average water quality in water storage tank turnover as it travels to the endpoints.

JH 15 Jasper Highlands Blvd - This site is located in Zone 1. It was chosen because it represents a High THMs site. This site was in an area of fewer water connections and minimal water usage. This site is representative of water usage at numerous locations in outlying areas of our system. It should provide an overall view of problem areas in the system.

ATTACHMENT #3

CERTIFICATION DOCUMENTATION

BY

JASPER HIGHLANDS

CERTIFICATION
OF

STAGE 2 DBP
STANDARD MONITORING PLAN

BY

JASPER HIGHLANDS

I hereby certify that the information and data supplied to me and used in this monitoring plan is true and accurate to the best of my belief and knowledge at the time of execution.

Signature: Date: ——/——

Operator

ATTACHMENT #4

OTHER SITES OF INTEREST

OF THE

JASPER HIGHLANDS WATER DISTRIBUTION SYSTEM

ALTERNATE SITES CONSIDERED
FOR THMs AND HAA5s COMPLIANCE SAMPLING

#	Location	City	Address	Rt. #	Zone	Type
1	JH 3					
2	JH 11					
3	Jaycee Drive	S.P.	182 Jaycee Drive	COM	3	GB
4	Barker Ave	S.P.	1520 Barker Ave	4	2	FH
5	Judy Drive	S.P.	166 Judy Drive	3	2	FH
6	Water Front Drive #1	Kimball	1027 Water Front PI	5	2	SP
7	Sweedens Cove Road	Kimball	2143 Sweedens Cove Road	7	3	SP
8	Highway 2 Lofty	Kimball	920 Battlecreek Road	66	2	FH
9	Water Front Drive #2	S.P.	1639 Water Front PI	5	2	FH
10	Kimball Cove Road	Kimball	123 Kimball Cove Road	4	2	FH
11	Boyd Ave.	Kimball	1639 Boyd Ave	5	2	FH
12	Boyd Street	Kimball	20 Boyd Street	5	2	GB
13	Pondarosa Drive	Kimball	333 Pondarosa Drive	3	2	SP
14	Cain St	Kimball	24 Cain St	5	2	GB
15	Raulston Cove	Kimball	350 Raulston Cove Rd	6	2	FH
16	Cedar Point Lane	Kimball	156 Cedar Point Lane	6	2	FH
17	Highway 2	Kimball	Ellen Drive & Highway 2	6	2	SP
18	Marion Recycle Center	Kimball	HWY 2	6	2	GB
19	Misty Meadow Drive	Kimball	312 Misty Meadow Drive	6	2	SP
20	Marion Lumber Co.	Kimball	220 E Third St	COM	3	FH
21	Riverport	Kimball	849 Riverport	COM	3	FH
22	13th Street	S.P.	419 Thirteenth St	15	3	GB
23	Bob Kellerman	S.P.	450 E Third St	14	3	GB
24	Hughes Road	S.P.	125 Hughes Road	16	3	SP
25	Chance Road	S.P.	615 Chance Road	16	3	SP
26	Mountain View Apartments	S.P.	2230 Hamilton Ave	16	3	FH
27	Kirk Circle	S.P.	2000 Kirk Circle	14	3	FH
28	Dogwood Trail	S.P.	6600Dogwood Trail	9	3	FH
29	Grahman Road	S.P.	590 Graham Home Place	17	4	SP
30	Griffin Lane	S.P.	280 Griffin Lane	17	4	FH
31	Home Lane	N.H.	455 Hom Lake	17	4	FH
32	Old Ferry Road	N.H.	685 Rivers Landing	17	4	SP
33	Hogjaw (Lakeview Drive)	N.H.	1210 Lakeview Dr	17	4	GB
34	Cambell Lane	N.H.	280Cambell Lane	17	4	GB
35	Raily Lane	N.H.	460 Raily Lane	17	4	GB
36	Summers Lane	N.H.	310 Summers Lane	17	4	FH
37	R.O. Blevins (Short Hollow)	N.H.	304 Short Hollow Rd	17	4	GB
38	Long Hollow Road	N.H.	1291 Long Hollow Road	17	4	GB
39	Pine Grove Road	N.H.	146 Pine Grove Road	17	4	GB
40	Betty Hill Lane	N.H.	320 Betty Hill Lane	17	4	GB
41	Long Island Road	N.H.	2418 Long Island Road	17	4	GB
42	Brandy Hills #1	N.H.	600 Brandy Hills	17	4	SP
43	Brandy Hills #2	N.H.	306 Brandy Hills	17	4	FH
44	Rum Ridge	N.H.	335 Rum Ridge	17	4	SP
		N.H.				

Bacteriological Sample Site Plan

JASPER HIGHLANDS
PWSID #0008286

Last Updated: June 30, 2016

Table of Contents

Purpose/Objective

The Tennessee Department of Environment and Conservation, Division of Water Resources regulations require that bacteriological samples are to be collected according to a written sample siting plan. This plan is to ensure that collection sites are representative of water throughout the distribution system. Samples will be collected from areas used by all customers and will include…

- Residential areas (at least 30%)
- Dead end lines
- Low use areas
- Commercial areas
- Areas near storage tanks

Sampling sites will be distributed to ensure that no area served by the system is neglected during the year. The justification for selecting sampling sites is to aid our operators in understanding the bacteriological quality of the water throughout the system and to monitor and evaluate the quality of the water consumed by all the users of the system.

General System Information

The official name and address for this system is

Jasper Highlands
2475 Jasper Blvd
South Pittsburg, TN 37380

The PWSID number for this system is
TN0008286

The population served by this system is 30.

The Person(s) responsible for reporting to the Division of Water resources and keeping the plan updated is Keith Garth, System Operator.

Date of last plan update June 30, 2016.

The Jasper Highlands (JH) PWSID #: TN0008286 provides drinking water to 30 customers. JH is operated annually.

Water is supplied by the South Pittsburg Board of Water Works. Source water is the Tennessee River. JH is fed from the Kimball Tank which is 170,000 gallons. The tank feeds a 6" master meter which feeds pump station #1. Pump Station #1 consists of two 50 HP motors and two 170 gallons per minute pumps. From Pump Station #1 it is pump to pump in an 8,000 gallon underground tank and pump station #2 pumps water and maintains water pressure to the distribution system which has 21 customers, PVC and plastic pipe, blow offs and fire hydrants.

The system is required to collect one (1) routine bacteriological sample per month. Sample site locations are rotated between the two distil ends of the system at sites 1 and 2. In the event of a positive sample we are required to collect three repeat samples within 24 hours of notification.

JH primarily utilizes the South Pittsburg Board of Water Works bacteriological sample analyses.

Special purpose samples are collected during repairs, in response to complaints, or for other maintenance reasons. Collection of these types of samples is necessary to ensure that coliform bacteria have not entered the distribution system as a result of events such as installation of mains, main line repair or routine maintenance. Special purpose samples cannot be included in compliance or assessment trigger calculations. Special purpose samples are collected in addition to any samples collected in accordance with this plan for compliance with the Revised Total Coliform Rule.

This plan contains examples of responses to treatment triggers which may require level 1 and or level 2 assessments to be conducted. It is anticipated that the systems certified water and owner will conduct any required level 1 assessment. JH has made arrangements with South Pittsburg Board of Water Works operators who are qualified to conduct a level 2 assessment if needed. The plan also contains example public notification documents that can be used if needed.

Keith Garth, Certified Distribution Operator, is responsible for insuring that proper sampling procedures are followed and that samples are collected in accordance with this plan. Keith Garth will annually review the sampling plan and update the plan when the population served increases sufficiently to require an increased number of samples and at any time significant changes to the system are made impacting hydraulic flows in the system. A copy of this plan will be kept in the JH main office.

Number of Samples Required

The number of samples to be taken by JH is determined by the Tennessee Department of Environment and Conservation, Division of Water Resources, Rule 0400-45-1-.07(b)

Routine samples
Presently, based on a population served of approximately 30 JH is required to take one (1) routine samples each month.

Our system can take the required number of samples, or more than is required. The number of samples our system will take is one (1) each month. The number of routine samples required the month following a total coliform-positive sample is one (1).

Routine samples

The Division of Water Resources has approved one monthly monitoring. We are required to collect one (1) routine bacteriological monthly. Our system can take the required number of samples, or more than is required. The number of samples our system will take is one (1) monthly.

Additionally, the number of routine samples required the month following a total coliform-positive sample is three (3) and are subject to increased monthly monitoring if certain conditions exist.

Repeat samples
If a routine bacteriological sample is total coliform-positive, the number of repeat samples required is three (3). The system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. A set of three (3) repeat samples will be collected for each positive sample. The repeat sampling procedure will continue until all samples are total coliform negative or a treatment technique trigger has been exceeded. Reference page 11 for additional actions required in the event of a positive sample.

The person(s) responsible for reporting to the Division of Water Resources is Keith Garth.

The Division of Water Resources can be contacted at the following numbers:

Chattanooga Field Office
423-634-5745

Selected Sampling Sites

JH will collect one (1) routine sample per month. If a primary sampling site is not available, a secondary sampling site will be selected from the list for routine monitoring. Sampling will be conducted as follows.

Samples are to be taken from each designated site throughout the year and be alternated each monitoring period to ensure all areas of the system are represented during the course of a year.

One sample will be taken per month at the beginning of the month.

Primary Routine Total Coliform Sampling Sites:

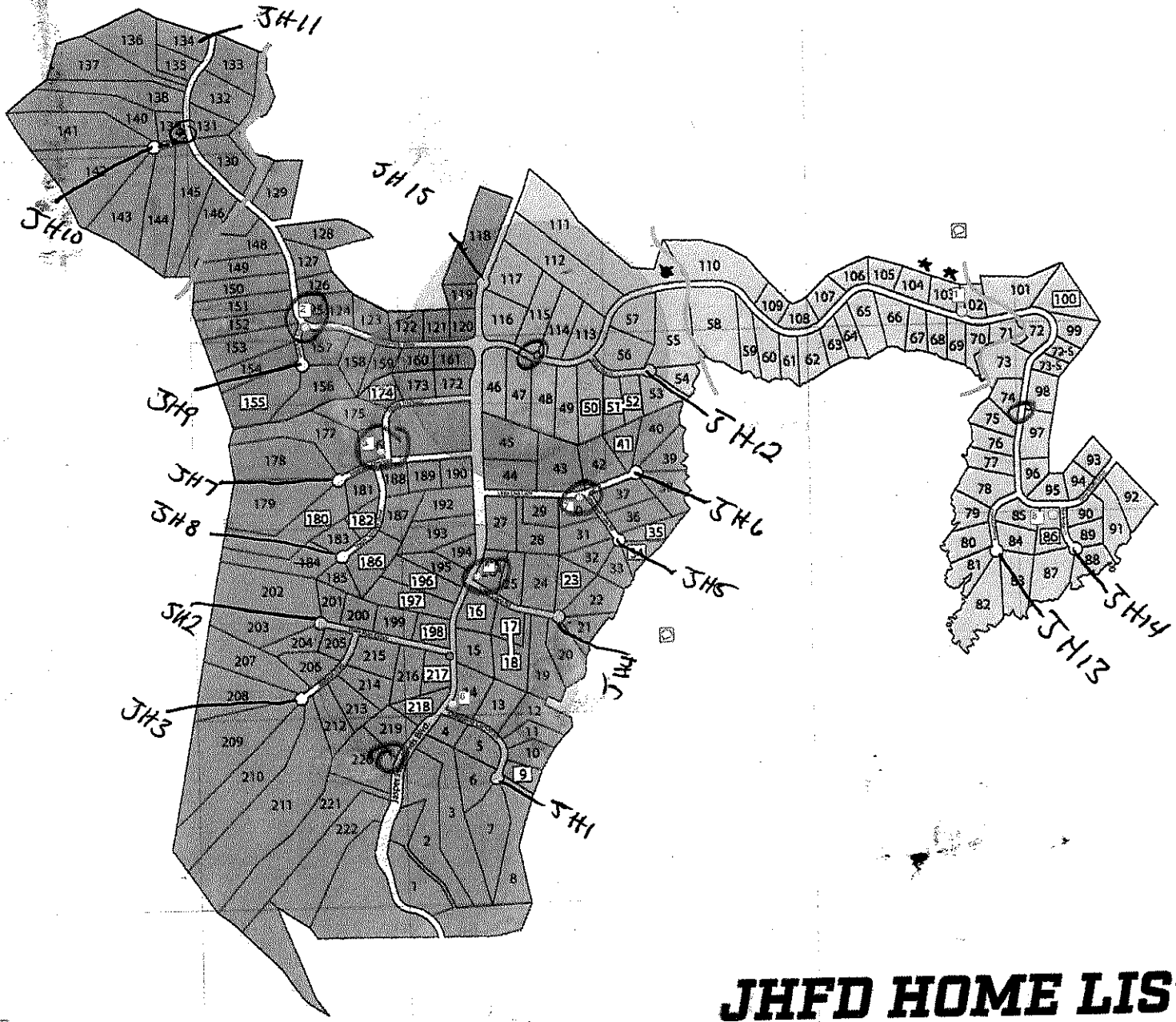
Map Site ID	Specific Addresses or GPS Coordinates	Zone	Water Source
1	Dragging Canoe	1	TN River
2	Deer Run	2	TN River
3	Bobcat Trail	2	TN River
4	Cash Cave Rd	1	TN River
5	Sequoyah Cove	1	TN River
6	Little Owl Ln.	1	TN River
7	Swedens Overlook	2	TN River
8	Jasper Springs Drive	2	TN River
9	Gray Fox	2	TN River
10	River View Ct.	3	TN River
11	1B West End of Line	3	TN River
12	Misty View Ct.	1	TN River
13	Kimball Point	4	TN River
14	Blue Bridge Ct.	4	TN River
15	JH Blvd End of Line	4	TN River

The goal should be to collect all required samples at the first or second week in the monthly monitoring period. This is to allow ample time to collect another sample should one arrive at the laboratory and not be able to be analyzed. (i.e. leaked in transit, out of holding time, lab accident, etc…). Samples must be analyzed within 30 hours of collection.

If there is a total coliform or E. coli positive sample, three repeat samples will be collected within 24 hours of notification. Reference page 17 for additional guidance.

Record Maintenance - Water and Distribution Systems

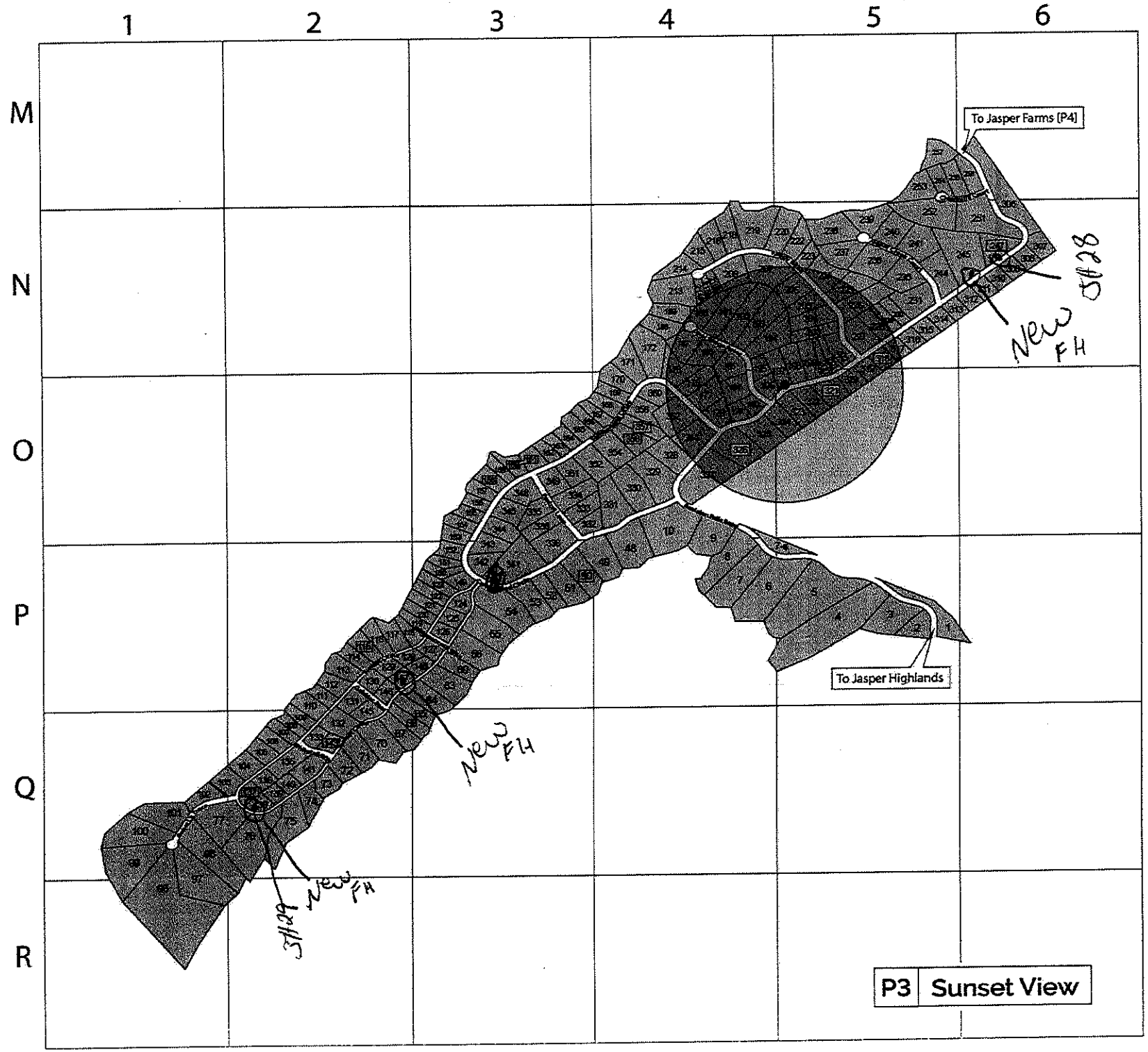
RECORD	Must Be Kept For	Source
Bacteriological Analysis	Five (5) Years	0400-45-1-.20(1)(a)
Chemical Analysis	Ten (10) Years	0400-45-1-.20(1)(a)
Actions to Correct Violations	Three (3) Years after last action	0400-45-1-.20(1)(b)
Written reports, summaries, communications relating to Sanitary Surveys	Ten (10) Years after Sanitary Survey	0400-45-1-.20(1)(c)
Variances/Exemptions	Five (5) Years following expiration	0400-45-1-.20(1)(d)
Combined Finished Turbidity	Next Sanitary Survey	0400-45-1-.20(1)(f)
Individual Filter Turbidity	Three (3) Years	0400-45-1-.31(6)(b)(4)(ii)
Daily Worksheets & Shift Logs used to produce MOR	Next Sanitary Survey	0400-45-1-.20(1)(g)
Cross-Connection Plans and Inspection Records	Five (5) Years	0400-45-1-.20(1)(h)
Complaint Logs	Five (5) Years	0400-45-1-.20(1)(h)
Facility Maintenance Records	Five (5) Years	0400-45-1-.20(1)(h)
Storage Tank Inspections	Five (5) Years (required)	0400-45-1-.20(1)(h)
	Life of the tank (Recommended)	Guidance Document, Sanitary Survey
Lead and Copper	Twelve (12) Years	0400-45-1-.33(12)
Bacteriological Records indicating adequate disinfection of lines, tanks, filters, and wells	Five (5) Years	0400-45-1-.17 (8)
Consumer Confidence Reports (CCR)	Three (3) Years	0400-45-1-.35(5)(h)
Flush and free chlorine residual for new taps where main has to be uncovered.	Next Sanitary Survey or Three (3) Years	0400-45-1-.17(32)



JHFD HOME LIST

07/07/2016

Phase 2
STH 23
STH 24
STH 25
STH 27
STH 26
STH 16
STH 17
STH 18
STH 19
STH 20
STH 21
STH 22
G
H
J
K
L


1
2
3
4
5
6
M
N
O
P
Q
R
To Jasper Farms [P4]
To Jasper Highlands
New FH
New FH
New FH
New FH
P3 Sunset View

Sampling Procedure

1. Review the sample siting plan to determine where and when samples are to be taken.
2. After arriving at the sampling site, remove any attachments on the faucet.
3. Consider the use of a sodium hypochlorite spray solution or flaming to disinfect the faucet. Flaming should not be used on plastic faucets.
4. Turn the water on and let it run for several minutes until temperature stabilizes.
   - Flush out the customer lines, and
   - Ensure that the water being sampled is from the distribution lines, not the plumbing fixture. (A thermometer can be used to determine when water is being drawn from the distribution system and not the plumbing fixture. The water temperature will stabilize once all the water from the fixture has been flushed out and the water flowing from the faucet is coming from the distribution system.)
5. Adjust the flow from the faucet to a slow, steady stream.
6. Take a sample of water flowing from the tap and determine and document the free chlorine residual.
7. Open the laboratory supplied container used to take the bacteriological sample. Consider using latex gloves to prevent contamination.
8. Do not touch the inside of the bottle or lid.
9. Do not set the lid down.
10. Do not rinse the bottle out.
11. Grasp the container near the bottom and quickly place it under the flowing stream.
12. Fill the bottle to the neck or indicated fill line. Do not overfill. Collect at least 100 mL of water, this is the volume the laboratory must have for testing.
13. Remove the sample container from the flow as soon as it is filled. SEAL THE CONTAINER IMMEDIATELY.
14. Turn off the water and replace any fixtures or attachments that were removed previously.
15. Fill out the bacteriological sample slip. Instructions are included on page 11
16. Place the container and completed forms in the shipping box.
17. Insure that the sample is delivered to the laboratory in a timely manner. Analysis must be initiated with within 30 hours from the time sample is collected.
18. Record sampling event and information in the bacteriological sampling log. Refer to page 13.

Faucets to Avoid

Avoid taking samples at these faucets if at all possible.

- Unprotected Outdoor Faucets
- Frost-proof Faucets

If you cannot avoid these, be sure to use good sampling techniques. Avoid dust, obvious contamination, splashing rain, snow and other possible sources of contamination, such as:

- An indoor faucet connected to a pressure tank, or water heater.
- A new faucet.
- A hot water faucet.
- A recently repaired faucet.
- Faucets with threaded taps.
- Mixing faucets.
- Sites with a higher-than-usual possibility for bacterial contamination.
- Swing/swivel faucets.
- Faucets positioned close to a sink or the ground. (It must be high enough to keep it from touching the sampling container.
- Leaky faucets or faucets which allow water to seep around the valve stem.
- Faucets that supply areas, such as janitorial or commercial sinks, where bacterial contamination is likely.
- Faucets that have aerators. (If such faucets are to be used, the aerators should be removed before a sample is collected.)

What does this all mean? Avoid any faucet that will threaten to contaminate a sample. The idea is to sample the water in the distribution system, not necessarily the condition of the plumbing fixture. You may not always be able to avoid all these types of faucets. If you have to take a sample from one of these faucets, you should exercise extreme care and use good sampling techniques including spray disinfection or flaming of the faucet where appropriate.

Bacteriological Sample Slip Information

DATE: A SAMPLE COLLECTOR: M

TIME: B CHLORINE RESIDUAL: D

SYSTEM: Japer Highlands PSWID: 0008286 G

ADDRESS: (I) 2475 Jasper Blvd COUNTY: MARION K
SOUTH PITTSBURG TN 37380 TELEPHONE: H

SAMPLE COLLECTION POINT: J

SAMPLE TYPE: C LOCATION CODE: E

REPEAT SAMPLES: F "S" – SAME "A" ABOVE "B" BELOW

a. **Sample date**. Record the date the sample is collected. Example: August 22, 2002 would read 082202.

b. **Sample time**. Record the time of day in military time. 8:30 a.m. would be recorded as 0830. 1:30 p.m. would be recorded as 1330.

c. **Sample type**. Sample types are recorded as follows:

D – Routine	S – Special
R – Repeat	Q – Quality Control
N – New lines	F – Fix or Repair

Failure to record the correct sample type can result in a monitoring requirement violation. Most samples will be coded as a "D" for a routine sample. Follow-up samples immediately following a positive routine sample are repeat samples and are coded as "R".

d. **Chlorine Residual**. All systems that disinfect their water must record the chlorine residual when coliform samples are collected. Chlorine residuals should be reported to the nearest one tenth of a milligram per liter or one tenth of a part per million.

e. **Location code**. This 3-digit block would only be used when repeat samples are collected. The laboratory will furnish the numbers to be put in these blocks.

f. **Repeat Sample Location**. Same ☐ Above ☐ Below ☐
Only used when collecting repeat "R" samples.

g. **PSWID number**. XXXX Water System's PWSID # is 000XXX. In order to get credit for the sample, the PWSID number must be correct.

h. **Phone**. Provide a daytime telephone number to be called by the laboratory if they need to contact you about the sample.

i. **Address**. Provide the complete mailing address of the Water System from which the sample was collected.

j. **Sample Location**. Provide sufficient information so that you can return to the sample site for repeat samples if necessary and sufficient information that the sample site can be identified on your sampling site plan.

k. **County**. Record the county where the public water system is located.

Bacteriological Sample Log

Date Sample Taken MM/DD/YY	Time Sample Taken (Military time)	Sample Location	Chlorine Residual	Date Sample Mailed MM/DD/YY	Date Sample Results Reviewed	Sample Results Positive (+) Negative (-)	If Sample * Results +, Repeat Samples Taken (Yes=Y)	Date Public Notice Given

Military Time

8:30 a.m. is 0830 in MT (essentially clock time)
1:30 p.m. is 1330 in MT (clock time plus 12)

*Show Date, Time, Place, and provide for Results of each repeat sample taken on this log.

Actions to be taken if a Sample is Total Coliform-Positive

Should one of the routine samples be total coliform-positive, we are required to take a set of three (3) repeat samples. The set of repeat samples will be taken as follows:

- at least one of the repeat samples must be taken from the sampling tap where the original total coliform-positive samples was taken;
- at least one of the repeat samples must be taken at a tap within 5 service connections downstream from the original sampling site;
- at least one of the repeat samples must be taken at a tap within 5 service connections upstream from the original sampling site;
- the complete set of repeat samples must be taken within 24 hours of the system being notified of a positive coliform result, or when instructed to sample by the Division of Water Resources;
- the entire set of repeat samples must be taken on the same day.

- If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. One sample at the original positive site and two upstream samples within 5 service connections will be collected.

- To comply with the requirements of the Ground Water Rule, one untreated source water sample must be collected within 24 hours of notification. This sample shall be coded "s" for special and is in addition to the three required repeat samples.

- Should one of the repeat samples be positive, another set must be taken.

Repeat samples must be taken until:

- total coliforms are not detected in one complete set of repeat samples, or
- the system exceeds the total coliform treatment technique trigger during the month and notifies the State Department of Environment and Conservation, Division of Water Resources.

If on reduced quarterly sampling and in the event of a TC positive sample, three routine samples are required the following month.

Increased monitoring to monthly is required if:

- A level 2 assessment or two level 1 assessments are triggered in a rolling 12 month period.
- An E.coli MCL violation.
- A coliform treatment technique violation.
- Two RTCR monitoring violations in a rolling 12-month period.
- One RTCR monitoring violation and one level 1 assessment in a rolling 12 month period.

Sampling During Weekends and Holidays

Routine should be taken on Mondays and Tuesdays to avoid a problem with repeat samples. This should allow ample time for repeat samples to be collected before the weekend if they are required. If a holiday should occur, which could cause a problem with either routine or repeat sampling being submitted to the state laboratory, samples must be taken to the South Pittsburg Board of Water Works for analysis. Planning ahead, and following these guidelines, should avoid any sampling problems associated with weekends or holidays.

Should it not be possible to collect repeat samples and submit them for analysis within the required 24-hour period because of a holiday or weekend, the system will provide for a "boil water notice" to be issued until sufficient samples can be collected and analyzed to verify that the contamination has been eliminated. Refer to page 18 for an example of a "boil water notice".

Treatment Technique Triggers

Level 1 Assessments

A level 1 assessment is required to be conducted as soon as practical but no later than 30 days of the following events. A Division of Water Resources Level 1 Assessment form must be completed and submitted to the Division of Water Resources. Refer to Appendix A for Level 1 Assessment forms.

- For systems, which take less than 40 samples during a month, the system has exceeded the Level 1 treatment technique trigger if the system has more than one total coliform-positive sample, including repeat samples during a month.

- The system fails to collect every required repeat sample after any single total coliform positive sample.

Level 1 assessment for a CWS must be conducted by a licensed certified operator or the owner. The owner and certified operator will conduct Level 1 assessments if a trigger is exceeded. A State approved Level 1 Assessment form must be completed and submitted to the Division of Water Resources within 30 days of the trigger exceedance. Any sanitary defects or deficiencies must be corrected within 30 days of the trigger exceedance or in accordance with an approved schedule from the Division of Water Resources.

Treatment Technique Triggers

Level 2 Assessments

A level 2 assessment is required to be conducted as soon as practical but no later than 30 days of any of the following events.

- An E.Coli Maximum Contaminant Level (MCL) violation
- A second Level 1 assessment trigger within a rolling 12 month period.

Level 2 assessments for all systems must be conducted by an licensed operator who is certified to at least the same level as the public water system being assessed and who has completed an approved level 2 training certification course from the Division of Water Resources. A system serving a population of less than 50,000 must use a 3rd party assessor. JH has made arrangements with South Pittsburg Board of Water Works to conduct a level 2 assessment if needed.

A Division of Water Resources Level 2 Assessment form must be completed and submitted to the Division of Water Resources within 30 days of the trigger exceedance. Any sanitary defects or deficiencies must be corrected within 30 days of the trigger exceedance or in accordance with an approved schedule from the Division of Water Resources.

E.coli Maximum Contaminant Level (MCL) Violations

An E.coli MCL violation occurs when any of the following conditions exist.

- An E.coli positive repeat sample follows a Total Coliform positive routine sample.
- A Total Coliform positive repeat sample follows an E.coli positive routine sample.
- A system fails to take all required repeat samples (3) following an E.coli positive routine sample.
- A system fails to test for E.coli when any repeat sample tests positive for total coliform.

Actions to be taken if an E. coli-Positive Sample is involved in the Violation (A Violation Requiring a Tier 1 Public Notification)

If any repeat sample is E. coli -positive or any repeat sample following an E. coli-positive routine sample is total coliform-positive:

- Report the violation to the State no later than the end of the day when the system was notified of the results, unless the system is notified after the Department office is closed, in which case it must notify the State before the end of the next business day.

  Person to Contact: State Inspector at the Chattanooga Field Office
  Telephone: 423-634-5745 or 1-888-891-8332
- Notify the public using this procedure:
  - Furnish a copy of the notice to customers via direct delivery and or the local radio and television stations served by the public water system as soon as possible, **but no later than 24 hours after the violation;**
- Refer to the EPA Public Notification Handbook for specific content and delivery requirements. An example PN is contained on the following page.
  - The notice should contain the language shown in the example notice on the next page;
  - The system may want to describe what is being done to correct the problem:
    - Total number of samples taken,
    - Total number of positive samples,
    - Problem areas,
    - Mains are being flushed, etc.
    -
- A Level Two Assessment must be conducted within 30 days of the E. coli positive sample.

Tier 1 PN for Violating the *E. coli* MCL

DRINKING WATER WARNING
E. coli is Present in Rural Utility Districts Water
BOIL YOUR WATER BEFORE DRINKING OR USING

Our water system detected *E. coli* bacteria in our distribution system. As our customers, you have a right to know what happened and what we are doing to correct this situation. On April 4, 2016, we learned that coliform bacteria were present and one of our routine samples collected on April 2, 2016, was total coliform-positive (TC+). As required by the Revised Total Coliform Rule, one of our follow-up steps was to collect repeat samples at and near the location where the TC+ sample was originally taken. One of these repeat samples collected on April 5 tested positive for *E. coli.* We are now conducting additional sampling to determine the extent of the problem and are conducting a thorough investigation to determine the source of the contamination.

What should I do?
DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a rolling boil, let it boil for one minute, and let it cool before using it. Boiling kills bacteria and other organisms in the water. You may also use bottled water. Use boiled or bottled water for drinking, making ice, preparing food and washing dishes until further notice.
Also, if you have a severely compromised immune system, have an infant, or are elderly, you may be at increased risk and should seek advice about drinking water from your health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791. If you have specific health concerns, consult your doctor. We are also providing regular updates on this situation on Local Channels or Radio Station WEPG (91.0 AM).

What does this mean?
Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps and associated headaches. *E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.* These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What is being done?
We are conducting a thorough investigation to determine the source of the contamination and will be working with the State to implement corrective actions to ensure that our water supplies are protected against contamination. We will keep you informed of the steps we are taking to protect your drinking water and will provide information on any steps you should be taking. We will inform you when tests show no bacteria and you no longer need to boil your water. We are also providing regular updates on this situation on local channel or Radio Station WEPG (91.0 AM).

For more information, please contact Keith Garth, Assistant Manager of South Pittsburg Board of Water Works, at (423413-4321 or write to 106 N Elm Avenue South Pittsburg, TN 37380.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.
This notice is being sent to you by Jasper Highlands.
State Water System ID# Tn 0002697

06/30/16

Treatment Technique Violations

A treatment technique violation occurs when any of the following conditions occur.

- The system exceeds a treatment technique trigger and then fails to conduct an assessment or complete corrective actions within required timeframes.

Actions to be taken in the event of a Treatment Technique Violation (A Violation Requiring a Tier 2 Public Notification)

A public water system that has violated the treatment technique for total coliforms by failing to conduct an assessment, complete corrective actions or fails to complete the approved seasonal start up procedure must;

- Report the violation to the State no later than the end of the next business day after system learns of the violation.

  Person to Contact: State Inspector at the Chattanooga Field Office
  Telephone: 423-634-5745 or 1-888-891-8332

  - A Tier 2 Public Notice must be issued:

  Tier 2 notices must be issued within 30 days of learning of the violation.
- Refer to the EPA Public Notification Handbook for specific content and delivery requirements. Examples are contained in the next two pages

- Notify the public using this procedure:

  - Furnish a copy of the notice to the customers served by the public water system via mail or other direct delivery as soon as possible, **but no later than 30 days after the violation;**

    - The notice should contain the language shown in the example notices on the next pages;

    - The system may want to describe what is being done to correct the problem:

Tier 2 PN for Failure to Perform a Level 1 or 2 Assessment
DRINKING WATER NOTICE
JH Failed to Conduct an Assessment of the Facility and Distribution System

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the distribution system. In one sample we collected on June 12, 2016, and one sample collected on June 16, 2016, we found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct an assessment to identify problems and to correct any problems that are found. We were required to conduct a Level 1 assessment within 30 days of learning of the second total coliform-positive (TC+) sample. A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system. As our customers, you have a right to know what happened and what we are doing to correct this situation. As required by the Revised Total Coliform Rule, *we failed to conduct the required Level 1 or 2 assessment* within 30 days, and have therefore, violated a requirement of the Revised Total Coliform Rule.

What does this mean?
This is not an emergency. If it had been an emergency, you would have been notified within 24 hours. Failure to conduct an assessment to identify the sanitary defect that triggered the assessment has the potential to cause distribution system contamination. *Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.* Failure to perform the assessment prolonged the risk of fecal contamination of our distribution system water. While we have not detected any evidence of fecal contamination in our distribution system, we are committed to correcting the deficiency to eliminate the potential threat of contamination.

What should I do?

- You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.

- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from their health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791.

You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will announce any emergencies on local channel or Radio Station WEPG (91.0 AM).

What is being done?
We have since completed the Level 1 assessment and identified the cause of the sanitary defect; damage to the storage tank. We are implementing the corrective action plan established by the State. Under this plan, the damage will be repaired and the tank will be disinfected by August 31, 2016.

For more information, please contact Keith Garth, Assistant Manager of South Pittsburg Board of Water Works, at (423) 413-4321 or write to 106 N Elm Avenue South Pittsburg, TN 37380.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail. This notice is being sent to you by Jasper Highlands
State Water System ID# Tn 0002697 Sent: 06/30/16

Example of a Tier 2 PN for Failure to Perform Corrective Action
DRINKING WATER NOTICE
JH Failed to Perform Corrective Action Following an Assessment of the Facility and Distribution System

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the distribution system. We found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that are found. This past summer, we were required to conduct a Level 1 assessment. We completed the required Level 1 assessment and identified the cause of the sanitary defect to be damage to the storage tank. *While we failed to correct the sanitary defect within the required timeframe,* we are implementing the corrective action plan established by the State. As our customers, you have a right to know what happened and what we are doing to correct this situation. As required by the Revised Total Coliform Rule, we failed to complete the corrective action within the required timeframe, and have therefore, violated a requirement of the Revised Total Coliform Rule.

What does this mean?
This is not an emergency. If it had been an emergency, you would have been notified within 24 hours. Failure to correct the identified defect that was found during the assessment has the potential to cause distribution system contamination. *Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.*
What should I do?

- You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from their health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791.

You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will announce any emergencies on local channel or Radio Station WEPG (91.0 AM).

What is being done?
Since being informed of the failure, we have begun to correct the sanitary defect identified during the Level 1 assessment. During the assessment, the sanitary defect was determined to be damage to the storage tank. We are in communication with the State and have modified the corrective action plan's schedule to repair and disinfect the storage tank.

For more information, please contact Keith Garth, Assistant Manager of South Pittsburg Board of Water Works, at (423) 413-4321 or write to 106 N Elm Avenue South Pittsburg, TN 37380.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.
This notice is being sent to you by Jasper Highlands State Water System ID# Tn 0002697
Sent: 06/30/16

Monitoring and Reporting Violations

A Monitoring or Reporting violation occurs when any of the following conditions exist.

- A system fails to collect all routine or additional routine samples
- A system fails to take/analyze for E-coli after a total coliform positive routine.
- A system fails to submit a monitoring report, assessment report or certification of start- up procedure completion.
- A system fails to notify the State of an E.coli positive sample.

Actions to be taken in the event of a Monitoring/ Reporting Violation (A Violation Requiring a Tier 3 Public Notification)

A public water system that has violated the Monitoring and or Reporting requirements must;

- Report the violation to the State no later than the end of the next business day after system learns of the violation.

  Person to Contact: State Inspector at the Chattanooga Field Office
  Telephone: 423-634-5745 or 1-888-891-8332
  - A Tier 3 Public Notice must be provided to customers:

  Tier 3 notices must be issued within 360 days of learning of the violation.
- Refer to the EPA Public Notification Handbook for specific content and delivery requirements. Examples are contained in the next two pages
- Notify the public using this procedure:
  - Furnish a copy of the notice to the customers served by the public water system via mail or other direct delivery as soon as possible, **but no later than 365 days after the violation;**
    - The notice should contain the language shown in the example notices on the next pages;
    - The system may want to describe what is being done to correct the problem:

Example Tier 3 PN for Failure to Take All Routine Total Coliform Samples in the Required Compliance Period

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
Monitoring Requirements Not Met for System D

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During December 2016, we did not complete all monitoring or testing for total coliform, and therefore, cannot be sure of the quality of your drinking water during that time.

On January 11, 2017, we became aware that our water system failed to collect all of the required monthly routine total coliform distribution system samples in December 2016. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation. None of the 12 samples that we did collect was positive for total coliform or *E. coli* bacteria.

What should I do?
There is nothing you need to do. You do not need to boil your water or take other corrective actions. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will also announce any emergencies on local channel and Radio Station WEPG (91.0 AM).

What was done?
We collected all 15 of the required routine total coliform samples in January and tested them for *E. coli.* None of the samples collected in January was positive for *E. coli.*

For more information, please contact Keith Garth, Assistant Manager of South Pittsburg Board of Water Works, at (423) 413-4321 or write to 106 N Elm Avenue South Pittsburg, TN 37380.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Jasper Highlands
State Water System ID# Tn 0002697 Sent: 06/30/16

Example Tier 3 PN for Failure to Notify the State Following an *EC*+ Sample Result

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
Reporting Requirements Not Met for System F

Our system failed to notify the state of an *E. coli*-positive (*EC*+) routine sample by the end of the day that we learned of the violation. The water system has not exceeded the *E. coli* MCL standard set by the Revised Total Coliform Rule. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

What should I do?
There is nothing you need to do. You do not need to boil your water or take other corrective actions. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will also announce any emergencies on local channel and Radio Station WEPG (91.0 AM).

What was done?
We notified the state of the routine monitoring sample that was *EC*+.

For more information, please contact Keith Garth, Assistant Manager of South Pittsburg Board of Water Works, at (423) 413-4321 or write to 106 N Elm Avenue South Pittsburg, TN 37380.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Jasper Highlands
State Water System ID# Tn 0002697 Sent: 06/30/16

Appendix A – ANNUAL CHECKLIST

TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER RESOURCES - DRINKING WATER UNIT
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Ave., 11th Floor
Nashville, TN 37243-1102
615-532-0191

SEASONAL NON-COMMUNITY PUBLIC WATER SYSTEMS

State Approved Start-up Checklist for PWSID # and Name _____

Under the Revised Total Coliform Rule (RTCR), systems that are only opened part of the year or seasonal are required to follow the steps below and submit this form to the regional Environmental Field Office prior to serving water to the public for the season. To locate the Environmental Field Office for your area copy and paste the link below into your browser: http://www.tn.gov/environment/field-offices.shtml

(1.)	**Well Source and Pump House Start-up Shut-down**			
(a.)	Is pump house protected from trespassers (locked and completely secure)	YES	NO	N/A
(b.)	Well casing is structurally sound	YES	NO	N/A
(c.)	Chemicals (i.e. gas, solvents, pesticides) are stored outside isolation radius or at least more than 100 feet from well	YES	NO	N/A
(d.)	Is backup generator stored to capture any leaks in secondary containment area	YES	NO	N/A
(e.)	Well cap is tight with no openings that would allow insect infiltration	YES	NO	N/A
(f.)	Well vent is turned downward and the screen is intact	YES	NO	N/A
(g.)	Rodents and insects are kept out of the pump house and away from the well (keep area mowed)	YES	NO	N/A
(h.)	Sample tap does not leak and flows freely when open	YES	NO	N/A
(i.)	A water meter is working properly and water usage records are maintained	YES	NO	N/A
	COMMENTS:			
(2.)	**Chlorination and Other Treatment (softening, filters, phosphate, etc.)**			
(a.)	Are all treatment systems installed and operating properly	YES	NO	N/A
(b.)	Chlorine is pumping at an adequate dose throughout distribution system including distal ends	YES	NO	N/A
(c.)	The chlorine residual test kit is working, reagents are not expired and is properly calibrated at the beginning of the season.	YES	NO	N/A
(d.)	Chlorinator inspected and declared to be operating properly	YES	NO	N/A
(e.)	The chemical injection point has been cleaned and chemical feed pump is working properly	YES	NO	N/A
(f.)	Unless otherwise approved by the Division, system must ensure measureable disinfectant residual of 0.2 ppm at all distal ends of distribution system	YES	NO	N/A
	COMMENTS:			

(3.)	**Monitoring and Reporting**			
(a.)	All required total coliform bacteria samples were collected prior to serving water to the public with a negative result	YES	NO	N/A
	COMMENTS:			
(4.)	**Storage Tanks**			
(a.)	Flush the interior of the tank	YES	NO	N/A
(b.)	The tank overflow pipe is screened and air gap is maintained above ground	YES	NO	N/A
(c.)	Tank has been visually inspected for damage or repairs	YES	NO	N/A
	COMMENTS:			
(5.)	**Pressure Tanks**			
(a.)	Pressure tank is checked to ensure pressure is being maintained and tank is not waterlogged	YES	NO	N/A
(b.)	All valves, gauges, controls, etc. are properly operating	YES	NO	N/A
(c.)	Pressure tanks thoroughly flushed	YES	NO	N/A
	COMMENTS:			
(6.)	**Distribution Lines**			
(a.)	Lines walked to ensure none are exposed or leaking	YES	NO	N/A
(b.)	Each valve located and are working properly	YES	NO	N/A
(c.)	Flush distribution lines and check chlorine residual at 2 locations on 2 separate days	YES	NO	N/A
(d.)	Ensure RV dump station maintains air gap	YES	NO	N/A
	COMMENTS:			
(7.)	**Additional Comments:**			

*** Note: Remember to update your Wellhead Protection Plan

If you have any questions, contact your local Environmental Field Office at (888) 891-TDEC (8332)

TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER RESOURCES – DRINKING WATER UNIT
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Ave., 11th Floor
Nashville, TN 37243-1102
615-532-0191

REVISED TOTAL COLIFORM RULE LEVEL 1 ASSESSMENT

Water System Name:	
PWSID #:	
Assessment Performed By:	
Date of Assessment:	
	(1.) Sampling
☐ Yes ☐ No If Yes, explain	**(a.) Review total coliform sample results and chlorine residuals for the past three months (six months if sampling quarterly). Are there any trends in bacteria samples or chlorine residuals?**
	(b.)Sampling Guidance
	• The water should be allowed to run for a few minutes to ensure it was from the distribution system and not household plumbing. • The faucet should be disinfected. • The chlorine residual should be taken but not using the bacteria sample bottle. • Care should be taken not to touch the inside of the bottle or lid, not to set the lid down and not rinse the bottle out. Container should not touch faucet. • The water should be flowing in a slow, steady stream. • Container should not be overfilled and should be sealed immediately. • Outdoor faucets, frost-proof faucets should be avoided. • If possible, avoid faucet connected to water heater, pressure tank; hot water faucet, new faucet, swing/swivel faucets, janitor sink faucets or other potentially contaminated faucets.
	(c.) Describe below the sampling technique used for bacteria sampling:
	(d.)Name of Sampler

☐ Yes ☐ No If Yes, explain	(e.) Are conditions at the sample tap unsanitary and prone to external contamination?
☒ Yes ☐ No Explain setting/use of tap	(f.) Has the sample site been in regular use? Would the typical use of the tap be prone to contamination (food preparation, utility sink, etc.)?
	(g.) Describe how the samples were processed:
	I. Samples shipped or delivered? II. Time between sample collection and delivery to lab? III. Samples cooled or ambient temperature? IV. Fresh sample bottles? V. Properly stored sample bottles?
	(h.) If the system has a certified bacteriological lab, review their lab procedures, QA/QC and the cleanliness of the lab. Provide observations below:
	(2.) General – File Review
	(a.) Review last sanitary survey and survey letter for identified problems affecting water quality, particularly repeat issues. Provide observations below:

	(b.) Review Monthly Operating Reports (MORs) for past 6 months paying special attention to chlorine residual leaving plant and turbidity levels. Provide observations below:
	(c.) Review files for filter exceedance reports, filter performance reports, identify filter run times. Provide observations below:
☐ Yes ☐ No If Yes, explain	**(d.) Has there been a loss of service due to a failure of water transmission or distribution facilities?**
☐ Yes ☐ No If Yes, explain	**(e.) Could any operation or maintenance activities have introduced contamination?**
☐ Yes ☐ No If Yes, explain	**(f.) Has there been recent delivery of new treatment chemicals? Were they confirmed to be the correct chemical and strength?**
☐ Yes ☐ No If Yes, explain	**(g.) Has there been vandalism or unauthorized access to facilities identified?**
	(3.)Distribution System
☐ Yes ☐ No	**(a.) Have all issues identified in the last professional tank inspection and sanitary survey been addressed? Describe below:**

☐ Yes ☐ No	(b.) Have there been line replacements, water line breaks or repairs or new construction within the past 3 months? Describe disinfection techniques employed below:
☐ Yes ☐ No	(c.) If the tank or clearwell inspection or repair was within the past 3 months, was proper disinfection employed afterward? When were the tanks last cleaned out? Describe disinfection technique below:
☐ Yes ☐ No	(d.) Is there an ongoing flushing program and when was the last flushing performed? Describe below:
☐ Yes ☐ No If yes, explain	(e.) Are there any areas where it is difficult to maintain chlorine residual without flushing? Explain below:
☐ Yes ☐ No If Yes, explain	(f.) Has there been any firefighting in the area within the past 3 months that would have dropped water pressure or other low pressure events such as line breaks?
	(4.) Cross Connections
☐ Yes ☐ No	(a.) Are backflow prevention devices being tested annually?
☐ Yes ☐ No If Yes, explain	(b.) Are there backflow prevention devices in the vicinity of the total coliform positive site or places that should have backflow prevention devices?

☐ Yes ☐ No	(d.) Within the area of concern, have there been surveys conducted for the detection and elimination of hazards associated with cross-connections? Describe the area (e.g., residential, commercial, sparsely populated rural, etc.) and any known backflow prevention devices and potential risks.
	(5.) Plant Operation/Treatment
☐ Yes ☐ No If No, explain	(a.) Are all of the facilities secure to prevent unauthorized access? Explain below:
☐ Yes ☐ No	(b.) Is the treatment facility operated and manned 24 hours a day? Explain below:
	(c.) If unmanned while in operation, what monitoring/shutdown alarms are in place at the treatment facility (turbidity, chlorine residual, etc.) and are they operational? Describe below:
☐ Yes ☐ No If Yes, explain	(d.) Has there been any unusual filter performance within the past 3 months?
☐ Yes ☐ No If Yes, explain	(e.) Review turbidity records for the past three months. Have there been any turbidity exceedances of more than 1 NTU in either the individual filters or combined?

☐ Yes ☐ No If Yes, explain	**(g.) Have there been any disruptions within the past 3 months that could have affected turbidity or disinfection (chlorine feed or UV disinfection)?**
☐ Yes ☐ No If Yes, explain	
☐ Yes ☐ No If Yes, explain	**(h.) Are there any unsanitary conditions, rodents, birds, general housekeeping problems at any of the facilities?**
☐ Yes ☐ No If Yes, explain	
☐ Yes ☐ No If Yes, explain	**(i.) Were there any observed leaks or other signs of poor maintenance within the facilities? Describe below:**
☐ Yes ☐ No	
☐ Yes ☐ No	**(j.) If leaks or other signs of poor maintenance are present, is the pressure tank maintaining appropriate pressure?** If there is a pressure tank present, is it maintaining appropriate pressure?
☐ Yes ☐ No	**(k.) If the system is using a cartridge filter, is the filter the correct absolute 1 micron cartridge and is it changed according to manufacturer's recommendation? Provide comments below:**
	(6.) Chlorine Residual
☐ Yes ☐ No	**(a.) Has the system been achieving the proper contact time, if required (minimum of 15 minutes)? Indicate below if system is not chlorinating and discuss system's contact time below:**
☐ Yes ☐ No	**(b.) Is there consistent chlorine residual in the water leaving the plant? Describe**

☐Yes ☐No	(c.) Does the unit have the proper UV lamp?
☐Yes ☐No	(d.) Does the lamp need replaced?
☐Yes ☐No	(e.) Is the lamp sleeve clean?
	(8.) Source
☐Yes ☐No If Yes, explain	(a.) Have there been any new or auxiliary sources brought online? Explain below:
	_____ _____ _____ _____
☐Yes ☐No If Yes, explain	If seasonal, were there any problems with the startup procedure? Explain below:
	_____ _____ _____
	(9.) Well/Spring
☐Yes ☐No	(a.) Is Springbox in good condition? Describe Springbox below:
	_____ _____ _____ _____
☐Yes ☐No	(b.) Is Springbox/well head protected from surface water drainage/infiltration? Describe below:
	_____ _____ _____ _____
☐Yes ☐No	(c.) Is well casing above grade/flood zone? Describe setting below:
	_____ _____ _____ _____
☐Yes ☐No	(d.) Is the sanitary seal on the well casing is intact?
☐Yes ☐No	(e.) Is well vent screened?
☐Yes ☐No Yes, explain	(f.) Was there any heavy precipitation or flooding within the 30 days prior to the coliform positive event? Describe below:
Yes No	

☐ Yes ☐ No **If Yes, explain**	**(b.) Is the intake or equipment in need of repair?**
☐ Yes ☐ No If Yes, explain	**(c.) Was there any heavy precipitation or flooding within the 30 days prior to the total coliform positive event?** ~~Describe below:~~
☐ Yes ☐ No **If Yes, explain**	**(d.) Have there been any changes in sources of potential contamination in proximity of the water source?**
	(II.) Assessment Statement and Proposed Remedy

Attach additional sheets if necessary

Certification Statement

I certify, under penalty of law, including but not limited to penalties for perjury, that this document and all attachments were prepared by me, or under my direction or supervision; that all of the submitted information is to the best of my knowledge and belief true, accurate, and complete; and that I am lawfully present in the United States as a U.S. citizen or a qualified alien as defined in 8 U.S.C. §1641(b). As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury. I understand that the penalties for providing false information and making false or fraudulent statements or representations include revocation in a fine, permit or license, civil penalties, and/or criminal prosecution resulting in a fine, imprisonment or both.

Signature **Date**

Request Number 22

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
CHATTANOOGA ENVIRONMENTAL FIELD OFFICE
1301 RIVERFRONT PARKWAY, SUITE 206
CHATTANOOGA, TENNESSEE 37402
PHONE (423) 634-5745 STATEWIDE 1-888-891-8332 FAX (423) 634-6389

June 22, 2018

Mr. John Thornton, Owner
Thunder Enterprises
P. O. Box 4737
Chattanooga, TN 37405

Re: **Sanitary Survey of Community Water System**
Jasper Highlands Water System
P.W.S.I.D. No. 0008286
Marion County, Tennessee

Dear Mr. Thornton:

We would like to thank the staff of Jasper Highlands Water System for their assistance and cooperation in conducting the sanitary survey on June 19, 2018. Mohammed Faleh and Amy Francis conducted the survey with the assistance of Clarence Howard. The survey consisted of records review to document the operational performance and an on-site inspection of the water distribution system. The survey covered the time period from April 2017, to April 2018. In accordance with the Sanitary Survey Manual for Community Public Water Supplies, Jasper Highlands Water System earned 421 points out of a possible 421 points for a numerical rating of one hundred percent **(100%).** With this score, the system will remain among Tennessee's **"Approved"** public water supplies. A copy of the rating form is attached.

The following deficiencies, comments, and/or recommendations correspond with the attached rating form and should be addressed as applicable:

1. **Section 1: System Management and Operation**
   - **Subsection A. Record Keeping**

     The system has good record keeping. All necessary records were available and well organized. This effort should be continued as paperwork is added to the files.

General Observations, Comments, and Other Recommendations

1. **Emergency Operation Plan**

   The Emergency Operation Plan needs to be kept up-to-date for it to be effective in an emergency. It should be reviewed periodically and updated as needed since your water system is still changing rapidly.

2. **Disinfection By-Product Monitoring**

   The current Disinfection By-Product monitoring site is 302 River Bluffs Drive. As the distribution system continues to grow, this site location may need to be adjusted, so that it represents the end of your distribution system. Your current Disinfection By-Products Plan states that samples will be collected during the second week of July. This will need to be modified so that sampling is done in conjunction with South Pittsburg Water System. They will be collecting samples during the **first week of July 2018**.

3. **Chlorine Residual**

   The chlorine residual was measured at 1.07 mg/L during the survey, which is satisfactory.

4. **Bacteriological Sampling**

   The required bacteriological sampling rate for the Jasper Highlands Water System will remain at one sample per month based on 90 connections serving an estimated population of 223 people.

Again, we thank the Jasper Highlands water system personnel for their assistance and courtesy during our visit. If you have any questions or need additional information, please contact Mohammed Faleh, Amy Francis, or me at this office. Our telephone number is (423) 634-5745.

Sincerely,

Gary K. Burriss

Gary K. Burriss
Chattanooga Environmental Field Office
Division of Water Resources

Enclosure

cc: Freda Crutchfield, Division of Water Resources, Nashville Central Office
Keith Garth, Certified Operator, Jasper Highlands Water System
→ Clarence Howard, Sr., VP of Construction, Jasper Highlands Water System
Mohammed Faleh, Chattanooga Environmental Field Office
Amy Francis, Chattanooga Environmental Field Office

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
CHATTANOOGA ENVIRONMENTAL FIELD OFFICE
1301 RIVERFRONT PARKWAY, SUITE 206
CHATTANOOGA, TENNESSEE 37402

Jasper Highlands Water System
Drinking Water Monitoring Program
June 2018

The following should be reported on the Monthly Operation Report:

1. Free chlorine residual - daily
2. Daily amount of water purchased from South Pittsburg Water System
3. Date and location of bacteriological samples with chlorine residual
4. Any unusual occurrences in the "Remarks" section

PWSID:	0008286	Water System Name:	Jasper Highlands Water System
Survey Date:	Jun 19, 2018	System Category (Points):	421

421 - Consecutive Systems/Distribution Only
488 - Treatment Systems/Wholesalers
599 - Both Treatment and Distribution

System Management and Operation (94)

Requirement	Points Range	Deduction	Comments
A. Record Keeping 0400-45-01-.20	(0)	Narrative	Good Record Keeping.
B. Construction Projects 0400-45-01-.05, 0400-45-01-.17	(1-5)	0	
C. Submission of Monthly Operations Reports 0400-45-01-.17	(0)	Narrative	
D. Reporting Requirements 0400-45-01-.18	(4-30)	0	
E. Public Notification 0400-45-01-.19	(3-10)	0	
F. Facility Maintenance Fee	(0)	Narrative	
G. Enforcement – TCA §68-221-701 et seq.	(4-10)	0	
H. Emergency Operations Plan 0400-45-01-.17	(3)		Needs to be updated.
	Deficiency Subtotal	0	

2. Operator Compliance (23)

Requirement	Points Range	Deduction	Comments
A. Certified Operator – Plant and Distribution System 0400-45-01-.17(1) and 0400-49-01-.04	(3-15)	0	Keith Garth Ds1
	Deficiency Subtotal	0	

3. Source (25)

Requirement	Points Range	Deduction	Comments
A. Source Adequacy 0400-45-01-.02, .05, .16, .17(13) and .34(3)	(3-5)	0	Purchased / South Pittsburg W.S
B. Intake 0400-45-01-.05, .17	(2)	0	N/A
C. Wellhead/Springbox Construction 0400-45-01-.05(12), .16 and .17(3) and (16)	(2)	0	N/A
D. Source Protection Plans 0400-45-01-.34	(1-2)	0	N/A
	Deficiency Subtotal	0	

Requirement	Points Range	Deduction	Comments
A. Aerator 0400-45-01-.05, .17	(2)	0	N/A
B. Chemicals/Chemical Feeders 0400-45-01-.05(8), and .17, .36	(2)	0	N/A
C. Mixing 0400-45-01-.02, .05, .17	(2)	0	N/A
D. Flocculation 0400-45-01-.02, .05, .17	(2)	0	N/A
E. Sedimentation 0400-45-01-.02, .05, .17	(2)	0	N/A
F. Filtration/Alternative Technology 0400-45-01-.17(12) and (27)	(2-30)	0	N/A
G. Re-wash/Filter-to-waste 0400-45-01-.17 (35)	(2)	0	N/A
H. Turbidimeters/Calibration 0400-45-01-.05 (11).17, .31, .39	(2-4)	0	N/A
I. Disinfection 0400-45-01-.02, .17, .31, .36	(2-30)	0	N/A
J. Disinfection Contact Time 0400-45-01-.02, .17, .31	(2-4)	0	N/A
K. Master Meter 0400-45-01-.17 (2) and (3)	(1-2)	0	N/A
L. Maintenance of Equipment, Buildings and Grounds 0400-45-01-.02, .17(3), (17) and (19)	(1)	0	N/A
M. Laboratory Facilities 0400-45-01-.02, .14, .17(3)	(1-3)	0	N/A
N. Safety 0400-45-01-.02	(2)	0	N/A
O. Sludge Handling/Backwash Handling 0400-45-1-.05	(2)	0	N/A
P. Sanitary Conditions 0400-45-01-.17 (17)	(2)	0	N/A
Q. Fluoridation Techniques 0400-45-01-.06, .12, .17	(2)	0	N/A
R. Design Capacity 0400-45-01-.05 (10)	(2-4)	0	N/A
S. Filter Backwash Recycling 0400-45-01-.31 (9)	(1)	0	N/A
	Deficiency Subtotal	0	

Requirement	Points Range	Deduction	Comments
A. Laboratory-Process Monitoring (excluding Turbidity and Chlorine Residual) 0400-45-01-.17(3)	(5)	0	
B. Bacteriological Monitoring	(2-6)	0	
C. Bacteriological Compliance 0400-45-01-.06	(4-7)	0	
D. Turbidity Monitoring	(2-3)	0	N/A
E. Turbidity Compliance	(4-7)	0	N/A
F. Chorine Residual Monitoring 0400-45-01-.17, .31, .36	(2-3)	0	
G. Primary Chemicals Monitoring	(2-3)	0	
H. Primary Chemicals Compliance	(4)	0	
I. Lead and Copper Monitoring 0400-45-01-.33	(2-3)	0	
J. Lead and Copper Action Level 0400-45-01-.33	(3-5)	0	
K. Disinfection/Disinfection By-Products and Precursors Monitoring 0400-45-01-.36, .37, .38	(2-3)	0	
L. Disinfection/Disinfection By-Products and Precursors Compliance 0400-45-01-.06, .36	(2-30)	0	
M. Secondary Chemicals 0400-45-01-.12	(2)	0	
N. Secondary Chemicals Compliance 0400-45- 01-.12	(3)	0	
O. Cryptosporidium Monitoring 0400-45-01-.39	(0)	Narrative	
	Deficiency Subtotal	0	

6. Finished Water Storage (25)

Requirement	Points Range	Deduction	Comments
A. Adequate Storage 0400-45-01-.17 (14)	(2-4)	0	
B. Inspection and Maintenance of Reservoirs, Tanks and Clearwell 0400-45-01-.17 (16), (17), (33) and (34)	(1-10)	0	
	Deficiency Subtotal	0	

Requirement	Points Range	Deduction	Comments
A. Pump Facilities 0400-45-01-.17 (9) and (13)	(1-4)	0	
B. Maintenance of Pumping Equipment 0400-45-01-.17(13)	(1-3)	0	
	Deficiency Subtotal	0	

8. Distribution System and Cross Connection Controls (86)

Requirement	Points Range	Deduction	Comments
A. Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities 0400-45-01-.17 (8) and (19)	(3-5)	0	
B. Flushing Program/Blow Offs 0400-45-01-.17(10) and (23)	(3-4)	0	
C. Fire Hydrants 0400-45-01-.17 (18)	(0)	Narrative	
D. Adequate Pressure 0400-45-01-.17 (9)	(5)	0	
E. Map of Distribution System 0400-45-01-.17 (15)	(3)	0	
F. Approved Cross Connection Policy or Ordinance and Plan 0400-45-01-.17 (6)	(4)	0	
G. Working Cross Connection Program 0400-45-01-.17(6)	(3-9)	0	
H. Unaccounted Water Loss	(0)	Narrative	
	Deficiency Subtotal	0	

Total Deficiency Points:	0
Points Available:	421
Overall Rating:	100

Points Available
421 - Consecutive Systems/Distribution Only
488 - Treatment Systems/Wholesalers
599 - Both Treatment and Distribution

Inspector: Mohammed H. Faleh, Amy Francis

Additional Comments/Explanations:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
CHATTANOOGA ENVIRONMENTAL FIELD OFFICE
1301 RIVERFRONT PARKWAY, SUITE 206
CHATTANOOGA, TENNESSEE 37402
PHONE (423) 634-5745 STATEWIDE 1-888-891-8332 FAX (423) 634-6389

June 12, 2017

Mr. John Thornton, Owner
Thunder Enterprises
P. O. Box 4737
Chattanooga, TN 37405

Re: **Sanitary Survey of Community Water System**
Jasper Highlands Water System
P.W.S.I.D. No. 0008286
Marion County, Tennessee

Dear Mr. Thornton:

We would like to thank the staff of Jasper Highlands Water System for their assistance and cooperation in conducting the sanitary survey on June 7, 2017. Mohammed Faleh and Amy Francis conducted the survey with the assistance of Clarence Howard, Brian Smith and Keith Garth. The survey consisted of records review to document the operational performance and an on-site inspection of the water distribution system. The survey covered the time period from April 2016, to April 2017. In accordance with the Sanitary Survey Manual for Community Public Water Supplies, Jasper Highlands Water System earned 418 points out of a possible 421 points for a numerical rating of ninety-nine percent **(99%).** With this score, the system will remain among Tennessee's **"Approved"** public water supplies. A copy of the rating form is attached.

The following deficiencies, comments, and/or recommendations correspond with the attached rating form and should be addressed as applicable:

1. **Section 1: System Management and Operation**
   - **Subsection A. Record Keeping**

     The system has good record keeping. All necessary records were available and well organized.

   - **Subsection B. Construction Projects**

     The system failed to notify our department of start construction notification for the 269,000 gallon water storage tank. The system needs to notify our office of any major construction projects within the water system as new phases are added.

2. **Section 8: Distribution and Cross Connection Controls**

Subsection G. Working Cross Connection Program

More work is needed on the system's cross connection program in accordance with Rule 400-45-01-.17(6). Special attention should be given to keeping cross connection records maintained in an orderly manner. A few backflow prevention devices have not been tested since the last sanitary survey. Those devices need to be tested as soon as possible.

General Observations, Comments, and Other Recommendations

1. **Storage Tank**

The system needs to work out a schedule with South Pittsburg Water System for filling the new storage tank, especially if it occurs during the summer months. Unplanned high usage could cause an unnecessary strain on the South Pittsburg distribution system.

2. **Disinfection By-Product Monitoring**

A site needs to be selected for the Disinfection By-Product monitoring, which should be done in conjunction with South Pittsburg Water System during the **first week of July 2017**. The dead ends of the distribution system should be considered in the selection of the site. A future sampling schedule will be determined based on the results of this sample. As the distribution system grows, this site location may need to be adjusted.

3. **Chlorine Residual**

The chlorine residual was measured at 0.95 mg/L during the survey, which is satisfactory.

4. **Bacteriological Sampling**

The required bacteriological sampling rate for the Jasper Highlands Water System will remain at one sample per month based on 31 connections serving an estimated population of 77 people.

Again, we thank the Jasper Highlands water system personnel for their assistance and courtesy during our visit. If you have any questions or need additional information, please contact Mohammed Faleh, Amy Francis, or me at this office. Our telephone number is (423) 634-5745.

Sincerely,

Gary K. Burriss
Chattanooga Environmental Field Office
Division of Water Resources

Enclosure

cc: Freda Crutchfield, Division of Water Resources, Nashville Central Office
Keith Garth, Certified Operator, Jasper Highlands Water System
Clarence Howard, Sr., VP of Construction, Jasper Highlands Water System
Brian Smith, Operator, Jasper Highlands Water System
Amy Francis, Chattanooga Environmental Field Office

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
Chattanooga Environmental Field Office
1301 Riverfront Parkway, Suite 206
Chattanooga, Tennessee 37402

Jasper Highlands Water System
Drinking Water Monitoring Program
June 2017

The following should be reported on the Monthly Operation Report

1. Free chlorine residual - daily
2. Daily amount of water purchased from South Pittsburg Water System
3. Date and location of bacteriological samples with chlorine residual
4. Any unusual occurrences in the "Remarks" section

Sanitary Survey Rating

PWSID: 0008286 Water System Name: Jasper Highlands Water System

Survey Date: Jun 7, 2017 System Category (Points): 421

421 - Consecutive Systems/Distribution Only
488 - Treatment Systems/Wholesalers
599 - Both Treatment and Distribution

1. System Management and Operation (94)

Requirement	Points Range	Deduction	Comments
A. Record Keeping 0400-45-01-.20	(0)	Narrative	Good Record Keeping.
B. Construction Projects 0400-45-01-.05, 0400-45-01-.17	(1-5)	0	Fails to notify DWR prior to construction.
C. Submission of Monthly Operations Reports 0400-45-01-.17	(0)	Narrative	
D. Reporting Requirements 0400-45-01-.18	(4-30)	0	
E. Public Notification 0400-45-01-.19	(3-10)	0	
F. Facility Maintenance Fee	(0)	Narrative	
G. Enforcement – TCA §68-221-701 et seq.	(4-10)	0	
H. Emergency Operations Plan 0400-45-01-.17	(3)		Updated on July 27 , 2016.
	Deficiency Subtotal	0	

Operator Compliance (23)

Requirement	Points Range	Deduction	Comments
A. Certified Operator – Plant and Distribution System 0400-45-01-.17(1) and 0400-49-01-.04	(3-15)	0	Keith Garth Ds1
	Deficiency Subtotal	0	

3. Source (25)

Requirement	Points Range	Deduction	Comments
A. Source Adequacy 0400-45-01-.02, .05, .16, .17(13) and .34(3)	(3-5)	0	Purchased / South Pittsburg W.S
B. Intake 0400-45-01-.05, .17	(2)	0	N/A
C. Wellhead/Springbox Construction 0400-45-01-.05(12), .16 and .17(3) and (16)	(2)	0	N/A
D. Source Protection Plans 0400-45-01-.34	(1-2)	0	N/A
	Deficiency Subtotal	0	

4. Treatment (153)

Requirement	Points Range	Deduction	Comments
A. Aerator 0400-45-01-.05, .17	(2)	0	N/A
B. Chemicals/Chemical Feeders 0400-45-01-.05(8), and .17, .36	(2)	0	N/A
C. Mixing 0400-45-01-.02, .05, .17	(2)	0	N/A
D. Flocculation 0400-45-01-.02, .05, .17	(2)	0	N/A
E. Sedimentation 0400-45-01-.02, .05, .17	(2)	0	N/A
F. Filtration/Alternative Technology 0400-45-01-.17(12) and (27)	(2-30)	0	N/A
G. Re-wash/Filter-to-waste 0400-45-01-.17 (35)	(2)	0	N/A
H. Turbidimeters/Calibration 0400-45-01-.05 (11).17, .31, .39	(2-4)	0	N/A
I. Disinfection 0400-45-01-.02, .17, .31, .36	(2-30)	0	N/A
J. Disinfection Contact Time 0400-45-01-.02, .17, .31	(2-4)	0	N/A
K. Master Meter 0400-45-01-.17 (2) and (3)	(1-2)	0	N/A
L. Maintenance of Equipment, Buildings and Grounds 0400-45-01-.02, .17(3), (17) and (19)	(1)	0	N/A
M. Laboratory Facilities 0400-45-01-.02, .14, .17(3)	(1-3)	0	N/A
N. Safety 0400-45-01-.02	(2)	0	N/A
O. Sludge Handling/Backwash Handling 0400-45-1-.05	(2)	0	N/A
P. Sanitary Conditions 0400-45-01-.17 (17)	(2)	0	N/A
Q. Fluoridation Techniques 0400-45-01-.06, .12, .17	(2)	0	N/A
R. Design Capacity 0400-45-01-.05 (10)	(2-4)	0	N/A
S. Filter Backwash Recycling 0400-45-01-.31 (9)	(1)	0	N/A
	Deficiency Subtotal	0	

5. Monitoring, Data Verification and Compliance (175)

Requirement	Points Range	Deduction	Comments
A. Laboratory-Process Monitoring (excluding Turbidity and Chlorine Residual) 0400-45-01-.17(3)	(5)	0	
B. Bacteriological Monitoring	(2-6)	0	
C. Bacteriological Compliance 0400-45-01-.06	(4-7)	0	
D. Turbidity Monitoring	(2-3)	0	N/A
E. Turbidity Compliance	(4-7)	0	N/A
F. Chorine Residual Monitoring 0400-45-01-.17, .31, .36	(2-3)	0	
G. Primary Chemicals Monitoring	(2-3)	0	
H. Primary Chemicals Compliance	(4)	0	
I. Lead and Copper Monitoring 0400-45-01-.33	(2-3)	0	
J. Lead and Copper Action Level 0400-45-01-.33	(3-5)	0	
K. Disinfection/Disinfection By-Products and Precursors Monitoring 0400-45-01-.36, .37, .38	(2-3)	0	
L. Disinfection/Disinfection By-Products and Precursors Compliance 0400-45-01-.06, .36	(2-30)	0	
M. Secondary Chemicals 0400-45-01-.12	(2)	0	
N. Secondary Chemicals Compliance 0400-45- 01-.12	(3)	0	
Cryptosporidium Monitoring 0400-45-01-.39	(0)	Narrative	
	Deficiency Subtotal	0	

6. Finished Water Storage (25)

Requirement	Points Range	Deduction	Comments
A. Adequate Storage 0400-45-01-.17 (14)	(2-4)	0	
B. Inspection and Maintenance of Reservoirs, Tanks and Clearwell 0400-45-01-.17 (16), (17), (33) and (34)	(1-10)	0	
	Deficiency Subtotal	0	

7. Pumps, Pump Facilities and Controls (18)

Requirement	Points Range	Deduction	Comments
A. Pump Facilities 0400-45-01-.17 (9) and (13)	(1-4)	0	
Maintenance of Pumping Equipment 0400-45-01-.17(13)	(1-3)	0	
	Deficiency Subtotal	0	

8. Distribution System and Cross Connection Controls (86)

Requirement	Points Range	Deduction	Comments
A. Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities 0400-45-01-.17 (8) and (19)	(3-5)	0	
B. Flushing Program/Blow Offs 0400-45-01-.17(10) and (23)	(3-4)	0	
C. Fire Hydrants 0400-45-01-.17 (18)	(0)	Narrative	
D. Adequate Pressure 0400-45-01-.17 (9)	(5)	0	
E. Map of Distribution System 0400-45-01-.17 (15)	(3)	0	
F. Approved Cross Connection Policy or Ordinance and Plan 0400-45-01-.17 (6)	(4)	0	
G. Working Cross Connection Program 0400-45-01-.17(6)	(3-9)	3	More Work is needed on C.C. Program.
Unaccounted Water Loss	(0)	Narrative	
	Deficiency Subtotal	3	

Total Deficiency Points:	3
Points Available:	421
Overall Rating:	99

Points Available
421 - Consecutive Systems/Distribution Only
488 - Treatment Systems/Wholesalers
599 - Both Treatment and Distribution

Inspector: Mohammed H. Faleh, Amy Francis

Additional Comments/Explanations:

Request Numbers 24 and 25

Response to Question 24

The water rates established September 1, 2016 for Jasper Highlands Water System are as follows:

a. **Minimum (2,500 gallons) $2.70/100, $67.50**
b. **Next 2,500 gallons $1.70/100**
c. **Next 2,500 gallons $1.51/100**
d. **Use over 7,500 gallons $1.35/100**
e. **Plus applicable sales tax**

These rates were determined based on expected growth of the Jasper Highlands community and to cover the direct costs of operating the system plus, build a modest reserve for system repairs. Please refer to financial data of the system provided in response to other questions.

As the Jasper Highlands community continues to grow the Operator evaluates the adequacy of water rates. Thus far, operations have not dictated any change in rates charged customers.

Response to Question 25

Jasper Highlands Water System has no employees or staff of its own. The operations of the system are contracted to the developer of Jasper Highlands, Thunder Air, Inc., herein referred to as "contractor".

Contractor has full time employees trained to attend to daily monitoring of the water system and maintenance of required documentation. The system has consistently received high marks from regulators and, in fact, was awarded a 100% rating in its last evaluation by the State of Tennessee Department of Environment and Conservation in June 2018.

Contractor has full time employees trained and qualified in accounting and office functions to facilitate timely billing and collections for the water system.