STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Columbia Environmental Field Office
1421 Hampshire Pike
Columbia, TN 38401
1-888-891-8332

October 26, 2021

Honorable Michael Gillespie
Mayor of Decherd
PO Box 488
Decherd, TN 37324

Certified Mail
Return Receipt Requested:
9489 0090 0027 6315 6286 14

Re: Sanitary Survey and Notice of Violation– Community Water System
Decherd Water Department
PWSID #0000187
Franklin County

Dear Mayor Gillespie:

On September 16, 20, and 23, 2021, personnel from the Division of Water Resources (DWR) visited the Decherd Water Department and initiated a Sanitary Survey. The survey consisted of a records review to document the operational performance of the system and an on-site inspection of the water treatment and distribution system. The survey covered the time period from October 2019 – September 16, 2021. The Division would like to thank the Decherd Water Department personnel for their assistance during this survey. In accordance with the Sanitary Survey Manual the Decherd Water System earned 563 points out of a possible 599 points for a numerical score of ninety-three percent **(93%)**. This rating places the Decherd Water Department in the State's "**Provisionally Approved**" category.

The Division's Sanitary Survey Manual requires significant deficiencies and redundant survey issues identified in the sanitary survey guidance material to be addressed with the initiation of enforcement action. The issues identified as **item number 2, Section 3, Subsection C. Wellhead/Springbox Construction** and **item number 4, Section 6, Subsection B. Inspection and Maintenance of Reservoirs, Tanks and Clearwell** are significant deficiencies. The issue identified as **item number 3, Section 4, Subsection H. Turbidimeters / Calibration** is a recurring non-compliance issue documented in the 2019 and 2021 sanitary survey letters.

Due to the significant deficiencies, redundant survey issue and voluntary noncompliance identified in item 5, Section 8, Subsections A and B, a Compliance Review Meeting has been scheduled for 10:00 AM Friday, November 12, 2021. The purpose of this meeting is to discuss the deficiencies noted during the sanitary survey and the corrective action steps needed to return the system to compliance. Due to the COVID-19 pandemic, the meeting will be held via conference call or virtual platform. An invitation with the call-in number or virtual meeting link will be sent via email. You, in your capacity as the Mayor, or your representative with the authority to enter into a binding agreement, should plan to attend this meeting. If for some reason you are unable to attend the scheduled Compliance Review Meeting, please contact this office so that a mutually agreeable date/time can be arranged.

The system must respond in writing within 30 days of receipt of this letter stating how and on what time schedule the system will address the significant deficiencies noted in items 2 and 4; however, the system should address all issues of noncompliance itemized within this letter.

The following deficiencies, comments, and/or recommendations as outlined in the attached Sanitary Survey Rating Form were identified during the survey and should be addressed as applicable:

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

     It is recommended that bacteriological sample test results be attached to the corresponding paperwork for new line construction, line repairs, tank inspections, etc. for easy retrieval during sanitary surveys.

   - **Subsection H. Emergency Operations Plan**

     Division Rule 0400-45-01-.17(7) requires all community water systems to prepare and maintain an Emergency Operations Plan (EOP). The EOP is required to be reviewed and updated every three (3) years. Please submit an updated EOP to the Columbia Environmental Field Office for review and approval by November 15, 2021. The plan may be submitted by e-mail to lane.smith@tn.gov.

2. **Section 3: Source**
   - **Subsection C. Wellhead/Springbox Construction**

     Wells and springs must be protected against surface contamination from hazardous and/or toxic substances. The ground surface around Well #3 has caved to a depth of approximately 3 feet and a diameter of approximately 6 feet and is allowing surface water to flow in and around the casing, possibly infiltrating the source.

Well #4 remains shut down due to a possible collapse inside the casing or screen. The collapse occurred when the pump was pulled for repairs. The blockage was encountered when the system tried to reinstall the pump.

The system must secure the services of a licensed well driller and/or engineer to inspect both wells and submit a report to the Division by November 30, 2021, stating how and on what time schedule the repairs will be addressed.

Subsection D. Source Protection Plans

Wellhead Protection Plans must be updated every 3 years with new pictures. The system's last plan was approved July 6, 2018, and is past due. The system must update and submit the Wellhead Protection Plan to the Division by November 15, 2021.

3. **Section 4: Treatment**
   - **Subsection H. Turbidimeters / Calibration**

Benchtop and inline turbidimeters are to be calibrated every three months (90 days) as required by Rule 0400-45-01-.17(40). The turbidimeters were not calibrated as required during the first and third quarters of 2021. This redundant issue was noted in the 2017, 2019, and 2021 sanitary survey letters.

   - **Subsection L. Maintenance of Equipment, Buildings and Grounds**

The chlorine injection point for Filter #3 is leaking and needs to be repaired. The flow adjustment valve handle for the in-line turbidimeter on Filter #1 is broken and needs to be replaced.

Due to extensive sweating in the summer months caused by the cold well water, numerous areas around the plant have extensive rust, corrosion, and blistering along the leading edges of metal surfaces. The system continually cleans and paints areas needing attention as conditions allow. A dehumidifier may help lower humidity levels and possibly slow some of the corrosion. The system should continue addressing these areas as time and conditions allow.

   - **Subsection N. Safety**

The exhaust fan in the chlorine room is broken and must be repaired or replaced as soon as possible. This is a significant hazard to system personnel.

4. **Section 6: Finished Water Storage**
   - **Subsection B. Inspection and Maintenance of Reservoirs, Tanks and Clearwell**

During the survey the most recent tank and clearwell inspection reports were reviewed. The vent screens on both outside clearwells are rusted out and need to be replaced with Number 24 mesh screen. In order to prolong the life of the screen, the Division recommends the use of stainless steel for all vent screens. Brush and vines have grown up on much of the fence surrounding the Nursery Tank. The Nissan Tank has a tree/brush near the overflow that needs to be removed. The fencing must be cleared and the clearwell vent screens replaced by November 30, 2021. Please provide photographs of the completed maintenance to lane.smith@tn.gov.

Rule 0400-45-01-.17(33) requires a professional inspection be performed and a written report be produced on finished water and distribution storage tanks at least once every 5 years. The Little Mountain Tank was last inspected February 19, 2016, and is now past due for its professional tank inspection. The system must make arrangements to have the tank professionally inspected. In accordance with Rule 0400-45-01-.17(8)(a), AWWA standard C-652 must be followed when tanks are taken out of service for inspection and bacteriological samples must be collected prior to tanks being returned to service.

The 2016 professional tank inspection report for the Little Mountain Tank states areas of moderate rust and staining are present on the interior of the tank and estimated five years of protection remaining. The system should make plans to have the tank painted before the coating fails completely.

5. **Section 8: Distribution System and Cross Connection Controls**
   - **Subsection A. Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities**

All line repair, new line construction, and tank inspection records must clearly document that disinfection and sampling requirements were met, in accordance with Rule 0400-45-04-.17(8).

The system completed one new construction project since the last sanitary survey. Project #21-0320 (previously 18-1200) consisted of 2,045 feet of 2-inch water line. Bacteriological samples should have been collected by one of the two following methods:

- Collecting two sets of microbiological samples 24 hours apart *or*
- Collecting a single set of microbiological samples 48 hours or longer after flushing the highly chlorinated water from the lines.

In either case microbiological samples in each set are required to be collected near the beginning point and end point.

The system collected only one bacteriological sample at the end of the line on Project #21-0320 , and there were no disinfection/flushing records for review. System staff stated a decision was made to not collect a sample near the beginning of the new line due to the expense of making a tap to collect the additional sample.

The 1 million gallon Nissan Tank was inspected December 2, 2019. The system failed to maintain written disinfection procedures for the robot and failed to collect a bacteriological sample on the tank.

- **Subsection B. Flushing Program/Blow Offs**

Rule 0400-45-01-.17(10) requires all community water systems having more than 50 service connections establish and maintain an adequate flushing program. There were no flushing records available for review during the survey. Decherd Water Department staff reported being instructed by management to discontinue flushing. Management reported this was because water was being purchased from Winchester. The lack of flushing records presents an inability to establish compliance with Rule 0400-45-01.17(4), requiring a free chlorine residual of not less than 0.2mg/L in all parts of the distribution system.

Subsection E. Map of Distribution System

Distribution Maps must be updated every 5 years and a copy submitted to the Division. The system's next updated map will be due in 2023. It is preferred the map be of electronic format and e-mailed to the Division.

- **Subsection G. Working Cross Connection Program**

Cross connection records and the Cross-Connection Manual were reviewed during the survey. All known backflow devices are currently up to date on testing. However, the system has not been conducting surveys of new and existing residential customers (Section III B. of the Cross Connection Control Plan). The Division recommends water system personnel read and familiarize itself with the requirements of its Cross-Connection Control Plan.

General Observations, Comments, and Other Recommendations

1. In accordance with Rule 0400-45-01-.14(1)(a), State approval for the analysis of turbidity, free chlorine residual, pH, alkalinity, and temperature is hereby granted to Mr. Dewayne Benson and Mr. Tom Summers. This approval is effective until the next sanitary survey

and is contingent upon use of approved methodologies and proper operation of the analysis equipment.

2. The Decherd Water Department has 1,843 connections serving an estimated population of 4,580. The number of required bacteriological samples taken from the distribution system remains five (5) per month.

3. The updated Monitoring Program for the system in accordance with Rule 0400-45-01-.17(3) is enclosed.

Again, I would like to thank all the Decherd Water Department personnel for their assistance during the survey. If you have questions or need additional assistance, please contact Lane Smith at (931) 981-8059 or lane.smith@tn.gov or me at (931) 444-9187 or sherry.glass@tn.gov.

Sincerely,

Sherry R. Glass

Sherry R. Glass, Environmental Manager
Division of Water Resources
Columbia Environmental Field Office

cc: Nashville Central Office
Eric Bradford, Water Superintendent
Tom Summers, Certified Operator

Sanitary Survey Rating

PWSID: TN0000187 **Water System Name:** Dechard Water System

Survey Date: 16-Sep-21 **System Category (Points):** 421 488 599

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	Attach copies of coordinating BacTs with line repairs, tank inspections,new lines, etc.
B.	Construction Projects 0400-45-01-.05, 0400-45-01-.17	(1-5)	0	OK
C.	Submission of Monthly Operations Reports 0400-45-01-.17	(0)	Narrative	OK
D.	Reporting Requirements 0400-45-01-18	(4-30)	0	OK
E.	Public Notification 0400-45-01-.19	(3-10)	0	OK
F	Facility Maintenance Fee	(0)	Narrative	OK
G.	Enforcement - TCA §68-221-701 et seq	(4-10)	0	
H	Emergency Operations Plan 0400-45-01-.17	(3)	0	Update and submit EOP by 11/15/21.
	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	Eric Bradford: DS-2 Tom Summers: WT-3/DS-2 Owen Benson: WT-4
	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	OK
B.	Intake 0400-45-01-.05, .17	(2)	0	OK
C.	Wellhead/Springbox Construction 0400-45- 01-.05(12),16 and 17(3) and (16)	(2)	2	A 6' diameter surface area around Well #3 has collapsed approximately 3' in depth.
D.	Source Protection Plans 0400-45-01-.34	(1-2)	1	Update and submit Wellhead Protection Plan by 11/15/21.
	Deficiency Subtotal		3	

4. Treatment (153)

	Requirement	Points Range	Deduction	Comments
A.	Aerator 0400-45-01-.05, .17	(2)	0	OK
B.	Chemicals / Chemical Feeders 0400-45-01- .05 (8) and .17,36	(2)	0	OK
C.	Mixing 0400-45-01-.02, .05, .17	(2)	0	OK
D.	Flocculation 0400-45-01-.02, .05, .17	(2)	0	OK
E.	Sedimentation 0400-45-01-.02, .05, .17	(2)	0	OK
F.	Filtration / Alternative Technology 0400-45- 01-.17(12) and (27)	(2-30)	0	OK
G.	Re-Wash / Filter-to-Waste 0400-45-01- .17(35)	(2)	0	OK
H.	Turbidimeters / Calibration 0400-45-01- .05(11), .17, .31, .39	(2-4)	2	Failure to calibrate Turbidimeters every 90 days/quarterly. 10/15/20-2/18/21 and 4/21/21-9/7/21.
I.	Disinfection/Calibration 0400-45-01-.02, .17, .31, .36	(2-30)	0	OK
J.	Disinfection Contact Time 0400-45-01-.02, .17,31	(2-4)	0	OK
K.	Master Meter 0400-45-01.17(2) and (3)	(1-2)	0	OK
L.	Maintenance of Equipment, Buildings and Grounds 0400-45-01-.02, .17(3), (17) and (19)	(1)	1	Cl injection point on Filter #3 leaking. Filter #1 turb adjustment broken, Continue rust removal and painting as necessary on filter basins/piping(sweating)
M.	Laboratory Facilities 0400-45-01-.02, .14, .17(3)	(1-3)	0	OK
N.	Safety 0400-45-01-.02	(2)	2	Cl Room fan broken.
O.	Sludge Handling/Backwash Handling 0400- 45-01-.05	(2)	0	OK
P.	Sanitary Conditions 0400-45-01-.17(17)	(2)	0	OK
Q	Fluoridation Techniques 0400-45-01-.06, .12, .17	(2)	0	OK
R.	Design Capacity 0400-45-01-.05(10)	(2-4)	0	Demand ~ 52% plant capacity
S.	Filter Backwash Recycling 0400-45-01-.31(9)	(1)	0	OK
	Deficiency Subtotal		5	

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)	(2-4)	0	OK
B.	Bacteriological Monitoring	(3-6)	0	OK
C.	Bacteriological Compliance 0400-45-01-.06	(4-7)	0	OK
D.	Turbidity Monitoring	(2-3)	0	OK
E.	Turbidity Compliance	(4-7)	0	OK
F.	Chlorine Residual Monitoring 0400-45-01-.17,31,36, 40	(2-3)	0	OK
G.	Primary Chemicals Monitoring	(2-3)	0	OK
H.	Primary Chemicals Compliance	(4)	0	OK
I.	Lead and Copper Monitoring 0400-45-01-.33	(2-3)	0	OK
J.	Lead and Copper Action Level 0400-45-01-.33	(3-5)	0	OK
K.	Disinfection/Disinfection By-Products and Precursors Monitoring 0400-45-01-.36, .37, .38	(2-3)	0	OK
L.	Disinfection/Disinfection By-Products and Precursors Compliance 0400-45-01-.06, .36	(2-30)	0	OK
M.	Secondary Chemicals 0400-45-01-.12	(2)	0	OK
N.	Secondary Chemicals Compliance 0400-45-01-.12	(3)	0	OK
O.	Cryptosporidium Monitoring 0400-45-01-.39	(0)	Narrative	OK
	Deficiency Subtotal		0	

6. Finished Water Storage (25)

	Requirement	Points Range	Deduction	Comments
A.	Adequate Storage 0400-45-01-.17(14)	(3-15)	0	Demand ~ 64% storage capacity
B	Inspection and Maintenance of Reservoirs, Tanks and Clearwell 0400-45-01-.17(16), (17), (33) and (34)	(1-10)	8	Clear vegetation from fences on Nissan and Nursery tanks. Replace vent screens on 100k and 10.5k clearwells. Little Mtn tank inspection past due
	Deficiency Subtotal		8	

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	OK
B	Maintenance of Pumping Equipment 0400-45 - 01-.17(13)	(1-3)	0	OK
	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), (19)	(3-5)	13	See Additional Comments below.
B	Flushing Program / Blow Offs 0400-45-01-.17(10) and (23)	(3-4)	3	Failure to maintain active flushing program since last survey.
C.	Fire Hydrants 0400-45-01-.17(18)	(0)	Narrative	OK - Update due 1/31/22
D.	Adequate Pressure 0400-45-01-.17(9)	(5)	0	OK
E.	Map of Distribution System 0400-45-01-.17(15)	(3)	0	OK - Update due 2023
F.	Approved Cross Connection Policy or Ordinance and Plan 0400-45-01-.17(6)	(4)	0	OK
G.	Working Cross Connection Program 0400- 45-01-.17(6)	(3-9)	4	Failure to conduct surveys of new and existing customers (residential).
H.	Percent Estimated Water Loss(real loss/water produced)	(0)	Narrative	~20%
	Deficiency Subtotal		20	

Rating

95% - 100% Approved
90% - 94% Provisionally Approved
0% - 89 % Unsatisfactory

Total Deficiency Points	-36
Overall Rating	563
	93.99%

Inspectors Signature Jane Smith
Will Pride

Additional Comments/Explanation:

6.B.
1 pt- Vent screens on 2 outside clearwells rusted out and vegetation on tank fences need clearing.
7 pts- Little Mountain Tank inspection past due (2/19/21).

8.A.
5 pts- Failure to collect BacT samples in accordance with the rule for new line construction.
5 pts- Failure to collect BacT sample for tank inspection using robot (Nissan tank). No disinfection records for robot.
3 pts- Failure to make and/or maintain records documenting procedures utilized in flushing and disinfection practices on new lines.

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Decherd Water Department
PWSID No. 0000187
Monitoring Program – November 2021

I. Raw Water
   A. Collect a representative sample each day the plant is in operation
   B. Conduct the following analysis:
      1. Temperature
      2. Turbidity
      3. pH
      4. Alkalinity (total) – once per week
      5. Hardness- once per week
      6. Iron – once per week
      7. Manganese – once per week
      8. Fluoride – once per week
      9. Jar tests – as needed to optimize treatment

II. Settled Water
   A. Collect a representative sample before filtration each day the plant is in operation
   B. Conduct the following analysis:
      1. Turbidity
      2. Chlorine residual (free)

III. Finished Water
   A. Collect a representative sample each day the plant is in operation
   B. Conduct the following analysis:
      1. Temperature
      2. Turbidity – report every 4 hours
      3. pH
      4. Alkalinity (total) – once per week
      5. Hardness – once per week
      6. Iron – once per week
      7. Manganese – once per week
      8. Fluoride – once per week

      *Values reported on the MOR for turbidity and chlorine residual are to be taken from the continuous chart recorders except where believed to be erroneous. DWS policy is to be followed. Grab sampling should still be conducted.

IV. Distribution System
   A. Collect representative samples from the distribution system
   B. Conduct the following analysis:
      1. Chlorine residual (free) – 5 days per week
      2. Fluoride – 5 days per week
      3. Iron – once per week
      4. Manganese – once per week
      5. Bacteriological – a minimum of 5 samples per month are to be collected and sent to a State certified laboratory for analysis.