



MISSISSIPPI STATE DEPARTMENT OF HEALTH

REPORT OF INSPECTION OF DRINKING WATER SUPPLY

PWS: 0750003 **Class:** B

An inspection of the EAGLE LAKE WATER DISTRICT water supply in WARREN county was made on 01/16/2019. Present at the time of inspection was WILL HUBERT, OPERATOR; JAKETA PLATT; TERRY MURPHY; WRITER. Official PAUL BANCHETTI Address P O BOX 820037 VICKSBURG MS 39182 W.W. Operator WILL HUBERT Address 18282 HWY 465 VICKSBURG MS 39183 No. Connections 687 No. Meters Population Served 1811 Field Chemical Analysis: pH 8.1 Cl₂(free) 2.0 Cl₂(total) H₂S N/A Iron 0.1 Fluoride Point of Sampling PLANT CLEARWELL Water Rates

COMMENTS

Technical: 5 Managerial: 5 Financial: 5

OVERALL CAPACITY RATING: 5.0 / 5.0

- At the time of inspection Mr. Hubert reported that the system was conducting 4-log virus inactivation to comply with the Ground Water Rule. A review of the MORs showed that the chlorine residual has not fallen below the required minimum.
- Under the Lead and Copper Rule, Mr. Hubert has been monitoring alkalinity, hardness, and phosphate residual at the treatment plant at least twice each month. At the time of inspection the alkalinity was 300 mg/L, the hardness was 320 mg/L, and the phosphate residual was 2.5 mg/L.
- PChem samples were collected from both wells at the time of inspection. These samples are collected every five years. The field results for pH and temperature are given below. The iron was over range on the field kit.

| | Well #2 | Well #3 |
|-------|---------|---------|
| pH: | 7.1 | 7.0 |
| Temp: | 66 F | 66F |

- The water system appeared to be well maintained and well operated. System operators and officials should be commended for their hard work and dedication.

5. The system can continue to supply water during a power outage emergency through the use of a generator at the treatment plant. (T5-1)

*** GENERAL & REMINDER COMMENTS ***

6. As a reminder, sample sites for monthly bacteriological samples should be rotated and the locations of those samples should be identified by their physical addresses. Also when collecting bacteriological samples, the Operator should measure and record free & total chlorine on the sample cards.
7. Whenever system pressure is lost, even for brief periods of time, contaminants may be introduced to the system through back flow or back-siphonage. When this occurs, Officials should notify all customers in the affected area to boil their drinking water until clear bacteriological samples have been obtained.
8. All dead-end water lines should be flushed on a routine schedule to clear the lines of sediment and stagnant water.
9. When repairs are made on the water distribution system, all lines affected should be properly chlorinated and flushed before they are placed back in service.
10. To prevent unauthorized entrance, Officials should ensure that all gates, doors, latches on tanks, etc. are kept locked at all times.

Completed by Amy L. McLeod, E.I. on 01/25/2019.

Reviewed by Greg Caraway, P.E. on 02/04/2019.

If you have any questions, please call (601)576-7518.

pc:

PAUL BANCHETTI, OFFICIAL
WILL HUBERT, OPERATOR



Mississippi Department of Health Bureau of Public Water Supply

STANDARD FORM

FY 2019 Public Water System Capacity Assessment Form

NOTE: This form must be completed whenever a routine sanitary survey of a public water system is conducted by a regional engineer of the Bureau of Public Water Supply

PWS ID#: 0750003 Class: B Survey Date: 01-16-2019 County: WARREN

Public Water System: EAGLE LAKE WATER DISTRICT Conn: 687

Certified Waterworks Operator: WILL HUBERT Pop: 1811

CAPACITY RATING DETERMINATION

Technical (T) Capacity Rating: [5] Managerial (M) Capacity Rating [5] Financial (F) Capacity Rating [5]

$$\text{Capacity Rating} = \frac{T+M+F}{3} = \frac{15}{3} = 5$$

Overall Capacity Rating = 5.0

Completed by Amy L. McLeod, E.I. on 01/25/2019

Reviewed by Greg Caraway, P.E. on 02/04/2019

Comments: _____

| Technical Capacity Assessment | Point Scale | Point Award |
|---|--|-------------|
| [T1] Does the water system have any significant deficiencies? [<u>Y</u> <u>(N)</u>] | N - 1pt. Y - 0pt. | 1 |
| [T2] 1) Was the water treatment process functioning properly? [<u>Y</u> <u>(N)</u>] (i.e. Is pH, iron, chlorine, fluoride, etc. within acceptable range?) 2) Was needed water system equipment in place and functioning properly at the time of survey? [<u>Y</u> <u>(N)</u>] (NOTE: Equipment deficiencies must be identified in survey report.) 3) Were records available to the regional engineer clearly showing that all water storage tanks have been inspected and cleaned or painted (if needed) within the past 5 years? [<u>Y</u> <u>(N)</u> <u>NA</u>] (NOTE: All YESs required to receive point) | All Y - 1 pt. Else - 0 pt. | 1 |
| [T3] 1) Was the certified waterworks operator or his/her authorized representative present for the survey? [<u>Y</u> <u>(N)</u>] 2) Was log book up to date and properly maintained? [<u>Y</u> <u>(N)</u>] (Are minimum days being met based on system classification) 3) Was the water system properly maintained at the time of survey? [<u>Y</u> <u>(N)</u>] 4) Did operator/system personnel satisfactorily demonstrate to the regional engineer that he/she could fully perform all water quality tests required to properly operate this water system? [<u>Y</u> <u>(N)</u>] (NOTE: All YESs required to receive point) | All Y - 1 pt. Else - 0 pt. | 1 |
| [T4] 1) Does water system routinely track water loss and were acceptable record available for review? [<u>Y</u> <u>(N)</u>] 2) Is water system overloaded? (i.e. serving customers in excess of MSDH approved design capacity)? [<u>Y</u> <u>(N)</u>] 3) Was there any indication that the water system is/has been experiencing pressure problems in any part(s) of the distribution system? [<u>Y</u> <u>(N)</u>] (based on operator information, customer complaints, MSDH records, other information) 4) Are well pumping tests performed routinely? [<u>Y</u> <u>(N)</u> <u>NA</u>] (NOTE: YES FOR #1 & YES OR N/A FOR #4 AND NOs FOR #2 & #3 required to receive point) | 1)Y - pt. 2)N - pt. 3)N - pt. 4)Y - pt. | 1 |
| [T5] 1) Does the water system have the ability to provide water during power outages? (i.e. generator, emergency tie-ins, etc.) [<u>Y</u> <u>(N)</u>] 2) Does the water system have a usable backup source of water? [<u>Y</u> <u>(N)</u>] (NOTE: Must be documented on survey report) | All Y - 1 pt. Else - 0 pt. | 1 |
| TECHNICAL CAPACITY RATING = [<u>5</u>] (Total Points) | | |

| Managerial Capacity Assessment | Point Scale | Point Award |
|--|-------------------------------|--------------------|
| [M1] Were all SDWA required records maintained in a logical and orderly manner and available for review by the regional engineer during the survey? (Y)N] | Y - 1pt. N - 0pt. | 1 |
| [M2] 1) Have acceptable written policies and procedures for operating this water system been formally adopted and were these policies available for review during the survey? (Y)N] 2) Have all board members (in office more than 12 months) completed Board Member Training? [(Y)N NA] 3) Does the Board of Directors meet monthly and were minutes of Board meetings available for review during the survey? (NOTE: Quarterly meetings allowed if system has an officially designated full time manager) (Y)N NA] (NOTE: ALL YESs or NAs required to receive point. NA - Not Applicable) | All Y - 1 pt. Else - 0 pt. | 1 |
| [M3] Has the water system had any SDWA violations since the last Capacity Assessment? [Y(N)] | N - 1pt. Y - 0pt. | 1 |
| [M4] Has the water system developed a long range improvements plan and was this plan available for review during the survey? (Y)N] | Y - 1pt. N - 0pt. | 1 |
| [M5] 1) Does the water system have an effective cross connection control program in compliance with MSDH regulations? (Y)N] 2) Was a copy of the MSDH approved bacti site plan and lead/copper site plan available for review during the survey and do the bacti results clearly show that this approved plan is being followed? (Y)N] (NOTE: All YESs required to receive point) | All Y - 1 pt. Else - 0 pt. | 1 |
| MANAGERIAL CAPACITY RATING = [<u>5</u>] (Total Points) | | |

| Financial Capacity Assessment | Point Scale | Point Award |
|---|-------------------------------|--------------------|
| [F1] Has the water system raised water rates in the past 5 years? [(Y)N] (NOTE: Point may be awarded if the water system provides acceptable financial documentation clearly showing that a rate increase is not needed, i.e. revenue has consistently exceeded expenditures by at least 10%, etc.) | Y - 1pt. N - 0pt. | 1 |
| [F2] Does the water system have an officially adopted policy requiring that water rates be routinely reviewed and adjusted as appropriate and was this policy available for review during the survey? (Y)N] | Y - 1pt. N - 0pt. | 1 |
| [F3] Does the water system have an officially adopted cut-off policy for customers who do not pay their water bills, was a copy of this policy available for review by the regional engineer, and do system records (cut-off lists, etc.) clearly show that the water system effectively implements this cut-off policy? (Y)N] | Y - 1pt. N - 0pt. | 1 |
| [F4] Was a copy of the water system's officially adopted annual budget available for review by the regional engineer and does the water system's financial accounting system clearly and accurately track the expenditure and receipt of funds? (Y)N] | Y - 1pt. N - 0pt. | 1 |
| [F5 - Municipal Systems] 1) Was a copy of the latest audit report available for review at the time of the survey? [Y N] 2) Does this audit report clearly show that water and sewer fund account(s) are maintained separately from all other municipal accounts? [Y N] (NOTE: Yes answer to all questions required to receive point.) | All Y - 1 pt. Else - 0 pt. | |
| [F5 - Rural Systems] 1) Was the latest financial report / audit report available for review? (Y)N] 2) Does the latest financial report show that receipts exceeded expenditures? (Y)N] (NOTE: Yes answer to both questions required to receive point) | All Y - 1 pt. Else - 0 pt. | 1 |
| FINANCIAL CAPACITY RATING = [<u>5</u>] (Total Points) | | |

**MISSISSIPPI DEPARTMENT OF HEALTH
BUREAU OF PUBLIC WATER SUPPLY
DESIGN CAPACITY SHEET**

System: **EAGLE LAKE WATER DISTRICT**
ID: **0750003** Class: **B** County: **WARREN**

Date Completed: **01/25/2019**
Connections - Actual: **686** Equivalent: **686**
Design Capacity: **1120** Percent Design Capacity: **686/1120 = 61.3%**

WELL CAPACITY:

Well #1 - Abandoned
Well #2 Capacity = 332 GPM - pumps to the Treatment Plant
Well #3 Capacity = 252 GPM - pumps to the Treatment Plant
January 2019 Pump Test Results

STORAGE CAPACITY:

100,000 gallon Elevated Tank at the Plant
100,000 gallon Elevated Tank on Hwy 465

LIMITING FACTOR DETERMINATION:

| | |
|--|-----------|
| Aerators: 2 AT 400 gpm (each) | = 800 gpm |
| Filters: 2 AT 400 gpm (each) | = 800 gpm |
| Service Pump Capacity: 2 AT 200 gpm (each) | = 400 gpm |
| Well Capacity: 332 + 252 | = 584 gpm |

Therefore, the limiting factor is the service pump capacity.

Can the service pumps fill the onsite 100,000 gallon elevated tank within 6 hours?

400 gpm X 60 min X 6 hrs = 144,000 gallons; YES
Full credit can be given for the elevated tank onsite, and the remaining 44,000 gallons can be credited for the offsite elevated tank.

DESIGN CAPACITY:

Total Design Capacity = Service Pump Capacity + Total Storage/200 minutes
= 400 + 144,000/200
= 1120

TOTAL DESIGN CAPACITY = 1120 CONNECTIONS

CALCULATE EQUIVALENT CONNECTIONS TAKING INTO ACCOUNT HIGH COMMERCIAL/INDUSTRIAL USAGE:

This system does not serve any high commercial or industrial users. Therefore, the equivalent connections is equal to the actual connections.

Total number of active customers (CONNECTIONS) = 686

THEREFORE THIS SYSTEM IS CURRENTLY AT 686/1120 * 100% = 61% OF CAPACITY

GROUNDWATER RULE CALCULATIONS:

Minimum concentration of free chlorine residual for 4-log inactivation of Viruses:

Contact time in control tanks:

Train 1: 7,500 gallons/241 gallons/minute * 0.5 = 15.6 minutes

Train 2: 9,800 gallons/291 gallons/minute * 0.5 = 16.8 minutes

(Only a 0.5 baffling, or short-circuiting, factor assumed here because water comes into the top of the tank and out the bottom.)

Based on water temperature = 65F; CT = 3.3 mg/l min

Minimum required chlorine concentration = 3.3 mg/l min / 15.6 min = 0.2 mg/l

Therefore the minimum required chlorine concentration is 0.2 mg/l if measured past the control tanks.