



C. Earl Hunter, Commissioner

*Promoting and protecting the health of the public and the environment.*

September 9, 2010

Town of Denmark  
Attn: Dr. Gerald Wright  
4768 Carolina Highway  
Denmark, SC 29042

RE: Sanitary Survey  
System #0510002  
Bamberg County

Dear Dr. Wright:

On August 18, 2010 a sanitary survey was conducted on the Town of Denmark public water system. The intent of the sanitary survey is to evaluate the public water system's ability to provide a continuous supply of safe drinking water to its customers.

The Town of Denmark public water system received an overall rating of **Needs Improvement**. Enclosed is a copy of the survey and a report, which includes a description of the public water system, specific findings made during the sanitary survey, and recommendations for correcting any deficiencies. This survey and the report should be kept on file for no less than ten (10) years and be made available to the public or DHEC upon request. It is requested that all parties responsible for the operation and maintenance of the water system review this report promptly.

If you have any questions or if I can be of any assistance, please call me at (803) 641-7670.

Sincerely,

Travis Fuss  
Region 5 EQC, Aiken

cc: Marty Chaney, Bureau of Water Compliance Assurance Division

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL  
CONTROL  
REGION 5 EQC

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**SANITARY SURVEY REPORT**

*Town of Denmark  
Water System # 0510002  
Bamberg County*

**Introduction**

The South Carolina Department of Health and Environmental Control recently conducted a sanitary survey of the Town of Denmark Public Water System (Water System # 0510002). This survey consisted of a review of the Department files and an on-site inspection by Department personnel on August 18, 2010. The following persons participated in the on-site inspection:

|                  |                                   |
|------------------|-----------------------------------|
| Travis Fuss      | SCDHEC - Region 5 EQC, Aiken      |
| Daniel Malonza   | SCDHEC – BOW, Enforcement Section |
| Jimmie Shepherd  | Town of Denmark                   |
| Heyward Robinson | Town of Denmark                   |

This report includes a description of the water system, a list of findings and recommendations noted during the survey.

**System Description**

The Town of Denmark owns and operates a groundwater facility and associated potable water distribution system that serves approximately 3800 by approximately 1501 service connections. Information on the system's wells is given in the table below.

*Well Information*

|                            | Type           | Horsepower | Yield   | Regulated Capacity | Treatment        |
|----------------------------|----------------|------------|---------|--------------------|------------------|
| Well One<br>Brooker Center | NOT IN SERVICE |            |         |                    |                  |
| Well Two<br>Voorhees       | Turbine        | 60         | 330 gpm | 316.80 TGD         | Gaseous Chlorine |

|                             |                |    |         |         |   |
|-----------------------------|----------------|----|---------|---------|---|
| Well Three<br>Legare Street | NOT IN SERVICE |    |         |         |   |
| Well Four<br>Cox Mill       | Turbine        | 50 | 350 gpm | 336 TGD | Gaseous Chlorine<br>Iron Bacteria Removal |

Three (3) elevated storage tanks with a total volume of approximately 475,000 gallons serve the Town of Denmark public water system. However, the City Hall Tank was taken offline in late 2008/ early 2009 and may, or may not, be brought back into service. An emergency connection exists with the Town of Bamberg.

#### *Storage Capacity*

| Tank                              | Capacity (gallons) |
|-----------------------------------|--------------------|
| City Hall Elevated Tank (offline) | 100,000            |
| Nibco Elevated Tank               | 250,000            |
| Voorhees Elevated Tank            | 125,000            |

Currently, the Town of Denmark public water system has the following operators:

| Operator           | License      | Certification # | Class |
|--------------------|--------------|-----------------|-------|
| Tim Freeman        | Treatment    | 6651            | D     |
|                    | Distribution | 1830            | G     |
| Jimmie Shepherd    | Treatment    | 7449            | T     |
|                    | Distribution | 931 (lapsed)    | G     |
| James Preacher III | Treatment    | 8413            | D     |
|                    | Distribution | 3337            | T     |

#### **Findings and Recommendations**

- 1) The system was upgraded to a **Needs Improvement** rating for Water Quality. The Water System has utilized the services of the SC Rural Water Association to help establish an effective flushing program. A vigorous system wide flushing sequence was completed throughout the Town. Although the Town still has periodic discoloration issues, less citizen complaints have been received by the Department and the Town.
- 2) The system was upgraded to a **Satisfactory** rating for Operation and Control. The purpose of this item is to ensure the distribution system is being operated in a safe, reliable manner. The rating upgrade is a result of an increased participation and proactive approach to operating and maintaining the Water

- System. The Town has replaced approximately 30 hydrants and has actively searched and replaced water line valves. These improvements have allowed the Town to more effectively control the Water system.
- 3) The system was upgraded to a **Needs Improvement** rating for Valve and Hydrant Maintenance. As mentioned previously, many valves and hydrants have been recently replaced. The Town should continue their pursuit of identifying and exercising all valves so that all portions of the distribution system can be isolated and repaired, when necessary.
  - 4) The system was upgraded to a **Needs Improvement** rating for Flushing Program. The purpose of a flushing program is to ensure that the system's routine flushing program is adequate to help prevent customer complaints and water quality problems associated with stagnant, discolored, and sediment-laden water. Although the Town has made significant improvement to their flushing program and completed a system wide flush of the system, a more accurate and appropriate written program needs to be developed. This is important as a Flushing Program will need to be implemented on a routine basis.
  - 5) The system maintained an **Unsatisfactory** rating for Leak Detection and Repair Program. Water line leaks and breaks are being fixed quickly and the actions are being recorded in a log. However, at the time of the survey, a water audit was still not available for review. This deficiency has been noted on past surveys.
  - 6) The system was upgraded to a **Satisfactory** rating for System Map. A new and improved system map has been developed.
  - 7) The system was upgraded to a **Satisfactory** rating for Storage Appurtenances. Repairs and modifications to the Voorhees Tank overflow pipe and level indicator have been made.
  - 8) The system was upgraded to a **Satisfactory** rating for Procedures Manual. The purpose of this item is to ensure that a water system maintains written procedures for the operation and maintenance of its systems. The Town has a procedures manual in its possession, but a few of the written programs need to be updated to account for recent changes made to the system's programs.

### **Conclusions**

The overall rating for the follow-up sanitary survey is a **Needs Improvement**. The Department appreciates the improvements made to the Water System and looks forward to additional improvements in the future. We are committed to working with your system to ensure all deficiencies are properly addressed in a timely manner. The Department will continue to work with the water system to ensure that the residents of Denmark receive safe and reliable drinking water.