

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF MARROWBONE WATER)
DISTRICT, CUMBERLAND COUNTY, KENTUCKY,))
FOR A CERTIFICATE OF CONVENIENCE AND)
NECESSITY AUTHORIZING SAID DISTRICT TO))
CONSTRUCT ADDITIONS, EXTENSIONS AND)
IMPROVEMENTS TO ITS EXISTING MUNICIPAL))
WATER DISTRIBUTION SYSTEM PURSUANT TO) CASE NO. 9769
THE EXPRESS PROVISIONS OF CHAPTERS 74)
AND 106 OF THE KENTUCKY REVISED)
STATUTES)

O R D E R

IT IS ORDERED that Marrowbone Water District ("Marrowbone") shall file an original and seven copies of the following information with the Commission with a copy to all parties of record no later than January 5, 1987. If the information cannot be provided by this date, Marrowbone should submit a motion for an extension of time stating the reason a delay is necessary and include a date by which it will be furnished. Such motion will be considered by the Commission. Marrowbone shall furnish with each response the name of the witness who will be available at the public hearing for responding to questions concerning each item of information requested.

1. Provide hydraulic analyses, supported by computations and actual field measurements, of typical operational sequences of the existing water distribution system. These hydraulic analyses should demonstrate the operation of all pump stations and the

"empty-fill" cycle of all water storage tanks. Computations are to be documented by a labeled schematic map of the system that shows pipeline sizes, lengths, connections, pumps, water storage tanks, wells, and sea level elevations of key points, as well as allocations of actual customer demands. Flows used in the analyses shall be identified as to whether they are based on average instantaneous flows, peak instantaneous flows, or any combination or variation thereof. The flows used in the analyses shall be documented by actual field measurements and customer use records. Justify fully any assumptions used in the analyses. (Note - these analyses should use the same schematic as the analyses of the proposed water distribution system previously filed).

2. Provide a summary of any operational deficiencies of the existing water system that are indicated by the hydraulic analyses or that are known from experience.

3. In order to obtain realistic results when utilizing computer hydraulic analyses to predict a water distribution system's performance, engineering references stress the importance of calibrating the results predicted to actual hydraulic conditions. This calibration process should include matching field measurements to the results predicted by the computer over a wide range of actual operating conditions. As a minimum this should include average and maximum water consumption periods, as well as "fire flow" or very high demand periods.

Based on the above, explain the procedures used to verify the computer hydraulic analyses filed in this case. This explanation

should be documented by field measurements, hydraulic calculations, etc.

4. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available at the locations listed below on Marrowbone's system. Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder. Also state the schematic junction number nearest the location of the pressure recorder.

- a. The existing water storage tank.
- b. Water line in the vicinity of the proposed tank site.
- c. Water line in the vicinity of the connection point for the proposed line extension.
- d. On the discharge side of the high service pumps.

5. Provide a list of each of Marrowbone's existing pump stations (this list should include all high service pumps). Give the location, number of pumps and their rated capacities, and the purpose of each pump station. Explain how the operation of each pump station is controlled. Provide a copy of the pump manufacturer's characteristics (head/capacity) curve for each of Marrowbone's existing pumps. Identify each curve as to the particular pump and pump station to which it applies. Also state if pump is in use and if pump will remain in use, will be abandoned or will be replaced.

6. Provide the criteria used in determining the location, size, overflow elevation and head range for the proposed water storage tank. In addition, explain how the water level in the

proposed water tank will be controlled. In the information filed there was no mention of an altitude valve, telemetric controls, etc. being bid as part of this project.

7. The Feasibility Study which was filed with the application states that during peak demand periods, the water usage approaches the capacity of the existing water treatment plant. The report also states, "This problem will be compounded by the proposed extension and must be addressed at least concurrently with the expansion of the District's service area." Provide Marrowbone's peak day usage, Marrowbone's projected annual peak day demands, how they were forecasted, and when the existing plant capacity was or will be exceeded. Also provide information concerning how safe, adequate, and reliable service is to be provided to the expanded service area if Marrowbone cannot produce sufficient quantities of water to satisfy the peak demands of its present customers.

Done at Frankfort, Kentucky, this 16th day of December, 1986.

PUBLIC SERVICE COMMISSION


For the Commission

ATTEST:

Executive Director