

Water Board Basics: Keys for Success

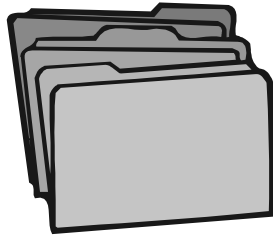
Operational Record Keeping

Records are the glue that holds small water utilities together. The process of “keeping” the records is the utility Board’s responsibility. The Board and its manager or operator are responsible for “making” accurate records. The difference is often misunderstood. A record can be as simple as a written note of how many gallons a groundwater well produced over a month’s time. *Finding* that record next year, during the same month, is the secret to “record keeping.” When developing a record keeping system, the Board must decide what records to collect; where to store them; and who has access to them. Removing a record from the utility’s file cabinet and leaving it at a Board member’s house for several months is not effective record keeping! A utility should keep four types of records, including operational, legal, financial, and managerial. Let’s focus on operational records.

Operations and Maintenance Manuals

While all four types of records are important, operational records are often overlooked.

The operator is frequently too busy “fighting fires” to set up and keep good operational records. These records include operations and maintenance (O&M) manuals, as-built distribution maps, schematic facility diagrams, operational data and repair/replacement records.



An O&M manual is a key document for the utility. The Board should insist that the operator complete this task, because many times a good operator leaves the district and the new operator has only a manual for reference.

An O&M manual should list operations responsibilities that must be completed daily, weekly and monthly. These responsibilities are most commonly included in the O&M manual as a checklist. The O&M manual also should contain a basic preventative maintenance schedule, including a simple diagram of the distribution system, pressure zones (if applicable) and the location of water quality sampling points. In addition, it should include copies of pertinent manufacturer instruction and repair manuals for operator reference.

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Keys for Success: Operational Record Keeping

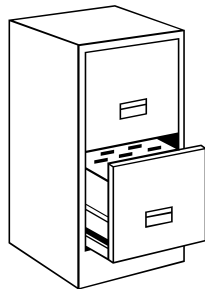
Maps, diagrams and repair records

Accurate and up-to-date distribution maps are critical! The base map is usually prepared by an engineering firm when the system is first constructed or during a major system upgrade. From then on, the utility must note changes to the system. It could take 10 years or more before the next system upgrade is completed. It is very important to have several (five at a minimum) copies of the distribution maps. One set is filed in the utility's historical file and is used only as a master copy for making additional sets. Many utilities have used the master copy to make notes on during a field project and later regretted doing so.

Schematic facility diagrams are not used enough by small utilities. A diagram could simply be a hand-made drawing of an electrical panel, a valve arrangement or a storage tank volume "cheat sheet." When an emergency arises, these drawings are invaluable. Schematics of valve arrangements (showing which valve to open or close) are helpful, especially for backup operators who perform only weekend operations. A chart showing the rate a storage tank will fill at a specific pumping rate is also a useful tool. The chart saves time; prevents math errors and can be used to plan the operator's daily routine. Schematic diagrams should be a single-page drawing placed in a plastic slip-cover and posted on the wall of the well shack, treatment storage room or office.

Operational data should be collected and kept for future reference. The most valuable operational data is a record of source water production. Well-operated small utilities keep track of groundwater or spring production

so that they can compare it against the customer's metered usage. The data is used to make water loss calculations. If water losses are above 15 percent, the utility should find out where its water is going. The utility should repair master meter and source water meter problems immediately. Operational data also can be helpful in planning and budgeting. It helps to know how materials/supplies were used in the summer months last year so that plans can be made to purchase the needed volume before it runs out this year.



Repair and replacement records are made by the operator and presented to the Board, usually during Board meetings. These records detail what parts were used and where system improvements were made. If repairs are made in the distribution system, the operator should mark the location of the repair on the office copy of the distribution map. The operator should make a list of repairs for equipment, such as well pumps, pressure reducing, sustaining, and surge protection valves, chemical feed pumps and customer meters. Repair records can also be used in overall planning. If a section of distribution main has been repaired six or seven times during the course of a year, it may be time to consider replacing the whole section rather than repairing it piece by piece.

Operations records are valuable tools. Records document the utility's daily operations and can help a district plan for the future. Take the time to set up a good record keeping file. It will make operational decisions clear for the operator and the Board. It also shows customers that the utility is doing a good job.