

How Water Works

ILLUSTRATED PROCESSES, EQUIPMENT, AND TECHNOLOGY

A Typical Water System: From Source to Tap and Back

How Water Works looks at the processes, equipment, and appurtenances of a water supply system. This month's image provides an overview of the basic parts of a water system: source, treatment, distribution, collection, sewage treatment, and reuse. In subsequent issues we'll explore the inner workings of the drinking water system components, beginning with the source and flowing through to the tap. Next month: surface water sources

1a and 1b. Water is taken from its source, which may be a reservoir (1a), river, or well (1b). Water is pumped or flows by gravity to the treatment plant.

2. At the treatment plant, impurities in the water are removed or inactivated, and fluoride may be added.

3. Clean drinking water is stored in an elevated tank.

4. Distribution mains carry water from the treatment plant or tank to service lines. Mains also provide water to hydrants for fire protection.

5. Service lines connect distribution mains to building plumbing systems.

6. Used water from sanitary sewers is piped to the sewage treatment plant.

7. At the sewage treatment plant, used water goes through a multiple-step cleansing process.

8. Cleaned water is returned to the river where it re-enters the water cycle or is additionally cleaned and reused for irrigation purposes, such as golf course watering.

PIPELINE KEY

-  UNTREATED WATER
-  TREATED WATER
-  WASTEWATER
-  RECYCLED WATER

Illustration elements exaggerated for emphasis.