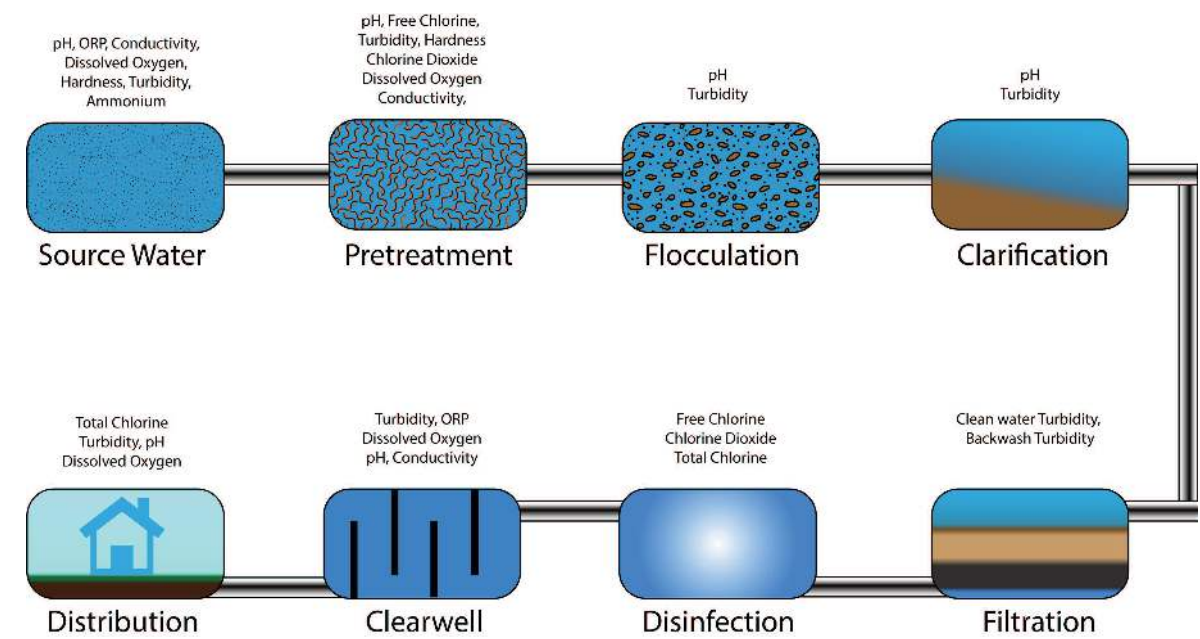


Drinking Water Plant Measurements



ECD Product Solutions	Model T80 Transmitter	Model S80 pH Sensors	Model S80 ORP Sensors	Model S80 Conductivity Sensors	Model FC80 Free Chlorine Analyzer	Model TC80 Total Chlorine Analyzer	Model CD80 Chlorine Dioxide Analyzer	Model CA6 Colorimetric Analyzer	Model DO82 ppm DO Sensors	Model TR86 Turbidity Sensors
Source water pH										
Source Water Conductivity										
Source Water ORP										
Source Water Dissolved Oxygen										
Source Water Turbidity										
Source Water Hardness										
Source Water Ammonia										
Pretreatment pH										
Pretreatment Conductivity										
Pretreatment Free Chlorine										
Pretreatment Chlorine Dioxide										
Pretreatment Turbidity										
Pretreatment Dissolved Oxygen										
Floc and Clarification pH										
Floc and Clarification Turbidity										
Filtration Clean water Turbidity										
Filtration Backwash Turbidity										
Disinfection Free Chlorine										
Disinfection Total Chlorine										
Disinfection Chlorine Dioxide										
Clearwell pH										
Clearwell ORP										
Clearwell Turbidity										
Clearwell Dissolved Oxygen										
Clearwell Conductivity										
Distribution pH										
Distribution Total Chlorine										
Distribution Dissolved Oxygen										
Distribution Turbidity										



ELECTRO-CHEMICAL DEVICES
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Liquid Analytical Instrumentation
for the Drinking Water Industries

Accurate and Reliable
Process Measurement

- pH
- ORP
- Conductivity
- Chlorine Dioxide
- Free Chlorine
- Total Chlorine
- Dissolved Oxygen
- Turbidity
- Suspended Solids
- Ammonia
- Hardness



ELECTRO-CHEMICAL DEVICES



Source Water

The water may come from ground water or surface waters. Well water is low in organic materials but may have iron, manganese, excessive hardness and sulfides present. Surface waters are passed through a screen to remove leaves and fish but other materials are still present algae, organic matter, silt and ammonia from agricultural runoff.

Measurements:

- Turbidity
- Dissolved Oxygen
- pH
- Conductivity
- ORP
- Hardness
- Ammonium



T80 Universal pH, ORP, ION, Conductivity, Resistivity transmitter



S80 Conductivity Sensors



Free or Total Chlorine Analyzers



TRITON DO82 ppm Dissolved Oxygen



S80 ORP Sensors



S80 pH Sensors



CA6 Colorimetric Hardness Analyzer



TRITON TR86 Turbidity



Pretreatment

Raw water is oxidized with chlorine, chlorine dioxide or ozone to remove the metals and sulfides, kill disease causing organisms and algae. Aeration may be used to remove odors from sulfides and volatile organic compounds. The water may be pretreated using lime/sodium softening to remove excessive hardness. The pH is adjusted slightly acidic to optimize flocculation.

Measurements:

- Free Chlorine
- Chlorine Dioxide
- pH
- Turbidity
- Conductivity
- Dissolved Oxygen
- Hardness

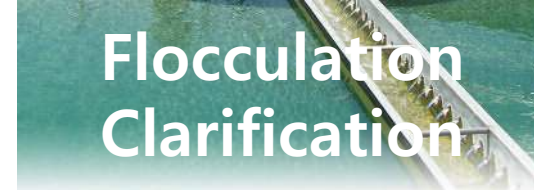


Distribution

Water distribution systems consist of pipes, storage tanks, pumps and other physical features that deliver water from water treatment plant to the customer's connection. The pH is monitored to limit corrosion, total chlorine is measured to assure a residual disinfectant is present and the Turbidity and Dissolved Oxygen are monitored as general indicators of overall water quality.

Measurements:

- Total Chlorine
- Turbidity
- Dissolved Oxygen
- pH



Flocculation Clarification

Alum, aluminum sulfate and/or ferric sulfates or ferric chlorides are rapidly mixed in the turbid water to destabilize the particles and cause them to clump together and form a floc. The water is then slowly mixed to grow the floc until the particles are large enough to settle in a clarifier. The clear water is drawn off and sent to filtration. The settled sludge is sent to disposal.

Measurements:

- pH
- Turbidity



Clearwell

A clearwell is a large storage tank that holds treated drinking water for a several hours before it is distributed. The clearwell collects filtered water once the pH and chlorine levels have been adjusted to optimum levels. The clearwell also provides adequate contact time for disinfection before the water leaves the plant.

Measurements:

- Turbidity
- Dissolved Oxygen
- pH
- Conductivity
- ORP



Filtration

The most commonly used filter type is a dual-media filter comprised of sand and anthracite. The majority of particles removed are trapped in the upper layers of the filter. The filters are backwashed to reduce the head loss, back pressure, by removing most but not all of the trapped particles from the sand. The filter is most effective with a small amount of particles trapped in the media.

Measurements:

- Turbidity, Clean water
- Turbidity, Backwash



Secondary Disinfection

To protect drinking water from disease causing organisms water suppliers add a disinfectant, such as chlorine and/or chloramine, to drinking water. Public water systems using surface water or ground water under the direct influence of surface water are required to maintain a detectable disinfectant residual in the distribution system. Chloramine provides this residual, while not as strong an oxidizer as chlorine it has increased stability.

Measurements:

- Free Chlorine
- Chlorine Dioxide
- Total Chlorine