

MPW Water System Quality — SEPTEMBER 2004

Reverse Osmosis (RO) Water Treatment Plants

Reverse Osmosis (RO) Pure Water Dispensers

| PARAMETER MEASURED | SDWA Standards | RO Plant 1 | RO Plant 2 | RO Plant 3 | RO Plant 4 | AVE | CPW | DISP 1 | DISP 2 | DISP 3 |
|--|----------------|------------|------------|------------|------------|------------|------------|--------|--------|--------|
| pH (Standard Units) | 6.5 - 8.5 | 8.0 | 8.3 | 8.0 | 8.1 | 8.1 | 8.3 | 7.9 | 8.1 | 8.1 |
| Alkalinity (ppm as CaCO ₃) | NS | 58 | 92 | 71 | 70 | 73 | 26 | 41 | 52 | 42 |
| Hardness (ppm) | NS | 32 | 40 | 28 | 45 | 36 | 60 | 9 | 8 | 7 |
| Sodium (ppm) | NS | 31 | 49 | 40 | 37 | 39 | 13 | 21 | 26 | 26 |
| Chloride (ppm) | 250 | 35 | 35 | 25 | 25 | 30 | 30 | 5 | 5 | 5 |
| Fluoride (ppm) | 4.0 | 0.3 | 0.4 | 0.4 | 0.5 | 0.4 | 1.0 | 0.1 | 0.2 | 0.1 |
| Average residual chlorine (disinfectant) in the water distribution system: | | | | | | 85 | 80 | | | |
| Average water temperature in the distribution system in degrees ° Fahrenheit: | | | | | | 0.8 | 2.8 | | | |



DEFINITIONS & TABLE KEY

pH — A measurement of the degree to which water may be acidic or alkaline. Measured in units on a scale of 0 (most acidic) to 14 (most alkaline) with 7 being neutral.

Alkalinity — Alkalinity is measured as calcium carbonate (CaCO₃), and refers to a water's buffering capacity -- the ability to keep the pH stable as acids or bases are added. Most of water's buffering capacity is due to carbonates and bicarbonates. MPW's groundwater source, the Middendorf Aquifer, has a high level of bicarbonates, removed during the RO water treatment process.

Chloride — A major constituent of most waters, chlorides are widely distributed in nature as salts. Chloride increases the electrical conductivity of water and thus increases its corrosivity.

Fluoride — MPW's water contains a beneficial amount of fluoride (between 0.3 and 1.2). Fluoride is naturally-occurring in our groundwater. CCPW, which has a surface water source, adds fluorine to the water at the plant. **The Primary (enforceable) MCL for fluoride is 4.0 ppm. The Secondary (aesthetic, non-health related) standard is 2.0 ppm.**

Hardness — The MPW drinking water is soft (less than 70 ppm, or 4 grains per gallon).

Sodium — Sodium is a necessary nutrient in the human body, and is found naturally in MPW's groundwater as dissolved salt (sodium chloride, NaCl). The RO treatment process removes it, but some is added back into the final blend. **Although there is no established standard for sodium in drinking water, MPW tap water may contain sodium over the 20 ppm recommended for sodium restricted diets.**

- CPW** — Charleston Commissioners of Public Works
- DISP** — Pure RO Bottled Water Dispensers (For locations, refer to the map.)
- MCL** — Maximum Contaminant Level set by the SDWA
- NS** — No Standards
- ppm** — parts per million, or milligrams per liter (mg/L) (the equivalent of 1 cent (\$0.01) in \$10,000.00)
- RO** — Reverse Osmosis
- SDWA** — Safe Drinking Water Act
- >** — An abbreviation meaning "more than".
- <** — An abbreviation meaning "less than".