Performance Data

IMPORTANT! Read this performance data and compare the capabilities of this system with your actual water treatment needs. It is recommended that before installing a water treatment system, you have your water supply tested to determine your actual water treatment needs.

This system has been tested according to NSF/ANSI 58 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58.

Model WRO-3000

Substance	Influent Challenge Concentration	Maximum Permissible Product Water Concentration	Reduction Requirements	Minimum Reduction	Average Reduction
Standard 42 – Post-polishing Filter					
Chlorine	2.0 ppm	<0.05 ppm			88%
Standard 58					
Total Dissolved Solids	750 ± 40 mg/L	187 mg/L		94.6%	96.2%
Fluoride	8.0 mg/L ± 10%	1.5 mg/L		84%	91.2%
Cysts	Minimum 50,000/mL		99.95%	99.98%	99.99%
Turbidity	11 mg/L ± 1 NTU	0.5 NTU		99.8%	99.9%
Lead	0.15 mg/L ± 10%	0.010 NTU		93.4%	97.7%
Selenium	0.10 mg/L ± 10%	0.05 mg/L		58.6%	84.7%
Copper	3.0 mg/L ± 10%	1.3 mg/L		97.7%	99.3%

Production Rate: 5.7 gpd (21.58 Lpd)
NSF/ANSI Standard 58 certified to reduce cysts such as Cryptosporidium and Giardia by mechanical means.

Model WRO-3500

Substance	Influent Challenge Concentration	Maximum Permissible Product Water Concentration	Reduction Requirements	Minimum Reduction	Average Reduction
Standard 58					
Total Dissolved Solids	750 ± 40 mg/L	187 mg/L		97.3%	98.5%
Pentavalent Arsenic†	0.30 mg/L ±10%	0.025 mg/L		98.2%	99.0%
Fluoride	8.0 ± 10%	1.5 mg/L		84.1%	91.2%
Cysts	Minimum 50,000/mL		99.95%	99.99%	99.99%
Turbidity	11 mg/L ± 1 NTU	0.5 NTU		99.6%	99.9%
Lead	0.15 mg/L ± 10%	0.010 NTU		93.3%	97.7%
Nitrate plus Nitrite (both as N)	30.0 mg/L±10%	10.0 mg/L		90.1%	93.2%
Nitrate	27.0 mg/L ± 10%	10.0 mg/L		90.2%	93.2%
Nitrite	3.0 mg/L ± 10%	1.0 mg/L		91.0%	93.5%
Selenium	0.10 mg/L ± 10%	0.05 mg/L		59.0%	84.7%
Copper	3.0 mg/L ± 10%	1.3 mg/L		97.8%	99.3%
Cadmium	0.03 mg/L ± 10%	0.005 mg/L		95.1%	97.6%
Hexavalent Chromium	0.3 ± 10%	0.1 mg/L		97.8%	98.7%
Trivalent Chromium	0.3 mg/L ± 10.0	0.1 mg/L		93.2%	96.8%
Radium 226/228	25 pCi/L ± 10%	5pCi/L			80.0%
Barium	10.0 mg/L ± 10%	2.0 mg/L		94.2%	97.4%
Std. 42 Chlorine Reduction					87.5%

Production Rate: 5.7 gpd (21.58 Lpd)
NSF/ANSI Standard 58 certified to reduce cysts such as Cryptosporidium and Giardia by mechanical means.
EPA Est. No. 090375-MEX-001

The WRO-3500 is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrite in combination measured as N and is certified for nitrate / nitrite reduction only for water supplies with a pressure of 40 psig (280 kPa) or greater.

The WRO-3500 shall only be used for arsenic reduction on chlorinated water supplies containing detectable residual free chlorine at the system inlet. Water systems using an in-line chlorinator should provide a one-minute chlorine contact time before the RO system.

⚠ WARNING: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.

The tested efficiency rating for these systems is 10.30%. Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage. The tested recovery rating is 22.59%. Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.

NOTE: Substances reduced are not necessarily in your water. Filter must be maintained according to manufacturer's instructions, including replacement of filter cartridges.

Test Conditions

Flow Rate	= as noted for filter system
Inlet Pressure	= 60 psi (4.1 bar)
pH	= 7.5±1
Temperature	= 68°F ± 5°F (20°C ± 2.5°C)

Operating Requirements

Pressure	= 40–100 psi (2.8–6.9 bar)
Temperature	= 40–100°F (4.4–37.8°C)
Turbidity	= 1 NTU Max.

The WRO-3500 has been tested for the treatment of water containing pentavalent arsenic [also known as As(V), As(+5), or arsenate] at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section of the Performance Data Sheet for further information.

Testing was performed under standard laboratory conditions; actual performance may vary.

The following performance claims for the WRO-3000 and WRO-3500 are not tested or certified by NSF.

Model WRO-3000 and WRO-3500

Substance	Average Influent Concentration	Average (max.) Effluent Concentration	Average Concentration
Standard 58			
Sulfate	759.5 ppm	7.0 ppm	99.1%
Magnesium	29.0 ppm	0.1 ppm	99.7%
Zinc	10.2 ppm	0.05 ppm	99.5%
Ammonia	3.27 ppm	0.57 ppm	82.5%
Tannin	3.70 ppm	ND (2.0) ppm	>49.5%

Testing performed at 73°F ± 5°F (22.7°C ± 2.5°C), pH of 7.5 and 50 psi (3.45 bar) pressure.

California Department of Public Health certification numbers:

WRO-3000: 3086

WRO-3500: 3087

Arsenic Fact Sheet

Arsenic (abbreviated As) is found naturally in some well water. Arsenic in water has no color, taste or odor. It must be measured by a lab test. Public water utilities must have their water tested for arsenic. You can get the results from your water utility. If you have your own well, you can have the water tested. The local health department or state environmental health agency can provide a list of certified labs. The cost is typically $15–$30. Information about arsenic in water can be found on the Internet at the US Environmental Protection Agency website: www.epa.gov/safewater/arsenic.html.

There are two forms of arsenic: pentavalent arsenic [also called As(V), As(+5), and arsenate] and trivalent arsenic [also called As(III), As(+3) and arsenite]. In well water, arsenic may be pentavalent, trivalent, or a combination of both. Special sampling procedures are needed for a lab to determine what type and how much of each type of arsenic is in the water. Check with the labs in your area to see if they can provide this type of service.

Reverse osmosis (RO) water treatment systems do not remove trivalent arsenic from water very well. RO systems are very effective at removing pentavalent arsenic. A free chlorine residual will rapidly convert trivalent arsenic to pentavalent arsenic. Other water treatment chemicals such as ozone and potassium permanganate will also change trivalent arsenic to pentavalent arsenic. A combined chlorine residual (also called chloramine) may not convert all the trivalent arsenic. If you get your water from a public water utility, contact the utility to find out if free chlorine or combined chlorine is used in the water system.

The WRO-3500 system is designed to remove pentavalent arsenic. It will not convert trivalent arsenic to pentavalent arsenic. The system was tested in a lab. Under those conditions, the system reduced 0.30 mg/L (ppm) pentavalent arsenic to 0.010 mg/L (ppm)(the USEPA standard for drinking water) or less. The performance of the system may be different at your installation. Have the treated water tested for arsenic to check if the system is working properly.

The RO component of the WRO-3500 system must be replaced every 12–24 months to ensure the system will continue to remove pentavalent arsenic.

California Proposition 65 Warning

⚠ WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.