BLUEWATER

A white paper from Bluewater designed to help to stimulate public awareness about creating and sustaining pristine water quality at home and in commercial environments.

# HOW BLUEWATER'S SUPERIOROSMOSIS™ TECHNOLOGY TURNS TAP WATER INTO HEALTHY DRINKING WATER

BLUEWATER THOUGHT LEADERSHIP
WATER INTELLIGENCE

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## IS OUR TAP WATER AS CLEAN TO DRINK AS MOST OF US BELIEVE?

We believe not. That is why we want to give people a level playing field to make informed choices on the water they consume from their taps at home or at work.

This Bluewater White Paper looks at the most efficient technology options that help guarantee tap water meets the growing health expectations of people everywhere.

# EXECUTIVE SUMMARY

**Bluewater offers a comprehensive range of premium water purifiers harnessing patented SuperiorOsmosis™ technology for homes and workplaces that remove practically all contamination not eliminated by public water treatment systems. Easy to install and maintain, Bluewater water purifiers deliver cost-efficient, superior results.**

The ceaseless worldwide sales growth of bottled water shows the strength of consumer fears about the quality of their tap water and the thirst for safe, high-quality drinking water. Despite bottled water costing hugely more than tap water, people buy it because they see it as a healthier alternative. In an industry that did not exist 40 years ago, total global sales of bottled water reached US$50 billion in 2011.

So is tap water contaminated everywhere, even in wealthier countries with legislation governing public water quality and advanced municipal water treatment systems? The answer is 'yes' for several reasons.

A key reason for concern is that traditional public water plants rely on treatment parameters established decades ago based on then available knowledge. Yet the world has evolved dramatically in recent decades.

More people are flooding into our cities, which puts huge pressures on municipal health agencies and water resources. Plus, water treatment organizations are facing significant challenges due to ever more chemicals and pharmaceuticals from household cleaners to hormonal drugs ending up in our surface water.

So how can consumer's cost effectively find ways to enhance the safety of their tap water? Are there technologies to meet evolving threats as well as the desire to enhance health and well-being?

Yes, again. New technology is available to overcome the complex contaminants found in modern tap water. Bluewater's patented SuperiorOsmosis™ technology not only speedily delivers on-demand filtration of contaminants, but also avoids unnecessarily high water wastage.

Today consumers can satisfy their desire for safer, healthier drinking water from their taps – without excessive labor costs and maintenance headaches. This paper explores the tap drinking water challenges faced by consumers and workplaces and examines the many benefits of Bluewater's patented SuperiorOsmosis™ technology.

Bluewater Product Manager Kim Börjesson say Bluewater's SuperiorOsmosis™ technology is an ultimate solution for consumers wanting cleaner drinking water direct from their taps.

# TRENDS IMPACTING TAP DRINKING WATER SATISFACTION

**Demands for safer, better testing, on-demand water.**
Consumers around the world want safer, cleaner drinking water in their homes and workplaces like never before, which is putting a squeeze on public water management authorities. On the one hand, they must meet the demand for safe drinking water in the face of ever more people moving to urban areas. And, they must meet new challenges posed by emerging sources of contamination and the need to manage diminishing water resources.

Over the past 40 years or so, consumers have increasingly sought alternatives to drinking tap water that they perceive to be unsafe or taste bad. The alternatives of choice have been bottled water or domestic filtration systems that extract contaminants from tap water.

Sales of bottled water today exceed a staggering US$50 billion, rising seven percent globally between 2011 and 2012[1] . This in an industry that largely did not exist forty years ago.

Research[2] reveals that Americans on average now each drink 136 liters of bottled water annually, compared to over 243 liters per capita in Italy, 248 litres in Mexico and 49 liters in Indonesia.

Market research shows people buy bottled water because of concerns about the taste, color and smell of their water – or stories in the news about pollution. Increasingly savvy consumers in our information rich world know that all is not as it appears with their tap water. So, they turn towards exorbitant solutions.

BLUEWATER'S PREMIUM WATER PURIFIERS HARNESS PATENTED SUPERIOROSMOSIS™ TECHNOLOGY TO FILTER TAP WATER EFFICIENTLY AND SLASH UNNECESSARY WATER WASTAGE.

**What's really in our tap water?**
Today's traditional water treatment systems often use parameters established many years ago, based on conditions and knowledge available at that time. However, today there are a host of new chemicals, pharmaceuticals and other contaminants that municipal water treatment systems in many areas of the industrialized and developing world were not designed to eradicate.

Not so long ago, WHO noted that only about onethird of the world's potential fresh water can be used for human needs due to 'increased pollution from municipal and industrial waste and the leaching of fertilizers and pesticides in agriculture[3].

In China, and other industrializing countries across Asia, Latin America and Africa, research is flagging up emerging health hazards, including the likes of groundwater arsenic contamination, which stems from industrial mining and environmental conditions.

Altogether, about 140 million people globally consume groundwater contaminated with unsafe levels of arsenic, according to a study published in Science Magazine in August, 2013[4]. The researchers note long-term exposure to arsenic may cause liver and kidney disorders as well as various types of cancer. If you believe this problem only relates to third-world or developing countries, think again.

Just four years ago, a New York Times investigation revealed more than 20 percent of water treatment systems had violated key provisions of the U.S Safe Drinking Water Act. And a probe by the Associated Press National Investigative Team also found a vast array of pharmaceuticals including antibiotics, anticonvulsants, mood stabilizers and sex hormones in the households surveyed, impacting at least 41 million Americans[5].

1 The Beverage Marketing Corporation
2 www.bottledwater.org/files/2011BWstats.pdf
3 www.who.int/water_sanitation_health/takingcharge.html
4 www.sciencemag.org/content/341/6148/866
5 www.cbsnews.com/2100-204_162-3920454.html

# TRENDS IMPACTING TAP DRINKING WATER

### Tap water reality check

The truth is that municipal water treatment plants, just about anywhere in the world, do not remove all the chemical and pharmaceutical residues that are building up in our water supply.

Whenever you take a medicine, what your body doesn't absorb ends up being flushed down the toilet and recycled. These pharmaceuticals encompass a broad spectrum of drugs for managing cholesterol, asthma and pain as well as antibiotic, birth control and hormone medications.

From Swiss lakes to Canadian streams to aquifers deep underground, you will find water being 'poisoned' by a cocktail of hormones, antibiotics and other contaminants in ever growing amounts.

Consider this the next time you drink directly from your tap water; even in the wealthiest nations, municipal water and regional providers adhere only to national, federal and state regulations – which often do not demand testing for trace pharmaceuticals.

In a surprisingly large number of countries, including the USA, water-bottling companies are not obliged to test for pharmaceuticals. And some brands[6] use municipal water that they sell on as 'natural'. What isn't revealed is that systems such as reverse osmosis are used to clean the water, a solution available to you in your own home to clean tap water at a fraction of the cost of buying it bottled.

So can individuals ensure they and their family or guests are not drinking tap water spiked with metals, fluoride and various other chemicals? Can you safeguard yourself against toxins, chlorine, bacteria and viruses, salt, heavy metals, nitrates and fluoride, hard water, arsenic, and poor taste and smell?

The unambiguous answer is, 'YES'!

# WHAT'S IN YOUR TAP WATER?

### Toxins

Pesticides and insecticides are leeched into our water environments despite the best efforts of the agriculture industry, which uses over 70 percent of all the fresh water on the planet (leaving just 30% for earth's 8 billion people).

### Bacteria & Viruses

The WHO says 1.6 million people die every year from diarrhea-related diseases caused by drinking unsafe water and lack of basic sanitation giving free reign to hazardous microbes and bacteria.

### Toxic Metals

Lead, cadmium, mercury and arsenic accumulate in ground water and our bodies, with potentially fatal consequences. Nitrite exposure (usually found where water has been polluted by fertilizers) can cause blue baby syndrome in infants, which may spark heart problems leading to death.

### Smells

Organic and non-organic compounds can cause unpleasant tasting water, which may not be fatal yet is unwanted.

6 www.zerohedge.com/news/2013-07-29/280000-mark-water-look-insidebottled-water-industry

# CHOOSING THE BEST HOME TAP WATER SOLUTION

• Most of us living on the planet now live in urban environments. According to WHO, by 2050 seven out of every 10 people will live in a city (compared to just two out of ten 100 years ago). However, already now huge pressures are being exerted on public water treatment systems to deliver safe drinking water to urban dwellers.

• The question is, what does 'safe water' mean in a world where even the U.S Environmental Protection Agency (EPA) concedes 'threats to drinking water are increasing'7 due to shortterm disease outbreaks and other causes that show 'we can no longer take our drinking water for granted'.

• The EPA conclusion above translates into a call for action for individuals, householders or commercial operations, to take independent action to improve the safety of their drinking water if they feel concerned about what is coming out of their taps.

• There are a variety of different options to treat drinking water at home or in commercial operations such as offices, restaurants and hospitals or research institutions, for example. Treatment systems can be point-of-use (POU) that treat water at a single tap or point-of-entry (POE) that treat water throughout a house.

• Both POU and POE systems utilize a variety of technologies to remove contaminants, including filtration, ion exchange, reverse osmosis and distillation. Depending on the system, prices can range from the relative affordable up into the thousands of dollars.

• Generally speaking, carbon filters absorb organic contaminants in water that impact taste and odor as well as removing chlorination byproducts, some cleaning solvents, pesticides, and metals.

• Ion exchange filters, which need to be regenerated with salt periodically, will help soften water by removing minerals such as calcium and magnesium and may tackle radium, lead and fluoride.

• Reverse osmosis cleans water of a diverse list of contaminants, including nitrates, organic compounds, foul tastes, smells and pesticides, dioxins, toxic metals and petrochemicals.

• Distillation units create distilled water, removing the likes of nitrates, toxic metals and bacteria.

## WHAT CAN CONTAMINATE OUR WATER SUPPLY?

**• Agricultural waste**

**• Animal waste**

**• Pesticides**

**• Municipal solid water**
(containing bacteria, nitrates, viruses, synthetic detergents, pharmaceuticals and household chemicals)

**• Commercial and recreational shipping**
(solvents, gasoline, detergents, raw sewage)

7 www.water.epa.gov/drink/guide/upload/book_wateron-tap_full.pdf

## BLUEWATER'S SUPERIOROSMOSIS™ SUPER EFFICIENT SOLUTION TO TURNING TAP WATER INTO HEALTHY DRINKING WATER

# BLUEWATER SUPERIOROSMOSIS™

Reverse osmosis is widely considered the most effective method of purifying water due to the filtration processes that remove virtually all pollutants including micro-organisms, pesticides, heavy metals and toxins – leaving safer, purer water.

Reverse osmosis technology purifies water by forcing untreated water through a semi-permeable filter or membrane. The membrane blocks chemical, and other contaminants as well as bad odors and tastes. The filter captures everything nasty down to 0.0001 micron (that's around 500,000 times less than the diameter of a human hair).

Traditionally, a drawback to reverse osmosis filters is that they frequently use more water to flush away the contamination filtered out than they provide for drinking, which is frankly wasteful.

However, Bluewater offers a superior, patented reverse osmosis solution that gets rid of nearly all of the nasty stuff, but doesn't burn water at the same rate as competing solutions. Bluewater's SuperiorOsmosis™ technology also ensures on-demand direct flow straight from the water mains.

**Clean water delivery rate**
To highlight the differences between our solutions and competing products, we have evolved a standard called the 'Clean Water Delivery Rate'. This is a way to measure filtration, capacity and efficiency for people who simply want to enjoy cleaner, healthier water from their taps.

The unique Bluewater Clean Water Delivery Rate (CWDR) is designed to give consumers a level playing field for better understanding purification efficiency.

**Benefits of Bluewater SuperiorOsmosis™ filtration:**

- Cleaner, healthier water on demand
- No holding tank for the Spirit and Pro models, which deliver tap water on-demand
- More water, less waste – The Bluewater Pro delivers over 5 liters per minute / almost 7 Cbm per day
- Smart system – Alerts on water quality, pressure leakage, filter capacity and replacement
- Minimal maintenance – automated valves, pumps and cleaning
- Compact design – easy to fit under kitchen sink units
- User friendly

## Premium quality tap water

Bluewater harnesses patented technology to deliver enhanced water quality in a world where tap water taste and safety can no longer be taken for granted. We believe everyone has the right to drink water that is as clean as nature intended. That is why our technology is designed to deliver water for residential and commercial drinking, cooking, washing and other purposes that is free of bacteria, toxic metals, pharmaceutical and chemical residues, and the likes of limescale.

www.bluewatergroup.com

The Gold Seal Trademark from the United States Water Quality Association (WQA) helps connect consumers with water treatment products that have been tested and certified to meet industry standards. WQA's Gold Seal Product Certification Program ensures that the product is constructed or formulated from safe materials, the claims listed on the packaging are backed by test data, and the product will hold up under normal usage conditions.


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