Legally Safe and Totally Safe are Two Different Addresses— *Where Do You Want to Live?*

By Alfie Lipshultz

You go to the grocery store and have a choice to buy a chicken loaded with antibiotics and steroids or a free range raised chicken. One is legally safe and the other is totally safe; which one do you cook for your family?

Your car needs new tires and you have a choice of retreaded used tires or new steel-belted radials. One is legally safe and the other is totally safe; which ones do you ride your family on?

The above comparisons are easily understood by you and your customers. A similar relationship can be made in comparison to tap water and untreated well water versus purified water.

Legally safe?

The *Clean Water Act (CWA)* regulates 91 contaminants. If tap water contains less than the maximum contaminant levels (MCL) of acceptance of each of these contaminants, your water is legally safe. The US EPA is looking at 10,000 other contaminants not regulated but known to be in tap water and they are considering the regulation of 104 more. Hence your water is not totally safe by those standards, otherwise they would not be looking to regulate more contaminants.

The *CWA* initially only regulated 22 contaminants in 1974, many of which have had their MCLs further reduced over time because of continuous laboratory and governmental research. Many of the remaining 91 contaminants that have been identified have maximum contaminant level goals (MCLGs) relative to the lower concentration limits to be achieved in the future.

There is no such thing as safe, safer, safest water. Common sense says then that the water we were told 20 and 30 years ago was 'legally safe' to drink is not considered such by today's standards or likely future standards.

Emerging contaminants

Drugs have been reported in drinking water around the world over the past 10 years, including animal pharmaceuticals and cocaine metabolites. Most recently this phenomenon received the moniker 'emerging contaminants.'

Think about this word 'emerging.' As a new baby emerges into the world, we see the top of the head with more to be exposed. As a new iceberg emerges, we see the tip with more to be exposed. Many of the drugs you read about have been around for a long time and only now are we seeing the first emerging concentrations.

Experience says concentrations will increase further before decreasing. A most interesting point is the identification of animal drugs, pharmaceuticals not fit for human consumption in any concentrations.

None of these emerging drug contaminants are regulated in 'legally safe' tap water and many become even more toxic when they contact chlorine. While it is true that much is unknown about these contaminants, we do know that given the choice of consuming legally safe tap water that contains emerging drug contaminants or not, we choose not!

WHO, calcium and magnesium

The WHO is an agency of the United Nations that acts as a coordinating authority on international public health, primarily relative to infectious diseases and a recommended list of vaccines and medications that all countries need possess. WHO released its report on calcium (Ca) and magnesium (Mg) in drinking water in April 2006 after lengthy meetings with water treatment industry representatives and municipal water authorities.

In that report, *WHO Meeting of Experts on the Possible Protective Effect of Hard Water Against Cardiovascular Disease*, WHO stated that users of POU/POE devices and technology (such as RO, deionization, distillation, nanofiltration, flash evaporation and air-to-water technology), "should be made aware of the changes in mineral composition that arise and the possible consequences for total nutrient intake and human health. For example, those who sell or install these devices may be encouraged to bring to the attention of the users of these devices the possibility of reduced mineral intake and alternative means for replacement.

"Additionally, the manufacturers of these devices may provide a suitable bypass for a portion of this water to maintain some levels of these minerals in water actually consumed (e.g. to a kitchen tap), or develop and add an appropriate remineralizing unit in the water line prior to the point of consumption."

Interestingly, the statement calls for 'manufacturers,' and certainly municipal water treatment plants are manufactured devices, to provide water to homes and businesses. Yet somehow the WHO failed to include them in their report.

Morbidity and mortality

Northern Ireland and Scotland have extremely low TDS and virtually little calcium and magnesium. There are no reports of mineral-related morbidity or mortality. British Vancouver, Canada municipal TDS is six to nine with no mineral-related morbidity or mortality. The Island of Curacao for years was fed distilled water from the Amstel Brewery. When I was there, TDS out of the tap was nine ppm with no reports of mineral-related morbidity or mortality.

WHO has not researched regions of low or no calcium concentrations, nor provided recommendations for introducing inorganic minerals. Eskimos have zero calcium/magnesium in snowmelt water and no reports of mineral-related morbidity or mortality. The US Navy, with over 35 years of reporting on

the use of demineralized water from evaporators, distillers and RO, concludes that there are absolutely no related morbidity or mortality health issues.

For many years, our industry has provided systems to customers living in regions collecting rainwater in cisterns, to assure micro organism safe water from Bermuda through the Caribbean and in regions with minimal water infrastructure. There again are no reports of mineral-related morbidity or mortality. Additionally, rainwater catchments (a buzzword for sustainability) carry no agency recommendation to add mineralizers to downspouts or post cistern.

The nanofiltration treatment, widely used by municipal water plants and growing as approved technology to reduce TDS and hardness, is accomplished without established MCLs for calcium and magnesium. WHO's report also failed to include recommendations for bottled water with minimal or no calcium and magnesium content, nor did they advise against its use.

Water treatment issues

Many articles concern the finding of human- and animal-waste contaminated water with *E. coli* bacteria, *Giardia*, *Cryptosporidia*, *Microbacterium avium* complex and *Microsporidia* affecting citizens and governments subsidizing bottled water. *E. coli* O157:H7 contamination can cause death...and if you don't die, you may wish you had because much of the remainder of your life can be spent taking liver and kidney medication, including dialysis. Government bottled water subsidizing did not include mention of which water to use or avoid, based upon calcium content.

In 1974, the *Safe Water Act* first regulated 22 contaminants. Today there are 91 such regulated contaminants, with many of the original MCLs reduced since inception. Water that we were told was safe 20 years ago is not safe by today's standards and is riddled with MCLG lower standards.

There are currently over 340 recognized chemicals awaiting regulation from a pool of nearly 10,000 identified contaminants. Thus, present water may not be safe by future standards and yet inorganic calcium and magnesium still remain unregulated. This means no established maximum or minimum levels have been determined, notwithstanding US and state government regulations defining various drinking waters to include purification and setting the standards for labeling.

Not one labeling rule includes health risks for lack of calcium or magnesium, nor mandates for injecting them. The US FDA has no regulations for minimal calcium or magnesium content in drinking water or related health risk caveats.

One would think that based upon the years of magnificent laboratory research for infectious diseases and vaccine discoveries, if the WHO were going to make a health claim for calcium and magnesium, they would quantify it. This is especially true in light of hundreds of millions of people drinking low or no calcium or magnesium water in a lifetime, plus 75-plus years of distillation and over 40 years of RO apparatus utilization. But they did not.

Nutritional deficiencies

In Haiti, street vendors sell cookies made of 90 percent clay and soil, with 10 percent being meal. They cannot afford more meal and the clay is a method to stretch out the meal with bulk to stave off hunger pangs.

Clinicians chronically document the nutritional deficiencies in Haiti. Bulging bellies of babies in Haiti and other third-world countries are proof of no nutritional value in water. If the dusty debris at the bottom of a teakettle or distiller had nutritional value, companies would be harvesting and packaging it.

The human body and most animals are not equipped to efficiently metabolize inorganics. Vitamin companies in the early 1950s through 1970s created vitamins with inorganic minerals. End users often saw the complete vitamin in stool the next day.

The development of chelated minerals (inorganic minerals with attached amino acids) create what a plant does to the minerals after they were absorbed. There is an absolutely negative effect of calcium on hypertension medications when consumed with tap water, yet the WHO failed to offer a caveat. However, there are studies that have shown where regions with inorganic calcium and magnesium in extreme concentrations and high pH, there is a correlation to kidney stones.

Global customers

Let's review who are the water treatment industry customers.

a.) States and municipal water plants in recent years have recommended (and purchased) POU and POE units when these plants cannot address certain contaminants or there is only well water. Such contaminants include arsenic, chromium, perchlorate and nitrates.

This type of action will undoubtedly increase due to existing water plants unable to comply with new reduced MCL regulations and a growing global concern about decaying water infrastructure. In the US alone, it is estimated that system upgrade costs will exceed $985 billion (USD) to upgrade.

There are miles of aging, asbestos-lined water mains, miles of cadmium-nickel galvanized pipe and lead pipe leaching contaminants. Blending these water systems together would defeat the purpose for the use of each of these systems.

b.) In the early 1900s, prior to the widespread use of chlorination, the average life span in the US was 35 years. The introduction of chlorine and the germicide's destruction of other agents causing typhoid and other bacterial and viral issues is the single greatest contribution to our modern rates of longevity.

After the second industrial revolution, new emerging organic contaminants found their way into ground water supplies and combined with chlorine to form carcinogens. Blending would defeat the purpose for use of these systems. As a result, many municipalities have begun to inject ammonia to form chloramines, with the objective of preventing trihalomethane compounds (THC).

However, the germicidal strength is less and therefore municipalities must intensify the concentrations to achieve their goal. The result has not eliminated all THCs and instead is aggressively leaching lead out of soldered joints and cadmium-nickel from galvanized piping. Again blending would defeat the purpose for use of these systems.

Over 90 percent of global landfills are unlined, permitting the leachate chemical cocktail to contaminate ground waters. (And new liners only claim a 100-year guarantee; who knows what will be done after time elapses). Many contaminants have been identified and include hundreds of pharmaceuticals…and most are unregulated.

c.) The US EPA is not required to report the finding of unregulated contaminants. The American Medical Association (*Drinking Water and Human Health*) reports knowledge of the effects of many regulated and unregulated individual contaminants in small concentrations, but they do not know the effects of a chemical cocktail which may be exponentially more threatening. It further states, given the choice to consume or not, we should choose not. Blending would defeat the purpose for the use of these systems.

d.) *Crypto* and *Giardia* can be fatal to the immune suppressed (i.e., surgical patients, the sick and elderly and HIV/AIDS infected). Recall 440,000 Milwaukee residents sickened with *Crypto*? Equally of concern are potentially deadly lipopolysaccharide or LPS endotoxins. Blending would defeat the purpose for use of these systems.

e.) Our industry provides security systems in many high-profile facilities and should have higher concerns about sabotage than it does calcium. Obviously, blending would defeat the purpose for use of these systems.

f.) Mortgage-lending entities in many states demand sellers to correct well water supplies using water treatment devices (i.e., for nitrates) in order to sell the home. There is no mention of concerns for calcium, magnesium or remineralization. Of course, WHO's recommendation to blend source water would defeat the purpose for use of these systems.

g.) Physicians, homeopaths and naturopaths often prescribe water treatment devices for chemically sensitive, allergic patients. Yet alum, a commonly used flocculent, causes dialysis dementia for those on kidney dialysis. Blending would defeat the purpose for use of these systems.

h.) Physicians, homeopaths, natur-opaths, obstetricians, bariatricians and many health spas prescribe such systems for the purpose of detoxification. Blending would defeat the purpose for use of these systems.

i.) In times of natural disaster such as hurricanes, flooding and tornadoes, our industry provides pure water systems to recipients in need. Authorities appreciate the collaboration (which is often donated) without concerns for inorganic calcium water.

j.) Consumers wishing to reduce their carbon footprint can purchase water treatment systems in an effort to reduce the consumption and the landfilling of plastic bottled water. They have a choice of adding minerals.

k.) Customers may wish to reduce the expense of bottled water while increasing the versatility available from purified water systems. Bottled water is scarcely used for washing fruits or vegetables. It is also scarcely used for cooking the likes of pasta or for making ice.

Remember, if you are under a boil water alert, you cannot wash your foods in tap water and it is not completely ideal to not wash them at all—ice made from tap water containing cysts remains unsafe. Blending purified water would defeat the purpose for use of these systems

l.) For close to 30 years, some municipalities have spread treated waste from wastewater plants on grounds for irrigation and fertilization. New reports show the bioaccumulation of contaminants in ground water supplies and crops absorbing contaminants (phytoremediation). Blending would defeat the purpose for use of these systems. The crop concerns are another problem.

m.) Neighborhood gas stations and airports are required to replace old metal underground gas and jet fuel tanks with fiberglass tanks. Removal of the metal tanks, some with holes large enough to walk through, clearly are evidence that years of gasoline leakage resulted in miles of underground aquifer contaminated plumes. Blending would defeat the purpose for use of these systems.

n.) Did you ever hear 'everyone lives downstream from somebody else'? Farm runoff includes a multitude of fertilizers, insecticides, herbicides, fungicides, rodenticides and pesticides.

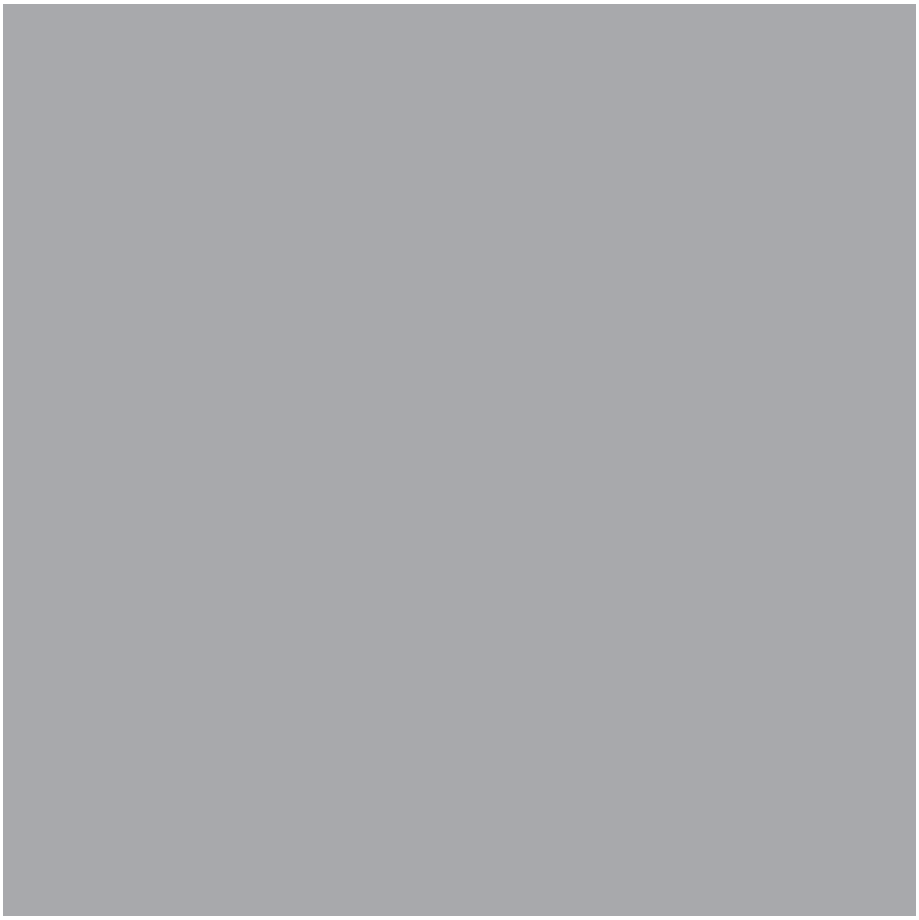
Asphalt jungle runoff includes detergents, waxes, oils and heavy metals. Industrial animal farms create lagoons that contain millions of gallons of animal waste. Heavy industry with legal permits flow billions of pounds of contaminants into the air and rivers. Commercial embalming companies release aldehydes. Blending would defeat the purpose for use of these systems.

o.) Other users include tourist areas, hospitals, neonatal and burn institutes, labs, chip and fiber optic manufacturers, mines, museums, commercial industrial animal farms, dairies, concrete manufacturers, ice companies, bakeries, restaurants, militaries, governments, missionaries in third-world countries, bottled water manufacturers, dialysis centers, oil companies, food processors and ships. Space shuttle and lab crews also recycle urine, shower water and perspiration. And blending is certainly not an option, nor is mineralization a concern.

p.) Millions of satisfied, longstanding customers and many with multiple systems understand that POU/POE is the last line of defense against unregulated and emerging contaminants and/or untreated well water and/or when a municipal water plant has issues. (Did you know that almost every municipal water plant authority is immune from civil actions against them for failing to perform. They may receive warnings and fines from government overseeing agency, but neither you nor I have freedom to sue if harmed).

Aquathin and many industry professionals do not subscribe to blending. We do offer a calcium and magnesium mineralizer as I mentioned above. Generally we receive annual orders totaling approximately three cases. This indicates the public's lack of interest in these unregulated inorganics in favor of providing a totally safe water versus legally safe.

Lastly, I can tell you as Co-Founders of Aquathin Corp., my 81-year-old father and I (57 years old) are the longest users of this technology and the multi-patented Aquathin system sans



mineralizer sans blending and we are in very good health. Click on www.aquathin.com/estar2008.pps.

My father Mitchell is pictured to the left of President Bush (photo taken May 20, 2008 in the Oval Office at The White House) and I am on the President's right. Aquathin is now providing our systems to the third generation: kids who never tasted tap water now serving their kids.

Conclusion

In review of the above, the WHO statement is incorrect. Since the onset of Aquathin, I have always held there should never be an industry like ours for residential water purification. Clean air and clean water should be free. Qualified POU/POE is the last line of defense against old water schemes, mismanagement of these facilities and human error.

Standard government reaction to watermain breaks and the presence of *E. coli* from human and animal waste is to add more chlorine and boil water advisories. Not many things are less appealing than drinking hyperchlorinated boiled, fecal matter.

Other issues include failure of governments to be effective environmental stewards to properly regulate and enforce regulations against industrial polluters. India's industrial rise since the 1950s was due to no regulations against environmental pollution. India welcomed with open arms international chemical manufacturers who blatantly emptied their wastes into the environment. Every river in China is polluted.

Do you recall the Minimoto disaster in Japan? Are you aware there are millions of slaughtered cattle buried during the mad cow scare in the UK and no one knows what the effects on ground water will be? Russia has several regions so polluted they make the Sahara look like an oasis.

If we could flip a switch and stop all pollution, it would take generations for the earth to heal itself and offer clean, pure water and air. Until then, the US EPA has set standards for only a small amount of contaminants out of 10,000 and is not required to report findings of unregulated contaminants. Operation of municipal plants, like any business, is only as effective as the employees that run it.

Another potential crises is looming on the horizon. About 30 to 40 percent of municipal employees are retiring in five to seven years, an unprecedented drain of knowledge from any organization (ref: AWWA).

Today, municipalities are in the spotlight for taking positions to ban bottled water. The AWWA campaigns 'Only Tap Water Delivers.' Some local media confront POU/POE's existence in view of their misinterpretation of the WHO comments for calcium and/or legally safe versus totally safe water.

The public has a choice and constitutional right (life, liberty and pursuit of happiness) to source alternatives for both tap and untreated well water for their own protection, just as much as choosing to use their own personal monies for alarming their homes and businesses for protection of life and property even though a police force exists. The public has voted with their money and they are massively in favor of alternatives.

The residential market for POU/POE and bottled water is consumer driven because of the millions of dollars spent every year for the past 40-plus years, in all media forms concerning all the issues detailed. Like many consumer driven industries, the water treatment industry has its share of buffoons selling pseudo science, preying on the science ignorant.

Customers are offered clustered water, ionized water, catalytic, aura and spin magnetic drinking water, all of which make invalidated and hyped-up claims for curing everything from diabetes and cancer to impotency. Our industry professionals and associations need to assert themselves in a more cogent program against these pseudo science and junk science companies, which detract from the integrity and esteemed members and companies in our industry.

Totally safe also includes our responsibility to protect the public from incompetence and charlatans.

About the author and company

♦ *Alfred 'Alfie' Lipshultz is President, CEO and Co-Founder of Aquathin Corporation and holds seven industry patents. Alfie has published articles in the American Chiropractor and other publications entitled "Pure H2O," "The Fifth Function of Water" and "Pure Water and Medication." Established in 1980, Aquathin produces over 70 patented and trademarked devices for markets around the world through more than 600 authorized Aquathin dealers. Aquathin is an EPA registered manufacturer and is ISO 9001:2000 certified. The company is the recipient of both the prestigious President's Excellence & E Star Award in Export from the US Commerce Department and the Nation's Blue Chip Enterprise Award from the US Chamber of Commerce. Visit the web at ww.aquathin.com/estar2008.pps for additional information.*