

We Are Truly Fortunate

By Jeff Swanson

According to the Department of Health and Human Services Center for Disease Control (CDC): “Water is basic to life and health. Over 1 billion people worldwide have no access to safe drinking water. The United States is fortunate to have one of the best supplies of drinking water in the world.

Although tap water that meets federal and state standards is generally safe to drink, threats to drinking water quality in the United States still exist. Outbreaks of drinking water-associated illness and water restrictions during droughts demonstrate that we cannot take our drinking water for granted”. Please read the following as I hope that it may shed some insight as to where we used to be in history and where we could be at a moments notice due to natural or man-made catastrophic events still unbeknownst to our future.

Imagine a typical day and what our lives would be like if we woke up and had no running water in our homes. What if the only available water was more than a mile away in a small pond? In the morning, there would be no shower or tooth-brushing; no coffee to start your day. In fact, you would have to start your day with a family hike: carrying buckets and jerry cans, filling them up at the pond, and lugging these heavy containers home – roundtrip, about 2 hours. Since you could only carry maybe 20 or 30 gallons per trip (about 250 pounds), you’d have to think twice about using water for bathing. And you would likely have to make several trips each day. So if the kids have to be at school and you have to be at work by 8 a.m., you’d probably have to start your hike by 5 a.m.

Without showers or use of a washing machine, the entire family would begin to smell a bit ripe after a day or two. You would have to lug the dirty laundry all the way to the pond for a wash and then lug the wet stuff back to dry. Cooking and washing dishes would also be a chore.

Many of us don’t even think about the number of daily activities that depend on the accessibility of clean water. But the real challenge in this scenario is to realize that the water you are spending so much time to tote back to the home is teeming with

bacteria, parasites, and waterborne diseases. The water that you are expending so much time and energy to obtain is poison and is literally killing you.

This is a reality for about 1.1 billion people in the world. It is estimated that as many as 5 million people die every year of water-related illnesses and 1 child dies every 15 seconds (*World Vision Magazine*).

Water is the connection to illnesses not only associated to drinking the water itself. Certainly we have historical documentation of **waterborne** diseases that have almost wiped out entire cultures at a time. The drinking water was contaminated by human, animal, or chemical waste. The most common examples are diarrhea, cholera, typhoid, polio, and hepatitis A. An estimated 1.6 million deaths are due to diarrhea each year. 12 million people are affected by typhoid fever each year.

Water-Related diseases are usually caused by being bitten by insects (mosquitoes or flies) that feed and breed in water. While on vacation last fall in the South Pacific, the problem with dengue fever (carried by mosquitoes) was brought to our attention by the many posted signs warning of it as well as several people that we came in contact with. The high fever and flu-like symptoms usually keep a person sick for several weeks. Malaria kills an estimated 1 million each year. River Blindness is caused by worms living in fast moving rivers and has affected around 18 million people. 300,000 of these people are irreversibly blind. 99 percent of these people live in Africa.

Water-Based diseases are caused by ingesting organisms that spend part of their life cycle in water. The Guinea worm that exists mostly in West Africa is ingested when people drink stagnant water. They unknowingly ingest the microscopic larvae which can cause long term illness. The parasite lives inside the body for a year, growing into a spaghetti-like worm. When the worm escapes by puncturing the skin from the inside, the pain is excruciating. Victims must endure the worm’s emergence for up to three months. They are usually incapacitated by fever and nausea. To speed things along, people carefully wind the worm around a stick as it emerges, being careful not to pull too hard. If the worm breaks, it will retract into

the body, causing severe inflammation. Most sites where worms emerge get infected, and the worst cases result in permanent crippling or death. Bilharzia is another human disease caused by parasitic worms called Schistosomes. Over one billion humans are at risk worldwide and approximately 300 million are infected. Bilharzia is common in the tropics where ponds, streams and irrigation canals harbor bilharzia-transmitting snails. Adult Schistosomes worms are about 1 cm long and hang out in the small veins that carry blood from the intestine to the liver. The worms feed on red blood cells and dissolved nutrients such as sugars and amino acids. This can cause anemia and decreased resistance to other diseases. Eventually the results lead to liver enlargement and malfunction as well as kidney damage.

Water-Scarce diseases are typically due to poor hygiene or washing with contaminated water. Scabies is a very contagious skin condition that is caused by a mite. The rash is extremely itchy and is often called “the itch” or “the seven-year itch” and is difficult to diagnose. Trachoma is caused by an organism called Chlamydia trachomatis. Through the discharge from an infected child’s eyes, trachoma is passed on by hands, on clothing, or by flies that land on the face of the infected child. The World Health Organization (WHO) estimates that 6 million people are blind today due to trachoma. Water-scarce diseases should also not exclude the existence of our little friends the lice as well.

It’s always there isn’t it? - Water I mean. Simply turn on the faucet and out comes abundant amounts of certifiable clean and safe drinking water. The agencies making the rules that maintain high standards for drinking water in our country must have thought it through that in order to perpetuate a society with a high quality of life must be done so through maintaining high water quality standards – since water is life isn’t it? I have always said as an operator that it is always easy to “fix” a problematic water source – but it is nearly impossible if there is no source at all.

While corresponding with my son during his service as a United States Marine - following the events of 9/11, he mentioned that during a peace keeping mission (prior to entering Afghanistan), his group spent some time in a small community called HolHol close to Djibouti, Africa. In the small

village, a water tank truck would make a weekly visit. During that time, the tanker truck (approx. 3,500 gallons) would fill up what looked like small horse troughs. Every drop of water had a purpose. Although it appeared rather turbid it was used for bathing, washing clothes, cooking, and drinking. He was amazed by the degree of poverty. What astonished him the most was when water spilled or leaked on to the ground, people would stoop down and lap up the water that ended up in the muddy puddles around the truck and troughs. We measure the leaks in our public water systems in sometimes staggering amounts.

The sales for bottled water are estimated to be between \$50 and \$100 billion (US) annually and increasing approximately 7 to 10 percent annually. In 2004, total sales were approximately 41 billion gallons (in less fortunate countries, the estimate to bring safe drinking water to a community is roughly \$2 per person per year). The reason I bring this up is that some U.S. companies are “bad mouthing” the public entities. I think it makes for an even more interesting deliberation when considering the comparisons between murky pond water and public drinking water – and public drinking water and bottled water. Here is what a recent article said in a health publication, “Obtaining pure water in our diets is absolutely essential to good health, but many of our municipal water supplies are not pure. In fact, a community water supply can be one of the greatest sources of microbial contaminants, chemical pollutants, and substances which interfere with cell function.”

Are we fortunate? You tell me. I travel the entire state of Oregon, the United States, and the world. In my travels, I trust drinking tap water in the U.S. more than any other country in the entire world. In fact, when traveling abroad, it is the only time that I **do** buy bottled water and sometimes I don’t trust that either. As I mentioned earlier, our situation could change at any time if we are not diligent in our planning and protection of the valuable resource that we all would agree is the “essence of life”. Natural disasters can have an immediate and lasting affect in our culture. The prospect of terrorism affecting our infrastructure is more of a concern than ever. When we look at Capacity Development and the three basic components of managerial, financial, and technical capabilities - the position of “financial” capabilities seems to affect the most

crucial aspects of our water systems. While speaking at board and council meetings, I find that the argument of increasing water and sewer rates face the communities with the greatest challenge – make everyone happy or meet the needs of the community? We have the water don't we? We have abundant amounts, don't we? It's always the highest quality isn't it? Maybe the question should be, "Will we have it forever?" Many people in our world have so little water – so for now, I feel very fortunate AND thankful... "Got water?"