

Tap Water is Fine, Really

Converting bottled water drinkers to drinking tap water at Rutgers University

Tag Words: bottled water, tap water, consumption

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Summary (LS)

A common belief that we live by is that bottled water is much safer than tap water. In reality, there is no guarantee that bottled water is any safer than tap water; in fact, bottled water is less regulated due to the different standards of the EPA and FDA. Many tests and studies observing the levels of chemicals and contaminants in various drinking waters have shown that drinking from the tap is beneficial to one's body as well as one's wallet. It is also much better for the environment that we stay away from bottled water – many of the plastic bottles that do not make it through the recycling process ends up breaking down into harmful compounds such as benzene and phthalate. Our service project focused on spreading awareness regarding the benefits of drinking tap water rather than bottled water. We worked with Take Back The Tap to promote the movie screening of *Tapped*, a 2009 film documenting facts and debunking myths behind tapped and bottled water. We also spent a day running a tap water vs. bottled water taste-test on Cook Campus, showing people with their own taste-buds that there is little difference (if any) between water from the bottle and water from the tap.

Video Link

The Truth Behind Tap Water: <http://www.youtube.com/watch?v=BNhJlOv3C1Y>

The Issue: Tap Water

Introduction (EM)

Natural springs; bubbling brooks; healthy individuals; successful athletes. All have promoted the ideal that bottled water is one of the finest “inventions” to come about in the last few decades. Bottled water has a simple and accurate naming convention: it is plain water contained within a plastic bottle. These bottles are primarily composed of polyethylene terephthalate (PET), a long chain polymer of ethylene glycol and purified terephthalic acid. In the 70s this compound gained popularity in the pharmaceutical industry as a pure enough carrier to keep pills and solutions away from contamination. The bottle industry saw these characteristics and, after making some adjustments, turned it into the lightweight, clear, flexible material we see today (2).

In the early days of bottled water, the idea was not very popular and took a while to get off the ground. The thinking was simple: “Why pay for something that seems to be just a bottle of fluid that comes out of my faucet?” This mode of thinking was shown quantitatively early on in the fledgling sales. It did not help then that in the early 90s there was a huge public outcry that this bottled tap water, which was beginning to gain popularity (beginning in 1986), contained contaminants such as benzene, a potent carcinogen. Michigan congressman John Dingell even launched a federal investigation into the safety practices of many companies, including Perrier, who initiated a worldwide recall of their water after the benzene contaminant was found in their product.

The buying power of bottled water continued to climb though. In the mid to late 90s, repeated contamination of municipal water supplies around the nation propelled bottled water to be thought of as “the safe alternative” to contaminated public water. This mindset is still seen today, as stores fully and consistently sell out of bottled water when there are even the remotest of threats concerning weather that may affect the municipal supplies. In 1997, the industry sold over 3.4 billion gallons of water in bottle form, netting a wholesale total upwards of \$14 billion. Some companies, such as Aquafina by Pepsi, have seen yearly sales increases of 126%, translating to more than \$54 million in revenue. As bigger soda companies, such as Coke and Pepsi, began striking deals with universities and certain amusements in cities (such as baseball parks), their bottled water accumulated and has mostly maintained a monopoly over those areas.

This leads to even bigger sales for these beverage giants (1). According to mineralwaters.org, as of now there are over 3,400 brands of bottled water being sold in 130 different countries, all with varying mineral content, health warnings, and places of origin (3).

While the market is still incredibly strong (growing ~8-10% per year), certain groups are trying to get the public back on to the side of tap water. These lobbying groups, which claim bottled water has various detrimental effects on humans and the environment, are beginning to gain popularity and effect overall sales nationwide. Also, the re-emergence of portable items such as Nalgene bottles and the invention of such filtered bottles as Bobble are gaining popularity, leading to decreased bottled water sales and an increase in water fountain or tap water usage (1).

1. "NRDC: Bottled Water - Chapter 2." *NRDC: Natural Resources Defense Council - The Earth's Best Defense*. Web. 28 Feb. 2011.

<<http://www.nrdc.org/water/drinking/bw/chap2.asp#note39>>.

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Bottled Water: Pros and Cons (EM)

It is not without reason that bottled water is continually rising in popularity despite some of the pitfalls featured above. One reason is its consistency. Unlike tap water, which varies in temperature and taste depending on the ions that may have lasted through filtering, bottled water companies set their products through the same filtration processes for every batch that hits the market. Therefore (providing everything goes as planned), the bottle one buys from the vending machine will taste the same as the one from the street vendor will taste the same as the 54-pack one gets from COSTCO.

The figures recently have begun to change, but the fact that bottled water is the most convenient source of water is among its top qualities. How many vending machines are there, not only per campus building, but per general city building? Assume each one has at least 1 option for water, and you are talking about serious availability. According to Rutgers in 2004, Coke had a deal with the University for \$1,000,000/year for ten years. This gave Rutgers, among over \$600,000 in secure and extraneous deals, \$400,000 in vending machine sales to start, and then a 40% commission on all subsequent sales (1). That is clearly incredible motivation for Rutgers to put up vending machines for Coke products, which include Coke's Dasani water, wherever possible. Bottled water, partly because of this, requires very little labor. It is very easy to throw in the \$1.50 and have a cold bottle of perceived purity come tumbling out. Just unscrew the top to enjoy. It does not need to be refilled, there is no fuddling with filters; just consume and buy another which, as stated above, is difficult *not* to do.

While bottled water has its benefits, there are reasons it has come under fire recently and why there are groups sprouting up to save tap water and eliminate the bottle from campuses and towns. For one, as mentioned previously, contamination and impurities have been an issue. While the carcinogen contamination was perhaps the biggest hurdle the bottled water companies had to overcome, others have looked into their practices and claims and found that the "pure spring water" many are claiming actually contain far less (if any) untainted water.

Tests have shown that at least 25% of the water that comes in bottles is from a municipal source (the same as tap water), and some estimates put it as high as 40% for all bottled water brands. While the companies may claim they have natural spring water, it may only represent a small fraction of the total product. Other companies are blatantly lying, claiming their product comes only from naturally sources. Tests have shown chlorination treatment, which is purification by addition of chlorine, a known antimicrobial agent. This treatment is the same used in municipal water supplies. Aquafina, Pepsi's water brand, contains *only* water from 11 different municipal sources (2). While Pepsi did not hide this fact when confronted, the sun and mountains on a pure blue label paint a different picture to the unwary consumer.

People are actually paying an incredible amount of money for this bottled tap water too. As described above, the water bottle industry has grown exponentially since the mid to late 90s, all because of consumer interest. This pricing presents another disadvantage to bottled water. Individuals would be in an uproar if their water bill went up a few dollars a month because they drank more tap, but people seem to just shrug if the price per bottle of water goes up a quarter. However, if one crunched the numbers, a \$1.50 bottle a day would run you over \$540 a year, and even one bottle a week would increase spending by almost \$100. In California, it has been reported that bottled water costs about \$0.90 per gallon which, if sold that way, seems like a very good deal. But tap water, at \$1.60 per *thousand* gallons, represents a price differential of 1/560th the cost of buying that much bottled water. Some imported waters, such as Source, Equa, and Finé, can cost 10,000 times as much for the same volume as tap water (2). America is among the top 3 nations in the world in terms of imported bottle amounts (3). Since imports lower a nation's Gross Domestic Product (basically, the economy as a whole), it could be said that this import of bottled water is contributing to the declining economy.

One can ask the question too, with all this imported bottled water, not to mention the domestically produced bottles, why is it that the bottles are not overrunning the streets and parks? While plastic bottles are technically recyclable, that does not at all mean they will end up back in the factory to be reprocessed and reused. Unless a very specific and very efficient trash sorting service is in order to separate recyclables, most every bottle thrown in the trash will instead wind up in a landfill or ditch, which is a third issue with plastic bottles. A study published in *Biodegradation* journal tested how well the plastics that make up bottles breaks down in different water depths. The low estimate was 5-10 years until the plastic degraded, but only if it was buried in sediment. In the water column or on top of sediment, chemical films developed and the estimates were unclear (4). Plastic bottles are said to make up 12% of the *total* trash that has accumulated in the United States. That does not include products such as plastic chairs, plastic fibers or plastic bags; it means more than 1 out of every 10 pieces of random trash is a plastic bottle.

A major concern of all this accumulation of plastic garbage is what the breakdown will release into the environment, a fourth factor for why plastic bottle use is ill-advised. Plastic is made of many naturally occurring elements, such as petroleum, but like benzene, a lot of naturally occurring compounds are very dangerous. Phthalate is among the worst byproducts leaching out of plastic bottles. Phthalates are esters of phthalic acid, and organic molecule used as a plasticizer (something which is added to plastics to increase flexibility, transparency, durability, and longevity). Endocrine disruption and birth defects, among other as-yet-definitive effects of increased phthalate exposure on pregnant women such as ADHD, autism, and obesity, show that phthalates can be linked to many of these disorders, even if as just a trigger to an underlying illness (5).

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Tap Water: Pros and Cons (LS)

Tap water has long been thought to be less healthy and more risky to consume. However, Natural Resources Defense Council (NRDC) attorney Mae Wu stated in 2008 that the U.S. has "one of the best and safest public drinking water systems in the world." Tap water in the U.S. is tested more frequently for safety due to requirements set by the U.S. Environmental Protection Agency (EPA) in the Safe Drinking Water Act (SDWA). Contrarily, bottled water is listed as a food product and thus has requirements set by the Food and Drug Administration (FDA) in the Food, Drug, and Cosmetic Act. In addition to different requirements, FDA does not regulate all brands of bottled water, while all national drinking water systems are covered by the EPA. An estimated 40% of bottled water is regulated by the FDA, and some of that relatively small percentage has tap water – sometimes additionally treated, other times not – as a water source.¹

Tap water is a readily available source of drinking water. The SDWA applies to all public water system across the nation, thus providing regulated, safe-to-drink water to all Americans. However, it should be kept in mind that the SDWA can only regulate *public* waterways, and thus private wells are not covered by the SDWA.² In developed countries, particularly in the U.S., public waterways are regulated to ensure drinking water quality and health safety. Due to the strict standards set by the EPA, the health of public water consumers is nearly guaranteed. Drinking from the tap is also more eco-friendly. Whether a plastic water bottle is reused, or a stainless steel bottle is used, drinking from the tap means that one can always refill their container of choice at any public water source. By drinking from the tap, there is less drinking from the bottle, which can help reduce the amount of plastic bottles thrown out.

It is also much cheaper to drink from the tap than to rely on bottled water. The price of bottled water typically ranges between 0.25 and 2 per bottle, while tap water costs less than a penny.³ A study run by the Environmental Working Group in 2008 ran multiple popular brands of bottled water through laboratory tests, checking for chemicals and other contaminant levels; the study revealed that bottled water can contain complex mixtures of industrial chemicals that were never tested for safety, and may be in fact no cleaner than tap water.⁴ In addition to the extreme difference in prices, the money from the sales of water bottles typically goes to things other than the water itself, such as bottling, shipping, processing, marketing, and other various expenses.⁵ With the developed and regulated public waterways available, there is little effort required on the

public's part to fill up containers with clean drinking water. Unless the average consumer is concerned about the small possibility of contamination, it does not take much effort or time to fill up a bottle.

However, the fear of drinking tap is not without reason. There have been outbreaks of disease in cities where the public water quality was not well regulated. Another reason the public tends to have a negative view point of public drinking water is due to lack of knowledge. If the public do not know where, how, and how well the water they are drinking is being treated, then they would be less likely to trust it. Without proper and/or controlled treatment, water can be contaminated with bacteria such as E.coli, which is known for causing food poisoning among other diseases.² This can be a cause of concern to individuals who may have a weak immune system or are particularly susceptible to diseases. The unknown quality of a water source is also a cause for concern as contaminated water can lead to an outbreak of a disease.

Water cleanliness is extremely important, particularly in under-developed countries. If the water source is too close to contamination, the water source may get polluted. Sewage, human fecal pathogens and parasites are the most common sources of microbiological contamination.⁶ Oil spills and livestock can also affect the water quality of a source, as organic material can seep through soil to reach water sources. There is also the case of chemical/physical contamination. Tap water can have a high level of metal (e.g. copper, lead) due to plumbing pipes. Again, this can be a cause of concern to individuals who may have a weak immune system or are particularly susceptible to diseases. Along the lines of a high chemical presence, tap water also has a high level of fluoride. While the fluoride helps prevent tooth decay, there is a rising concern that the amount of fluoride used to treat the tap water is in excess of what the human body requires.⁷

References:

¹ http://www.nrdc.org/water/wat_08091001.asp

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³ http://en.wikipedia.org/wiki/Bottled_water

⁴ <http://www.ewg.org/reports/BottledWater/Bottled-Water-Quality-Investigation>

⁵ <http://www.nrdc.org/Water/Drinking/bw/chap2.asp>

⁶ http://en.wikipedia.org/wiki/Drinking_water

⁷ http://en.wikipedia.org/wiki/Water_supply_and_sanitation_in_the_United_States

Solutions (SW)

There are various ways that one can make tap water more appealing and drinkable. Bottled water consumption over a long period of time can be very expensive. Bottled water also produces wastes at an alarming rate. Plastic is not degradable in wastelands. When bottles go to the wasteland they can sit there for decades without being degraded. So when people drink bottled water or drinks in plastic and they forget to recycle nature is affected. Bottled water contains harmful chemicals although most people would question this statement. Drinking bottled water can cause some dangerous health effects just like drinking tap water. Some people are not aware that most bottled water has a high pH level. pH levels are the acidity or basicity in an aqueous solution. Pure water should have a pH level of at least seven. Seven is considered to be neutral

and is recommended when drinking the recommended eight glasses of water a day. A pH level lower than seven would be considered highly acidic. Water in plastic containers is highly acidic with levels lower than seven. The FDA does not have to monitor pH levels in water bottles only the impurities. So while these companies claim that the FDA approves their water it has neglected to explain exactly what the FDA has approved.

However, tap water is not only not acidic, it is safer to drink than bottled water. Many people in society only use tap water for cooking and even in those cases the water is boiled in hopes of killing bacteria and parasites that are not visible to the naked eye. However there has been advance in technology has made filtering tap water more efficient than in the past. Pathogens that are water borne that once took the life of many people is no longer considered a public health issue. When tap water was considered unsafe, bottled water became extremely popular. People believed that bottled water was going to save them however with high levels of acidity and plastic waste bottled water should no longer be an option. Tap water goes through many rigorous processes in order to insure purification before entering homes. Most water in residential areas goes through a process of reverse osmosis. This process has been very effective that even bottled water companies have adopted the technique.

However, bottled water is not as healthy as most people would think it is. Some bottled water also contains some of the same contaminants that are found in tap water. Not all bottled water has an hundred percent accuracy for purification. But the likelihood of someone being scared that bottled water is harmful is slim. Although people in society are not aware that bottled water is simply tap water from different areas that went through purification. Companies such as Aquafina, Poland spring, Dalsani have labels on their products indicating that that were taken from different municipal areas and purified. So just because a person purchases water in a bottle he or she should not feel that this water is safer than tap water. People in society tend to believe the media and what they consider healthy.

Once tap water is purified it is healthier than water in a bottle. Tap water has many minerals in that bottled water eliminates due to extraneous purification processes. The minerals in tap water are normally determined by the rocks that the water comes in contact with. Once these rocks break down in the water the electrolytes are then transferred to the tap water. Tap water contains minerals such as copper, magnesium, potassium, sodium, calcium. However, most people tend not to like the taste of copper, and calcium. But the other minerals in water are not dangerous and people can tolerate the taste because they make the water taste better. Bottled water does not contain these natural minerals unless they are added to the water. Artificial minerals and over processed water, and expense a reason more people should consume tap water.

Tap water is very inexpensive to the consumer. You can either drink tap water as it comes out the facet. Or you can buy filters to filter the more than it is already. Because drinking tap water is such an widely discussed topic there are many filters in the market that make drinking tap water safer than bottled water. The filters today take away the harmful chemicals but allow the minerals to remain in the water. Filters tend to be readily specific on taking away chlorine in the drinking water. Chlorine in drinking water can be really harmful. Chlorine is put into tap water to try and reduce harmful microorganisms. The chlorine that is inside of the tap water is needed to kill the microorganisms but right before consumption can be eliminated. It is just unfortunate

that chlorine is used as an extra precaution to protect our bodies. Tap water has many benefits although methods used to treat this water are less than favorable to society. Chlorine in tap water with increased amounts can cause an increased risk of cancer. But just because no one has mentioned chlorine being in bottled water does not mean that this substance is not present.

Tap water is something that is already free and readily available to most people living in the United States. Tap water does not come with an extra cost. The only thing that will cost the consumer is actually buying filters for the water to go through an extra purification process. But the filters are not expensive compared to the continued price of buying water bottles to get drinking water. Tap water comes with more minerals than regular bottled water and it is half the price. Although a filter may cost about seven to ten dollars the filters last about three months and there is no worry about having to recycle the bottles.

Most people think that bottled water tastes so much better than tap water but some bottled water has some components of tap water in them. Tap water is not as bad as most people think when treated properly. Tap water has more minerals than bottled water. The benefits are not only to the consumer but to society as well. When bottled water is consumed it decreases the amount of plastic that has to be recycled. Or the large quantity of plastic that ends up in the landfill. Tap water has many health benefits because it gives you pure electrolytes without artificial adding. Tap water is better for society in all aspects. People in society would probably cut down on their consumption of other beverages if they knew that they did not have to go out and spend money on water bottles every week. More people should drink tap water because it has many health benefits to society and to the consumer compared to bottled water which is simply tap water with a label.

The Service Project: Raising Awareness (LS)

Our service project focused on the spreading awareness regarding the benefits of drinking tap water versus bottled water. Initially, we planned on helping Kristen Clarke, a RUSA Committee chair member in charge of heading the water filling stations project, but when we contacted her, we were notified that the project was at a stand-still. After a slightly discouraging start, we were told to contact Eric Struble, the Rutgers representative for Take Back The Tap, who was more than willing to tell us more about what we could do to promote tap water. He informed us that the biggest help we could provide immediately was to spread the word and invite students to the *Tapped* movie screening in early April. Eric also encouraged us to continue spreading the word about the misconceptions of tap water. We decided to spread the word with a more grassroots approach by filming a video and submitting it to the program RU On Tap. RU On Tap is a collaboration project between Rutgers Athletics and New Jersey American Water to promote awareness to the general public about the benefits of tap water. The RU On Tap project focused on making “a difference for the environment by helping to reduce the consumption of bottled water,” which paralleled Take Back The Tap’s intentions perfectly. Additionally, the project encouraged students - others in our generation - to be proactive and creative about educating the public. We decided to work on the Cook campus for our video project. Luckily for us, there was a wide array of activities all around campus the day, which provided us with a large pool of interviewees. Between normal students, athletes, and Medieval re-enactment folk, we recorded many different viewpoints on the consumption of tap water versus bottled water. By entering this

video into the RU On Tap project, we hope that our experience can be enjoyed and educational for all who watch it.

(SW)

My group wanted to see whether students on campus could distinguish bottled water from Brita filtered tap water. So we set up our demonstration outside of the cook campus center on a Saturday afternoon. We had one cup titled A and another cup titled B which had Aquafina in one and Brita filtered water in the other. We then asked the students to tell us what water tasted better. Out of the students that we tested half of the students thought that tap water tasted better. When we told them that it was tap water that they said tasted better they were completely shocked. Maybe shocked because most people believe that tap water has a horrible taste. People generally associate tap water with water from foreign countries. However these students when they noticed that it was tap water said that they would probably drink tap water more often considering there is not much of a distinct difference. Then we walked around the campus and interviewed students asking them do they drink bottled water if so why and if not no why not. Most students explained that they do not drink bottled water because it is too expensive. That was the most common answer among college students. When asked do they drink tap water some students did say no but they explained it is because they do not have a filter for the water. When we said that most bottled water is simply tap water from many different areas these students were also surprised. The interview and experiment was very informative. One because I was unaware that so many people drank tap water some unfiltered. Two some students only drank bottled water because it was more accessible when going to class; and because they were unable to filter tap water in dormitories. Furthermore, there seems to be a lot of people who drink tap water but the number need to be increased and information about tap water needs to be displayed more publicly to the member or society.

Appendices

*Some Key Differences Between EPA Tap Water and FDA Bottled Water Rules**

Water Type	Disinfection Required?	Confirmed <i>E. Coli</i> & Fecal Coliform Banned?	Testing Frequency for Bacteria	Must Filter to Remove Pathogens, or Have Strictly Protected Source?	Must Test for <i>Cryptosporidium</i> , <i>Giardia</i> , Viruses?	Testing Frequency for Most Synthetic Organic Chemicals
Bottled Water	No	No	1/week	No	No	1/year
Carbonated or Seltzer Water	No	No	None	No	No	None
Big City Tap Water (using surface water)	Yes	Yes	Hundreds/month	Yes	Yes	1/quarter (limited waivers available if clean source)

*Table from <http://www.nrdc.org/water/drinking/nbw.asp>

Editorials

Lesley Sun

Sent to Star Ledger (3/23/11)

Bottled water is truly an ingenious invention – portable and accessible clean drinking water. However, is your money well spent buying crates after crates of bottled, supposedly clean water? People tend to avoid drinking water from the tap, due to health concerns and the unknown quality and cleanliness of said water.

In contrast to popular belief, tests have shown that there is no guarantee that bottled water is any cleaner than tap water. Results have shown that at least 25% of the water that comes in bottles is from a municipal source (the same as tap water), and some estimates put it as high as 40% for all bottled water brands. Aquafina, Pepsi's popular water brand, contains *only* water from 11 different municipal sources. Tap water is tested more frequently for safety due to requirements set by the U.S. Environmental Protection Agency (EPA) in the Safe Drinking Water Act (SDWA), unlike bottled water is listed as a food product and thus has requirements set by the Food and Drug Administration (FDA) in the Food, Drug, and Cosmetic Act. In addition to different requirements, FDA does not regulate all brands of bottled water, while all national drinking water systems are covered by the EPA, thus providing regulated, safe-to-drink water to all Americans. By following this logic, tap water is more likely to be safe and quality-controlled than the average bottled water.

Then there is the environmental aspect of this problem. The act of recycling has been encouraged for years, and yet there are still those who carelessly toss plastic bottles in trash or out onto the sidewalk. Plastic bottles are said to make up 12% of the *total* trash that has accumulated in the United States. That does not include products such as plastic chairs, plastic fibers or plastic bags; it means more than 1 out of every 10 pieces of random trash is a plastic bottle. This problem can be avoided by investing in a filter – Brita provides easily replaced filters for pitchers, sinks, even refrigerators, that last for around two months – and a sturdy reusable bottle, such as a Nalgene. More recently, Bobble bottles - bottles with their own replaceable filters inside – have been gaining popularity.

So before you pop money into a vending machine for water, think of the money and the waste you could save in the future. Buy a filter and find a good reusable bottle. They will last you much longer than any old water bottle from the vending machines.

Eddie Marks

Sent to Hillsborough Beacon (3/23/11)

Composing over 80% of the surface of the Earth and 70% of all living matter, water and its purposes cannot be understated as truly important. Nations discuss climate change in regard to glacial melting and rising sea levels; finding water among the stars is of top concern for every

space program; but very little concentration is put into water safety on this planet and in this nation.

Certain efforts are of course being put forth now to help those less fortunate across the globe. The Red Cross is putting in aid towards African and Indian villages plagued by water-borne diseases, and for-profit companies are putting forth devices such as Filter Straws, cheap long straws that filter out very small particles to allow these sort of villages to drink their contaminated but lone source of water. These are valiant efforts, and have helped severely diminish the prevalence of water-borne diseases in many developing nations.

Regulations though need to be put forth in these United States. Water bottle companies are in constant competition with municipal suppliers for dominance over the drinking water market. Like many other attempts to gain the monopoly in a business setting, companies battle while the individual suffers. For instance, the Erie Canal was an engineering marvel that took almost 20 years to build by hand. Its purpose was to form a trading route west of the Appalachians to provide a safe and cheap way to bring products to market. The endeavor came at the expense of the lives of hundreds of Irish immigrants, who were buried along the side of the canal where they fell as digging continued.

While perhaps not as extreme, the water bottle companies are building their own Erie Canal to increase profits and bring down prices, at the expense of the consumer. Cheap plastics and looser purification methods have led to sickness and death. The big push for bottled water came in the mid-1990s, when repeated contamination of municipal water supplies caused the public to boil all tap water or resort to bottled. Eventually the idea stuck that bottled water was the “safer” alternative to municipal water. This is not by any means true. Before the contamination of the municipal supplies, bottled water was linked to an increase in cancer because benzene was discovered in the water, causing a worldwide recall of bottles from companies such as Perrier. It has also been found that most all bottled water not only comes from municipal or public sources, but goes through the same decontamination processes as municipal water sources.

The bottling process itself increases both the danger and price to the consumer. Phthalate is among the worst byproducts leaching out of plastic bottles. Phthalates are esters of phthalic acid, an organic molecule used as a plasticizer (something which is added to plastics to increase flexibility, transparency, durability, and longevity). Endocrine disruption and birth defects, among other as-yet-definitive effects of increased phthalate exposure on pregnant women such as ADHD, autism, and obesity, show that phthalates can be linked to many of these disorders, even if as just a trigger to an underlying illness. To buy these plastic diseases filled with the same water as one's faucet, individuals are paying astronomical amounts. One county in California pays 560x as much bottled water per gallon as tap. Not to mention imported water, which can run upwards of 10,000x as much per same volume as tap.

It is not without reason that bottled water has become popular, as it seems pure, is portable, and is found virtually everywhere nowadays. But each one of these positives can not only be outweighed by a negative, but can be countered with a positive by tap water from municipal sources that have yet-to-be-identified downfalls. Bottled water is portable, but so is a Nalgene or Bobble water bottle, which are sturdier and will not leach chemicals with continuous use. As

shown above, bottled water contains many municipal sources of water (Aquafina from PepsiCo does not even argue that it contains *only* municipal sources), which is what you would get from your sink or fountain. And Bobble actually comes with a filter (as does an attachment for Nalgene at a separate cost), which subsequently diminishes that many more contaminants, making tap *more* pure than bottled. And lastly, while the expensive plastic bound water is stored in a glowing chilled money box in every building, I challenge one to find one of these machines that does not have a water fountain or sink within 10 yards. With your Bobble or Nalgene attachment, those extra few yards might have just saved you a trip to the E.R.

Shakira Williams

Sent to the Targum (3/23/2011)

I am writing to express my concern with students here at the university not drinking tap water but rather purchasing bottled water. Most students at the University are not drinking tap water which is free and will taste better once it is purified. Bottled water is very expensive not only to the consumer but also to the environment. The environment is affected tremendously when people drink bottled water and do not recycle. Many people believe that bottled water is much healthier than tap water but the truth is bottled water lacks many nutrients that are found naturally in tap water. Bottled water is in many cases acidic and most people are not aware of the acidity. In addition, people should drink tap water and the university should promote drinking tap water. I know that some programs are in place to move from bottled water to tap water but the progress is slow. More students need to see the benefits of tap water including costs and the option to refill. Tap water has many benefits but people continue to believe that tap water is harmful. Technology has advanced and there are various ways to purify the water. Therefore, tap water is probably healthier than bottled water. Students here at the University should drink more tap water and advocate for water filling stations for students to fill up tap water. By drinking tap water it will decrease the number of students who continue to buy bottled water decrease waste and help increase a healthier world.