

Log Book

December 8,2023

Today I learnt that aquatabs contain more than one chemical that purifies water which lead to me thinking that it will work the best.I also went and got the water from chestermere lake and after doing some research I found out in contains salmonella.I also found out how a life straw has to filters, one that catches all the visible object and then one which purifies the invisible bacteria.Lastly, I learnt that solar purification might not work good because it does not have concentrated ultra violet rays and emits other stuff mainly like radiation which can block the concentration of the uv rays.

December 14,2023

Today I realized I should get sterile objects due to the fact that all the bacteria could leave if it wasn't secure.I also learned that I should put everything in the dark before I do my experiment because if I leave it in sunlight, ultraviolet rays can reach it and purify some of the water making it turn out to be not accurate.I because many scientists claim for it to be the best method of swabbing on a petri dish.All you do is dip you swab in the water and than start from the top making zig zags from edge to edge until you reach the bottom.You should also wait 3-4 days for the bacteria to grow because the bacteria needs time to grow and feed on the ocre in the petri dish.
also plan to use the streaking method when swabbing the water

January 5, 2024

As I was doing my background research I found out that about 2.2 billion people don't have easy access to clean drinking water and 1 in every 3 people lack clean sanitation services. Also, water is extremely important because 50%-70% of our body is made up of water and 70 percent of our earth is made up of it. Humans cannot survive without water for more than 3 days without water because it has many benefits such as, helps our blood flow, makes us more energized, helps our respiratory system, helps us fight off viruses, and it helps us regulate our body temperature by cooling us down through perspiration or sweating or it can heat it up by modulating our blood flow. Humans aren't the only things that need water because all life needs it to survive like how plants need it for nutrients in photosynthesis to make their own food and then they release oxygen which we also need to breathe or else we could not survive and none of this would be possible without water.

January 18, 2024

Today I finished my experiment and was surprised by the results. The Aquatabs worked the best, having the least amount of colony growth and then the boiling, LifeStraw, solar purification, and then the control. After doing a little research I found out that boiling was not supposed to do as well because apparently some of the bacteria returns after it cools down and I swapped it right when it boiled. Also I realized that I did not have enough agar in my petri dish because the bacteria was extremely faint when the colonies grew. Overall, my hypothesis was correct because the Aquatabs worked the best but

was the most expensive so I suggest you do boiling if you are looking for the best cost effective method.

February 5, 2024

For my next steps I would try to get a petri dish with more ocre so the bacteria could be more visible. I would also let the boiling water rest before I swab it to see if some of the bacteria actually returns when it becomes cooler. An incubator could also be useful because it can regulate the temperature to 37 degrees celsius where the bacteria grows the best instead of room temperature at about 22 degrees celsius. Lastly, if donations were high enough we could design a water tower that is powered with solar panels where dirty water from the closest body of water which is most likely dirty can be pumped up to a water tower where while going up it will be first flashed with concentrated ultra violet light. After It will go into a boiling tank and than goes through a filtration system like a Life straw. Furthermore, It will than be topped off with Aquatabs and than the clean water will go through a network of pipelines all leading to the residence houses so they can finally have water from the push of a tap. Making the methods synergistic could also be a good idea because I can maybe boil it and than use Aquatabs to neutralize any remaining bacteria so the water can be extra pure and than I can see which two methods work the best.