

# Outline of the final lab report assignment



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Carefully review the Final Lab Report instructions before you begin this assignment 2. The Anal Lab Report should cover all 3 experiments from your Week Two Lab 3. As you plan your final paper, think about how you can combine these laboratories to tell a fact-based story about water quality. For example, consider how your experiments can be linked to issues at water treatment plants or the amount of bottled water people purchase. 4. For further help see the Sample Final Lab Report for an example of a final product on a different topic. 5.

You may simply replace the text following the bold terms with the appropriate outline information to complete this assignment. Make sure to pay close attention to the information called for and provide all necessary material. Title Introduction Body Paragraph #1 – Background: All flourishing, healthy and thriving communities all have one thing in common and that is clean water, free of harmful contaminants because our bodies depend on clean, pure water to survive. As maintained in Mishear, S. , & Underwear, S. (2013), ‘ Water is crucial for the well-being of people.

Due to industrialization, growing population , illiteracy the provision of safe drinking water will undergo global Indus in near future”(pig. 599, Para 5). In view of the fact that many diseases and viruses can be reanimated though water, dirty/contaminated water is extremely hazardous and it negatively impacts our health and the health of all living things. Water quality is influenced naturally with climate changes for instance, and by our actions. Unfortunately we don’t clearly see the immense damages that our negligent behavior is causing.

In turn it leads us to falsely assume that water must be resistant to pollution damage and that we have an everlasting supply of clean, drinkable water at our disposal. This is why we should all try to create awareness on water contamination, educate ourselves and others in our community to agonize and accept the fact that water contamination threatens our health, our lives and consequently our existence. Water quality research is very important to our society because it gives us insight on contamination issues, brings up awareness and allows us to learn preventative measures.

As stated in Frederick, K. (2008), ' The importance of process and participation for adaptive management suggests that success can be judged in terms of learning outcomes" (pig. 303, Para 1). Our drinking water can be contaminated and we might not even realize it, because of all the contaminants that are transported through water regular valuation of septic systems should be required in all towns/counties around the country. As stated in Configurations, M. J. , Grandson, S. M. , & Intimidator, H. O. 2013), " Drinking water contamination, leading to waterborne diseases, is a recurrent event worldwide. A recent study established that more than one out of every three water borne outbreaks in affluent nations was caused by sewage contamination in ground water" (pig. 1114, Para 2-3). In this study, drinking water was tested and indeed it did show signs of contamination testing positive for nourish. Therefore demanding periodic septic systems evaluations in every own should be mandated. Body Paragraph #2 - Objective: How do we know if our drinking water is in fact contaminated?

What can we do to prevent our water from harming our family members?

These are just a couple of concerns and questions that you may ask yourself.

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The purpose is to inform society of the importance of having a supply of clean, free of contaminants running water in their community. Additionally, to be able to recognize the significance of raising awareness on water, for instance to be aware of what helps maintain or improve the quality of water and what environmental and human behaviors puts the laity of our water at risk for contamination.

In view of the fact that we depend on water for survival, water pollution is an environmental issue that shouldn't be looked over. Body Paragraph # 3 - Hypotheses: Hypotheses Experiment #1: Oil hypothesis = the water would probably change consistency, probably thicken up and change color Vinegar hypothesis = the water would probably stay the same color if the vinegar is white but there will be a change in smell Laundry detergent hypothesis = the water will change in consistency and would probably have suds/bubbles, smell and color (if detergent is colored) would also be altered.

Hypotheses Experiment #2: When I tried to filtrate the water to remove the contaminants, I am not completely successful because the water is not 100% contaminant free since the water has a rancid smell. Hypotheses Experiment #3: If bottled water is supposed to be free of contaminants, then bottled water should contain significantly less contaminants than tap water because that is why bottled water is sold to the public.

Materials and Methods Body Paragraph # 1: Experiment #1: Effects of Groundwater Contamination In order to know if soil is capable of actually removing contaminants from our ranking water I used three ordinary items that one way or another end up dissolving and polluting our water supply

they are oil, vinegar and laundry detergent. Aside from using the three pollutants I used a permanent marker for labeling, soil, a funnel, cheesecloth and of course water. First I labeled a total of eight beakers and divided them into two groups of four.

I filled four beakers (#1-4) with 100 ml of water then I added to beakers #2-4 with 10 ml, oil, vinegar and detergent, after mixing what I incorporated into the water I watched to see if any physical changes occurred and smelled the solution. I noted what I observed for each beaker and proceeded with the experiment. Next I lined the funnel with cheesecloth and placed 60 ml of soil in it. I took beaker #5 and poured the contents of beaker #1 into the cheesecloth lined and soil covered funnel and let it stand for about one minute and observed what happened to the water after it was filtered.

I performed this same process for the rest of the beakers. Experiment #2: Water Treatment To determine if a filtering method is as effective as it is believe to be. The essential materials that I used in this experiment were potting soil, sand activated charcoal, gravel, alum, funnel, cheesecloth, bleach, and a stopwatch. First I made a solution of 100 ml soil and 200 ml water and this was labeled as the contaminated water of which 10 ml was set aside.

I let the solution sit and lined a funnel with cheesecloth and poured some sand, activated charcoal, and gravel. Next I poured in some clean water for a number of four times and this is how I solidified the filter. I poured in some of the contaminated water into the filter after five minutes it was considered as filtered water and a couple of drops of bleach were added to the water as

well. Now it was time to make a comparison between the water that I just manually filtered with the 10 ml of contaminated water I had set aside and noted the differences.

Experiment #3: Drinking Water Quality In this experiment I tested the water quality of two different types of bottled water and water from the tap. I used Disdain and Fiji brands as my bottled water and water from the tap.

Ammonia, chloride, 4 in 1 test strips, phosphate and iron test strips and most importantly a stopwatch. I used all of the test strips was provided with in the different types of water and recorded my findings. Some of the strips I used tested for ammonia, chloride, phosphate and iron in both bottled and tap waters.

Results Tables: Experiment #1: Table 1: Water Observations (Smell, Color, Etc. ) Beaker Observations Clear and odorless 2 Clear in color, odorless, visible oil bubbles/oily thicker consistency 3 Clear in color, change in smell 4 Clear color, change in smell and appearance 5 Colored changed to a light brown color, smell also changed but very slightly 6 Odor changed slightly very light smell of soil, change in color to a light brown 7 Change in color and smell the same (like vinegar) 8

Change in color, smell remained the same Experiment #3: Table 2: Ammonia Test Results Water Sample Test Results Tap Water 0

MGM/L[email protected]Bottled Water 0 MGM/L[email protected]Bottled

Water Table 3: Chloride Test Results Table 4: 4 in 1 Test Results Total

Alkalinity Total Chlorine Total Hardness 0. 2 MGM/L 40 MGM/L 10. 0 MGM/L

120 MGM/L Table 5: Phosphate Test Results 0 pump 50 pump Table 6: Iron

Test Results 0 MGM/L ammonia and chloride were found in both bottled and tap water. In the 4 in 1 test strips tap water had a pH of 2, alkalinity MGM/L, chlorine 40 MGM/L hardness of 0 MGM/L, phosphate 0 pump and iron 0 pump.

Disdain bottled water ad a pH level of 1, alkalinity, chlorine and hardness all measured 0 MGM/L and phosphate and iron both measured 0 MGM/L. Fiji bottled water had a pH of 8, alkalinity measured 10. 0 MGM/L, chlorine measured 40 MGM/L, hardness 120 MGM/L, phosphate measured 50 MGM/L and iron 0 MGM/L. Discussion Body Paragraph #1 - Hypotheses: The hypothesis in experiment #1 was confirmed because after all of my observations the water mixed with the contaminants did react the way envisioned they would.

Changes in smell, color and composition occurred when mixed water with each of the three contaminants and even after filtration intimidation was still present. Disposing of contaminants such as oil should be done so correctly. Hypothesis #2 was confirmed because I predicted correctly when I stated that the water was going to have traces of contamination even if it was filtered. However, I'm going to have to deny hypothesis #3, I was wrong when I thought that bottled water was more likely to be less contaminated then tap water.

When bottled water Fiji showed to have more contaminants then tap water with a higher phosphate, pH, alkalinity, hardness and the same amount of chlorine as tap water I knew that my hypotheses was wrong. Body Paragraph # 2 - Context: The billion dollar bottled water industry suggests that bottled

water is the best option however in my personal opinion and after performing experiment #3 I don't think it's worth it to buy bottled water. Considering that there isn't much of a difference between bottled water and tap water, plus bottled water Fiji even showed to have higher contaminants than tap water.

For example, it had phosphate 50 ppm while tap water had 0 ppm. As stated in Potter, C. (2002), "Over half of Americans drink bottled water spending 240-10,000 times more per gallon for bottled water than they do for tap water, a trend largely fueled by the belief that bottled water is safer and healthier than tap water. Is the cost worth it? Controversial reports from the World Wide Fund for Nature (WWF) in Gland, Switzerland, and the Natural Resources Defense Council (NRDC) in Washington, DC, say no" (p. 76, Para 1).

Body Paragraph #3 - Variables and Future Experiments: In Experiment #1 Effects of Groundwater Contamination the possible factors that could have possibly affected my results would be the timing. For instance, if I had waited a little bit more instead of smelling and observing immediately when I mixed the water with the detergent, oil and vinegar could it have made a difference? I could control this by waiting the ideal time and carefully timing everything with a stopwatch. Can also test this by doing the experiment and waiting at different times, for instance I can wait one minute, three minutes and five minutes.

With experiment #1 I was able to recognize that contaminants that seep into the water are capable of causing consequences that can possibly affect



our health. In Experiment #2 Water Treatment, the outcome indicated that filtered water isn't 100% free of contaminants. Perhaps if I extended the filtration process the contaminated water might have been clearer. Some possible factors that mightn't affected the final result would be how contaminated the tap water in my area is and the state of health that I was in.

For instance, if I had a cold my sense of smell would not be as potent as they would be if I were cold-free. Could control this in the future by first investigating if my town's tap water isn't extremely contaminated. Also, if I was sick could ask someone else to smell the solution to get more accurate results. In Experiment #3 we were able o determine that bottled water isn't as safe and healthy as it is perceived to be. The possible factor that could've affected the accuracy of the results is the timing, if I went over/under the time that was indicated to check the strip for the end result.

I could control this by being attentive and careful and making use of the stopwatch that was provided. We know that contaminants are present in our water, so we consume it daily. Is it harmful or irrelevant? We can test this by giving groups of people the same water (tap water from their town) for a predetermined amount of time and then evaluate them. Does one group have ore energy than the other? Is anyone experiencing any discomfort? ODL so, how could you control for these in the future?