

# Life science research project

[Environment](#), [Nature](#)



Both dams are surrounded by residential areas which could possibly be affecting the water quality on both dams and I will be assessing the impacts within this project. Water is a very valuable resource and unfortunately as humans we do not understand the consequences we could face if we do not proceed to preserve our water bodies. There have been many cases already known to both dams which could affect the quality such as the deceased body found on the banks of Homestead dam. The housing around Dalpark dam is situated right up against the banks as seen in photographs which gives us the idea that pollution can easily enter the dam such as fertilizers entering the dams via drains. A man-made structure was built in Dalpark dam in order to get rid of the water hyacinth but, while they were busy with the project were they aware of the pollution they were causing?

Unfortunately, it is too late to find out, but I will be assessing both dams at an intensive level so that we could promote change to better the environment around us. Investigators have come to the conclusion that these two water bodies are under heavy strain due to human impacts such as littering, and we need to fix that. After reading the sources available from other researchers, I can say that the information gathered by them is indeed very true as I have noticed the same factors whilst doing my research. The dams have been influenced heavily by human impacts.

Refer to appendix A for pictures on the dam.

Refer to appendix B for the dam locations.

Method:

While I was at Homestead dam and Dalpark dam, I ran a few tests to test the water quality and those tests include: (Please note that I did not include all tests undergone in my research task).

PH level of water: Under polluted water has a ph. between 6. 5 and 8. 5.

Method- Hold the strip under the water for 5 seconds making sure all 3 pads are submerged, shake it off and compare the colours with those on the ph. colour chart.

Temperature of water: The temperature influences the survival of plants and animals.

Method- Hold the thermometer 10cm below the surface for 2minutes, remove it and asses the temperature in degrees Celsius.

Nitrates and Nitrites: These enter the water through fertilizer runoff and sewage discharge.

Method- Dip the indicator strip in the water so that both pads are immersed and hold for 2-3 seconds, shake off the excess water and wait 1 minute before recording, compare colours to the colours on the chart. Natural levels of nitrate are below 22ppm. Nitrates above 11ppm cause excess damage and growth. Nitrites above 50ppm indicate that water is unsafe to drink.

Turbidity test: Turbidity means finding out whether the water is clear or muddy. High turbidity is caused by soil erosion, urban runoff or bottom feeders.

Method- Fit a turbidity disk to a dowel stick, lower it 20cm beneath the water surface, see which numbers on the disc are visible, it is measured in NTU's, if the numbers 5, 4, 3 and 2 are visible the turbidity is less than 10 NTU's. if numbers 4, 3 and 2 are visible, turbidity is 10-20 NTU's. if numbers are 3 and 2, the turbidity is 20-30 NTU's. If only 2 is visible, the water is unsuitable for drinking and for swimming.

Coliform bacteria test: Coliform bacteria exists in the intestines of animals and in soil. Natural waters will show presence of coliform. If faecal coliform counts are high, pathogenic organisms may be present.

Method- Use a pipette to draw up a sample of water, add it to a tube consisting of a tablet, fill the tube to the 10ml line, put the cap on the tube and do not shake it, stand it upright with the tablet at the bottom, store the tube for 48 hours out of direct sunlight in an area where temperature is between 21 and 27 degrees Celsius, record your observations.

Oxygen concentration test: Dissolved oxygen is essential for the maintenance of healthy water. Majority of the oxygen comes from the earth's atmosphere and by photosynthesis through sunlight. Algae and rooted aquatic plants also contribute to oxygen through photosynthesis. Cold water can hold more oxygen than warmer waters. High levels of pollution and sewage can cause the oxygen percentage to decrease.

Method- Record the temperature of water at the same spot where you will be doing the tests (try reach into the water as far as possible), choose a tube and stopper from the kit given, place the tube 10cm below the water surface

at the same place where you measured the temperature, drop two dissolvent tablets into the tube (water may overflow), push the rubber stopper in as far as it can go (there should be no air bubbles), invert the tube over and over for 4 minutes.