Analysis of Water at Lake Ferguson and the Landfill

Purpose:

The purpose with the tests is to decide whether the water in Lake Ferguson and the stream through the land fill is clean or safe to drink.

Procedure:

Land fill

Test the pH

- Calibrate the pH-tester by sticking it into the calibration solution, by a mistake we used the stored solution as calibration solution.
- Clean the tester with clean water.
- Put some water from the stream into a little box and test the pH by sticking the tester into the water. Change the water, but take the new water from the same spot as the old water was taken to minimize error, repeat the test.
- Observe the surroundings and what the water looks like.

Test the concentration of ammonium, nitrate and phosphate.

- Fill each cane to the line with water and follow the instruction in the manual the each test.

Lake Ferguson

- Do the test in the same way as we did on the land fill.
- Remember to observe the surroundings and what the water looks like.

Data

	pH		Phosphate	Nitrate	Ammonium
Landfill	6.98	7.00	0 mg/l	15-20 mg/l	1 mg/l
Lake	7.22	7.22	0 mg/l	0 mg/l	<0.05

We performed the pH, Phosphate, Nitrate, and Ammonium tests at both the landfill and Lake Ferguson.

Discussion

A Description of Surroundings (Qualitative Data)

Landfill: Yellow water, dirty, brown-black soft and smelly mud, sparse and scraggly plants, extremely green grass, and many animal bones. Surrounded by mud from the river, large amounts of mosquitoes.

Lake: Clean, clear, colder water, higher visibility to bottom of shore, rural area, mountainous, and surrounded by mountains rather than the dirtier river. Hardly any mosquitoes and more plentiful vegetation. In an interview with Trine, a previous resident in Kangerlussuaq, the lake water is safe to drink directly from the lake, but is treated and then used for drinking water in town.

The weather at the time of both observations was slightly overcast but still sunny, cool, and with hardly any wind. The temperature was approximately 18 degrees Celsius, and the humidity was quite dry; around 30%.

The results we found are what could be expected, considering that the water found at the landfill was quite dirty in comparison to the water from Lake Ferguson. The garbage at the landfill must have contained organic material, so therefore the presence of nitrate and ammonium could be expected (it is a residue after the material breaks down). Nevertheless, we must acknowledge that our data might not be exact. Our use of an indicator kit included a color scheme with large gaps between the different color matches. Our results never completely matched the colors provided. We have estimated the number of milligrams per liter of phosphate, nitrate, and ammonium, but our results may not be completely accurate.

Conclusion

From what we have gathered from our data and observations, we believe that the water from Lake Ferguson is safe to drink and is clean. We believe that the water from the landfill stream is dirtier and unsafe to drink. We base this conclusion on the color and clarity of the water, the presence of life in the water, and on the high concentration of ammonium in the landfill water.