

Water testing lab conclusion



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Water Testing Lab Conclusion In this lab, chemical tests were used to check for the presence of calcium, chloride, and sulfate ions in water samples. To do this, the testers started with five samples: a reference, a sample of only the chemical being tested for, a control, distilled water, two home water samples, and a school water sample. To test for the ions in the water, a chemical that would react with the ion and create a precipitate was added. If the precipitate was not easily visible, a Tyndall test was performed. In a Tyndall test, the person holds a laser up to the solution in a dark room. If the laser shines through, there is a weak Tyndall and no precipitate. If there is a beam of light from the laser running through the solution, it has a strong Tyndall and a precipitate. In this reaction, the anion oxalate ($C_2O_4^{2-}$) combined with the cation calcium (Ca^{2+}) because when the oxalate ion was dropped into the test solution containing the calcium ion, the calcium ion was no longer attracted to the water, but was instead attracted to the oxalate. This attraction resulted in a compound that is insoluble in water, a precipitate. The sodium and chloride ions are soluble in water, so they did not experience a change. In the Home 1 water sample, there were medium amounts of the calcium ion, medium to high amounts of the chloride ion, and a small amount of the sulfate ion. Comparatively, the school water sample had all-around less amounts of the above ions. But this doesn't necessarily mean that the school water is better. Studies have shown that calcium in water can actually be beneficial to one's health; it helps build strong bones and teeth and keeps blood pressure low and seems to have no negative impacts on one's health. Chlorine is also generally seen as a useful ion in water. It has been used to purify drinking water by killing microorganisms residing in it since 1904, and has seemed to do an excellent

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job. But recently chlorine in water has been linked to various types of cancers and heart diseases, but many experts argue that it is not just the chlorine, there are other factors. Yet, out of fear, many cities have moved to a different kind of disinfection of water called ozonation. As for sulfate, there are no known benefits of it and it is only unsafe in very large quantities. If the water has a rotten-egg smell, it most likely has large amounts of sulfate and should not be consumed. The results that I found in this test were not completely anticipated. I expected the school's water to have larger traces of the various ions than my home water sample, but I am also not incredibly surprised. Works Cited " Chlorine in Drinking Water - The Good, the Bad, and the Ugly News." Chlorine in Drinking Water - The Good, the Bad, and the Ugly News. N. p., n. d. Web. 02 Dec. 2012. . " Northeast Ohio." The Plain Dealer. N. p., n. d. Web. 02 Dec. 2012. . " Sulfates." Sulfates. N. p., n. d. Web. 02 Dec. 2012. .