



Materials:, chlorine water, salt water, Petri dishes and agar

Which pools have more bacteria, saltwater or chlorine?

I am going to use distilled water as my control I will check on how much bacteria has grown each day and examined the bacteria using a microscope and I will have different water from different pools

Saltwater pools

Cleaning

One spray of dawn power wash rub it around and rinses it out. Lids wash front, wash back and leave to air dry. I put the name of the pool and saltwater or chlorine.

Pools collected

Salt Glenmore 1

Salt Calgary Jewish Center 2

Salt Renfrew 3

Salt inglewood 4

Chlorine Village Square 5

Chlorine MNP 6

Chlorine spray lake sawmills pool 7

Chlorine MRU 8

Control(distilled water)9

Plan

Collect water put in petri dish add agar for 2 weeks exam and take photo at 8:15 pm and analyze the bacteria levels

Procedure

To clean the containers I used one spray of dawn power wash, rubbed it around and rinsed it out. Lids wash front, wash back and leave to air dry. I put the name of the pool and saltwater or chlorine. I used agar agar powder to make agar plates. I put them under a grow lamp for 3 weeks, taking a picture each day at 8:15 pm and then examined the bacteria under a microscope.

Hypothesis

I think that salt water will have more bacteria because they are popular. chlorine pools go through less processing to clean the water and salt water pools go through a long process so therefore, I think that saltwater will have a higher amount of bacteria

Village square

Why do they use chlorine?

Chlorine is a stable chemical available in different forms and from different places chlorine is one of the safest and most effective means of sanitizing water.

What process does it go through?

Liquid chlorine goes through a small pump then as the last step it gets injected in the pool water village square used to use gas chlorine but it was too dangerous if it spilled.

Village Square has the largest filtration system in all the city of Calgary pools one drain has all the suction if there is only one but if there is more then they all have to same amount of suction the drains are curved to prevent you and other items from sticking to it they got replaced every 7 to 10 years all city of Calgary pools use sand filters except for foothills they use diatomaceous earth which means ground up dino bones

Filtration system has laterals inside of the Sand filtration and there's not only sand in the laterals but there's boulders on top to make to make sure that the sand doesn't move around as much the water is in the laterals it comes out of it and it's clean water and then it heats up to 29.5° c and that is the highest they can make it because 30 degrees Celsius and over is considered a hot tub by The province. it takes a lot of energy to heat this all up and in village Square they have 1.5 million liters of water in the main pool only it takes one week to change the water and that's just filling the pool and they change water in every September there's a waistline that made in the filter that makes the dirt and stuff exit the filtration system right into the dumpster electrolysis is what Glenmore and most saltwater pool use in village Square that use liquid chlorine which is also bleach they use UV ultraviolet light on the bacteria passing through a tube where a giant light bulb prevents the bugs from multiplying it makes it sanitary

in village Square they have two parts chlorine per million if they were to raise it to 10 parts per million it would burn your eyes and make you itchy a pH scale is a very important and specific when it comes to the amount of chlorine used it has to have acidic and basic in village Square their pH level is 7.2 it keeps it so most people's eyes only burn a little bit your eye has a pH scale as well most people's eyes pH scale very between 7:00 to 7.4 the pH level in pools there because of if there's any tap water in it and levels of chlorine and busyness your eyes won't Sting if you have the same pH level as the pool but if they differ at whether your pH I level is higher or lower they will sting there are many types of chlorine such as gas liquid and solid chlorine I could chlorine is mostly used in city of such but if you have a home pool or a hot tub you will most of the time have solid chlorine things over time they dissolve what good chlorine in the pool and water shoots back up into the pool through many different ways such as the Jets and there's diffusers in the ground that make the water go to the shallow end

Testing

They send the water to the province where they test it every week and the pool itself at village Square tests their water four times a day to check pH levels and chlorine they check how much you have in the pool how much is left to go in the pool and how much you use if someone makes a mess in the pool they turn the chlorine levels up 10 or 20 parts per million which you do not want to be swimming in so that is why they clear you out and then they have to backwash it and lower levels of chlorine to keep you safe and that is why you can't go in the pool for a while after someone makes a mess

Fun facts: Glenmore water treatment plant has the most identical filtration system to village Square. Every city of calgary pool has to have chlorine in some sort of way.

Glenmore pool

Why do they use saltwater?

Saltwater is a safer way to clean and get chlorine for both patrons and staff; the salt is also reusable.

The salt in their pool is not like ocean saltwater. Ocean salt water helps you float in public pools they don't have enough salt you also can't feel the pool salt and you can't taste it as much

In a short interview with a worker at Glenmore aquatic center, a saltwater pool, I found out why they use saltwater. They use salt because it is a safer way to clean and get chlorine for both patrons and staff; the salt is also reusable. There are special machines that turn salt into a type of chlorine to use. Therefore their water is salt used as a chlorine like cleaner. I also found that their salt is not as intense as ocean saltwater. For example, Ocean salt water helps you float in public pools they don't have enough salt to make you float. You also can't feel the pool salt like you can in ocean water. The taste and smell is also not as strong.

In an interview with a city of Calgary manager I gathered information on why they use chlorine and how they test their pool water. They use chlorine because chlorine is a stable chemical available in different forms and from different places, chlorine is one of the safest and most effective means of sanitizing water. For testing, they send the water to the province where they test it every week and the pool itself tests its water four times a day to check pH levels and chlorine they check how much chlorine you have in the pool and how much chlorine is left to go in the pool and how much you have used. Some bacteria are resistant to the chlorine such as Bacillus, Mycobacterium and Tsukamurella.

Plugged in at Sunday 6:45-7:03 1:01-2:45 Monday 4:52-8:30 Tuesday 6:45-8:50
Wednesday 6:48-8:15 Thursday 5:15-8:25 Friday 7:20-9:25 Saturday 9:21-9:23
Sunday 7:16-9:28.

The light was plugged in for 22522 minutes

The light was plugged in for 375 hours

<https://www.wikihow.com/Grow-Bacteria-in-a-Petri-Dish#>