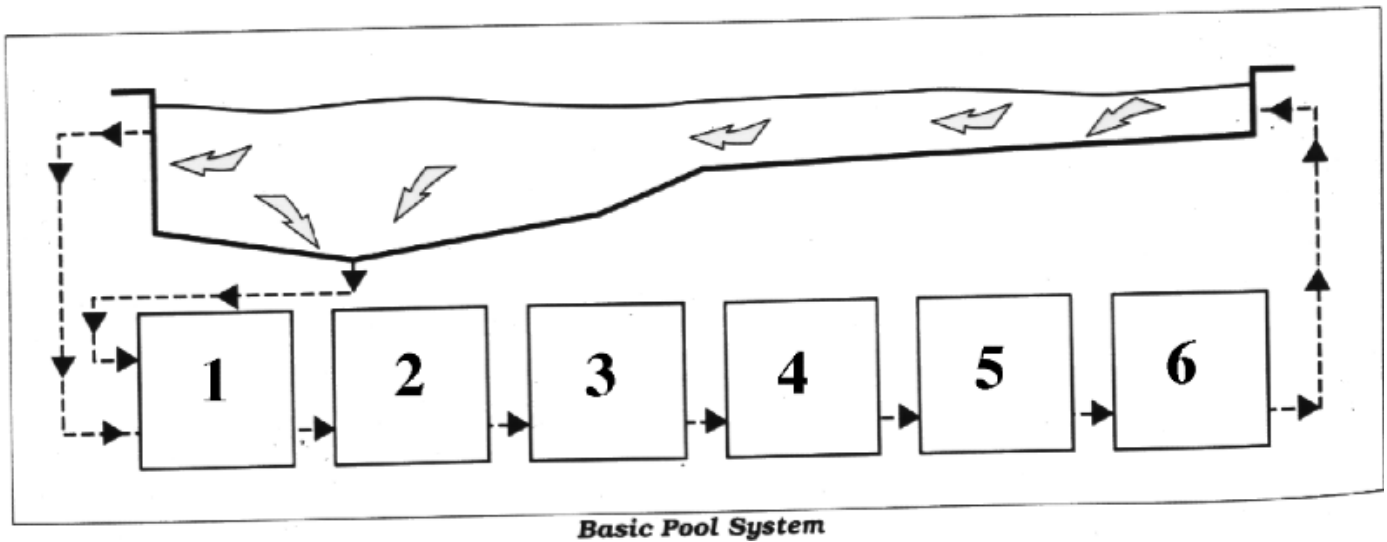


Pool Filtration System

(ALERT 137-140)



- 1. _____
- 2. _____
- 3. _____

- 4. _____
- 5. _____
- 6. _____

*According to the Health Act, the maximum time for all the water to go through the entire pool system is _____ hours. This is known as the _____.

1. Screened

(ALERT 137-138)

1. What is the purpose of skimmers?

-
-
-

2. What does the large-particle filters catch?

-
-
-

2. Pumped

(ALERT 138)

If the pump is located BEFORE the filter, it is a _____ system.
(as in the picture above)

If the pump is located AFTER the filter, it is a _____ system.

The speed of the pump determines the _____

3. Filtered

(ALERT 138-139)

There are two types of filters pictured on page 139 of your ALERT manual.

Two Filter Mediums

S&G:	DE:

When the filter begins to get clogged, it needs to be cleaned with a _____. We can tell when a filter needs to be cleaned as the influent pressure will be much higher than the effluent pressure. To do a backwash, the water-flow is _____ through the filter and drained.

4. Heated

(ALERT 140)

According to the Health Act (2002 Amendment), the maximum temperature that a pool can be kept at is _____

5. Disinfected

(ALERT 140-144)

A. Chlorine is the most common form of disinfectant used in public swimming pools, and comes in one of three forms:

Gas

-
-
-
-

Liquid = _____

-
-
-
-

Solid = _____

-
-
-
-

FAC = _____

CC = _____

TC = _____

$\text{FAC} + \text{CC} = \text{TC}$

Ozone (O₃)

Ozone is a form of oxygen which when dissolved in water, oxidizes material to produce disinfected water. This reaction takes place outside of the pool basin. Therefore, residual disinfectant is still needed as **there is no ozone in the pool** to deal with contaminants. The amount of disinfectant needed is much less in an ozonated pool.

Generated by the exposure of normal oxygen to high voltage electrical discharge or to ultraviolet radiation, ozone has been used in Continental Europe for many years as a disinfectant and oxidizing agent in swimming pools. However, the use of this type of technology in British Columbia is relatively new.

Ozone is a gas which has a very distinct pungent aroma and in an ozone/air mixture is imperceptible to the eye. Due to this unstable nature it is **produced on site** for immediate use as it decomposes into oxygen quite quickly. As ozone is very reactive to gas, it has a very detrimental effect upon metals, most plastics and rubber. This is a safety problem that must be realized in older systems as it may lead to toxic gas leaks.

Ozone gas can be detected by odour at a level of approximately 0.04p.p.m. However, because the nose loses its ability to smell ozone after repeated exposure, odour should not be counted on as adequate warning of high gas levels.

HEALTH HAZARDS

A worker may be exposed to concentrations of ozone at 0.1 p.p.m. over eight hours. The short term exposure limit is 0.3 p.p.m. over fifteen minutes. Exposure to concentrations over 10 p.p.m. is considered **immediately dangerous to health and life**.

Ozone acts as an irritant affecting eyes, respiratory tract and lungs. Effects range from minor headaches, reduction in lung capacity, chest pains, severe fatigue and eventually death. Persons with a background of heart or respiratory problems should take every precaution to avoid exposure to concentrations of ozone.

REQUIREMENTS

Ozone generators must be marked with permanent identification showing the details of the system as well as a WHMIS label. There must be some type of built-in protection of the gas delivery line in the event of equipment failure. The ozone system must have automated shut down and an **emergency manual shut down** in the event of a problem.

EDUCATION

The training of employees rests in the hands of the employer. An effective program will enable all employees to work without risk to themselves or the public. This education program should be based on practical on-site procedures and tasks to be performed.

6. Buffered

(ALERT 140-144)

pH is a logarithmic scale that measures the amount of Hydrogen ions (H+) in the pool.

The ideal pH for a swimming pool is _____

To increase pH in the pool, we use _____

To decrease pH in the pool, we use _____

In order to maintain a relatively constant pH throughout the pool, a buffer is added. This is typically _____. To measure the amount of buffer in the pool, we check the _____.

Hardness

(ALERT 140-144)

Hardness refers to the amount of dissolved _____ in the pool. Usually calcium is the chemical tested for, and it must be maintained between 150 and 250 ppm.

Turbidity

(ALERT 144-146)

Turbidity refers to the water _____. Many things can affect the clarity of the water, such as: _____.

The standard for water clarity (according to the BC Health Act) is as follows:

Summary

Test for:	Desired level:
FAC	
pH	
Alkalinity	
Hardness	
Temperature	

Maintenance Duties

(ALERT 144-148)

Daily maintenance tasks usually include things such as:

-
-
-
-
-

These tasks are necessary to maintain the cleanliness and appearance of the pool. Lifeguards are expected to complete these tasks on off-deck times.

Sometimes maintenance problems occur, and lifeguards need to respond quickly. If problems are not dealt with, the pool could become an unsafe environment for patrons.

Common problems include:

-
-
-
-

Each pool will likely have procedures on how to deal with each of these problems, and it is important that each lifeguard be aware of what to do.

Safety

(ALERT 146)

Here are some general guidelines for safety around pool maintenance equipment:

- Always wear appropriate safety gear when handling chemicals
- Always add chemicals in small amounts to avoid mistakes
- Always add chemicals to water rather than the other way around
- Ensure water is tested on a regular basis
- Make sure that other guards are aware of where you are when dealing with chemicals
- KNOW all emergency procedures
- If you are unsure about something, ASK your supervisor

WHMIS

See information provided with assignment