

BPS Natatorium Environment and pool water

At Birmingham Public Schools - Facility Operations we take the care and maintenance of the natatorium environments and the pool water quality very seriously. Our pools are utilized as frequently as 363 days a year and as much as 20 hours a day. The care of these environments is both a district priority and a requirement of health/safety regulations.

At BPS we have on staff, related to the care of the Natatoriums:

- Four mechanical contractors
- One degree in HVAC Technology
- *Fourteen* Certified Pool Operators - www.nspf.org

These are in addition to a multitude of licenses and specialized training that go into the care of our buildings and facilities.

We keep the HVAC system at the natatoriums running in top condition year round and they are running at the designed specifications as tested by the original installer twice every year. We perform filter changes every six weeks, *ahead* of the recommended intervals. Each time that the installer has tested the HVAC systems since 2015, they have been within 1% of optimal function at all settings.

Our facilities are cleaned daily, and sometimes more often, to try and keep up with the significant number of facility users.

Our waters are tested and logged twice daily for proper chemical content levels, temperature, and clarity. If any of these or other environmental indicators are out of alignment with required national standards, the pool is closed to all users and the indicators are brought back in line. Water samples are sent to the Oakland County Health Department weekly for testing. We test for Chloramines air levels once per week.

Our chemical storage, metering, and processes have been evaluated by Aquatic Source, a national vendor and resource for pool operations resources.

Our entire pool enclosure, all processes, all procedures, and all equipment (HVAC to Diving Boards) have been reviewed / approved by Gil Daws, a nationally recognized pool certification instructor, aquatics architect/designer, NSPF pool inspector, and member of the Michigan Environmental Health Association.

The number one cause of Chloramine reactions – that strong Chlorine smell – is bathers not showering before entering the pool and bathers urinating in the pool. *The smell is produced by chlorine doing its job* – reacting with chemical and biological agents in the water and neutralizing them. The byproduct of that neutralizing action are chloramines, which is the strong chlorine smell in the air.

- A group of 28 swimmers was observed doing stair running and medicine ball workouts on the deck for 30 minutes (strenuous exercise) – and none of them showered off the sweat before entering the water.
- A practice was observed; out of 38 swimmers attending, *only three* showered and entered the pool wet. 35 of them entered the pool dry.

Chloramines formation is accelerated by:

- 1) Swimmers not properly showering before entering pool – to remove hair gels, makeup, sweat, etc.
- 2) Urination in the pool.
- 3) Swimmers doing a high level of aerobic activity and sweating in the water - swimmers sweat in the pool during exercise.
- 4) Residues from ammonia based cleaning products that are used on decks or in shower rooms.
 - ✓ We do not use any ammonia based products in the pool area.
- 5) Residues from nitrogen based fertilizers used on landscaping.
 - ✓ We only use nitrogen based fertilizer on specific sports turf areas.
- 6) Poor air circulation and lack of fresh air introduction into the pool building.
 - ✓ We meet or exceed the 6 full air changes per hour (required by the State of Michigan).
- 7) Over use of “shocking” the pool for maintenance purposes.
 - ✓ Our pools are rarely chemically shocked. Once every several years is normal.
- 8) Improper use of chemicals not suitable for conditions specific to a geographic area.
 - ✓ Appropriate chemicals are being utilized.
- 9) Chloramines added to the municipal tap water. This is a current common practice by water suppliers.
 - ✓ We monitor the incoming water and add / change chemicals appropriately when we need to add water.

Prevention:

- 1) *Have the staff get the users of the pool to take showers before entering and use appropriate restroom facilities to urinate. This is required by state health codes but many pool users resist the practice.*
- 2) Change the air circulation system to include more fresh air introduction and better turnover or more efficient closed system circulation and dehumidification.
 - ✓ We have dehumidification at the High School pools and air is being changed out 6 times an hour.
- 3) Evaluate the type and brands of chemicals being used to treat the pool water for both chlorine and pH control.
 - ✓ Reviewed by Gill Daws and Aquatic Source and found to be appropriate.
- 4) Evaluate the pool filtration system to see if a filter that filters down to a more effective micron rating (like DE at 4 microns) would help.
 - ✓ Reviewed by Gill Daws and Aquatic Source and found to be appropriate.
- 5) Check the labels on all cleaning products to make sure they do not contain ammonia or are not nitrogen enriched.
 - ✓ We do not use any ammonia based or nitrogen enriched products in the pool area
- 6) Install an activated carbon filter to remove chloramines from the city water that is used to fill or add water to the pool.
 - ✓ We monitor the water and chemicals appropriately when we need to add water.

Your cooperation and participation in all the efforts to keep the pool environment safe, clean, and healthy is imperative! PLEASE shower before entering the pool and use the restrooms. PLEASE share this information with your team, your staff, your students, and your children.

Thank you.