

**Delaware General Health District
Human Waste Policy
Swimming Pool, Spa and Special Use Pools**

Legal Authority: Ohio Revised Code (Chapter 3701.81 and 3749.01 to 3749.99)
Ohio Administrative Code (Chapter 3701-31 (01-08))

The operator of a licensed swimming pool, spa and special use pool in Ohio is required to maintain the following minimum levels of disinfectant in the water at all times while the pool/spa is open for use:

	<u>Pools</u>	<u>Spas</u>
Chlorine	1.0 ppm	2.0 ppm
Bromine	2.0 ppm	2.0 ppm

These minimum levels meet or exceed nationally recognized levels of disinfectant desired in swimming pool and spa water. Under normal circumstances, these levels are quite adequate to handle the majority of contamination that would be introduced into the pool or spa as a result of waterborne germs, human feces and/or urine. Germs, such as these, can cause recreational diseases such as *Cryptosporidiosis*, *Giardia*, *E. coli*, and *Shigella*. Germs can be killed by chlorine, but not right away. **Even the best maintained pools can spread disease.**

When a human waste accident takes place in a swimming pool, wading pool, special use pool or spa, the Delaware General Health District recommends the following procedures. If the pool operator cannot determine the waste as being in a solid or liquid state, treat the contamination as a liquid.

If a solid, non-liquid formed stool is introduced into the pool or spa:

1. Evacuate all bathers from the pool or pools into which water containing the feces is circulated. Immediately close the pool or pools. Post a "WARNING: Pool Closed" sign at the facility entrance or rope off the pool or spa effected by the closure.
2. Turn off the recirculation system to the pool where the accident occurred.
3. Remove as much of the fecal material as possible from the pool, by using a net or scoop. Wearing disposable plastic gloves, place the waste in a sealable plastic bag. Seal the bag and dispose of the waste and gloves in a sanitary manner by placing in a covered trash container. Clean and sanitize the net or scoop (for example, leave the net or scoop in the pool during disinfection). Wash your hands with soap and water. Note: Vacuuming is not recommended.
4. Turn the recirculation system back on. Ensure that the filtration system is operating while the pool reaches and maintains the proper free available chlorine concentration during the disinfection process.
5. The **pool or pools** should be shocked or superchlorinated with sodium or calcium hypochlorite. (Attached please find information on how to

superchlorinate or shock a pool.) Raise the free available chlorine level to a minimum of 2.0 parts per million (ppm) or more based on the combined chlorine readings at the time of the accident. The pH should be between 7.2 and 7.5. Ensure that the chlorine concentration remains at 2.0 ppm or more and is found throughout all co-circulating areas of the pool or pools by sampling at least three widely spaced locations located away from the return water outlets. Record these readings. Test the pool water at least three times to ensure that the maximum free chlorine level is being maintained for the recommended amount of time (see #7 on this page). Remember to wash your hands after testing the pool water.

6. A **wading pool or spa** should be completely drained, cleaned and refilled. Shock the wading pool or spa after refilling. Record the chlorine and pH at the time of the accident and before the wading pool and/or spa is reopened.
7. The pool should be closed a **minimum** of thirty (30) minutes when the chlorine concentration is maintained at 2.0 ppm, or closed for a longer period of time if the chlorine concentration is raised to a higher level. A pool operator may reopen the pool when it has been closed at least thirty minutes, **and** the free available chlorine has stabilized to within 1.0 and 5.0 ppm, **or** the Delaware General Health District has conducted an inspection and found the pool to be in compliance.
8. Document the incident, including the procedures followed, in your daily logbook.

If a liquid contamination, such as a liquid stool, diarrhea, urine, and/or blood, is introduced into the pool or spa:

1. Evacuate all bathers from the pool or pools into which water containing the liquid contamination is circulated. Immediately close the pool or pools. Post a "WARNING: Pool Closed" sign at the facility entrance or rope off the pool or spa effected by the closure.
2. Turn off the recirculation system to the pool where the accident occurred.
3. Remove as much of the waste as possible by using a solid container. Wearing disposable plastic gloves, place the waste in a sealable plastic bag. Seal the bag and dispose of the waste and the gloves in a sanitary manner by placing in a covered trash container. Clean and sanitize the container or throw it away. Wash your hands with soap and water. Note: Vacuuming is not recommended.
4. Turn the recirculation system back on. Ensure that the filtration system is operating while the pool reaches and maintains the proper free available chlorine concentration during the disinfection process.
5. The **pool or pools** should be shocked or superchlorinated with sodium or calcium hypochlorite. Raise the free available chlorine level per the chart below:

FREE CHLORINE LEVEL (ppm)	DISINFECTION TIME *
10	1,530 minutes (25.5 hours)
20	765 minutes (12.75 hours)
40	383 minutes (6.5 hours)

* At a pH of 7.5 or less and a temperature of 77°F or higher.

Maintain it at that level throughout all co-circulating areas of the pools. Sample at least three widely spaced locations located away from the return water outlets to verify this concentration is found throughout the entire pool. Record these readings. Test the pool or pools at least three times to ensure that the maximum free chlorine level is being maintained for the recommended amount of time. Remember to wash your hands after testing the pool water.

Note: This chlorine and pH level should be sufficient to inactivate *Cryptosporidium parvum* and should be maintained for the minimum time indicated. CT refers to concentration (C) of free available chlorine in ppm and multiplied by time (T) in minutes. $(20\text{ppm})(765\text{ minutes}) = 15,300$. Or $15,300/\text{maximum free available chlorine level} = \text{Number of hours pool would need to be maintained at that chlorine level}$. To accurately measure the free available chlorine levels at 5.0 ppm or above, it is highly recommended that a FAS-DPD Chlorine Test Kit be made available at the facility.

6. A **wading pool or spa** should be completely drained, cleaned and refilled. Shock the wading pool or spa after refilling. Record the chlorine and pH at the time of the accident and before the wading pool and/or spa is reopened.
7. For all pools affected by the accident, sanitize the piping and filtration system to remove all forms of contamination. Do this by adding liquid chlorine to the skimmers and allow it to run through the system. Thoroughly backwash the filter after the CT value has been reached. Be sure the effluent is discharged directly to waste. Do not return the backwash through the filter. When appropriate, replace the filter media.
8. The pool operator may reopen the pool or pools after the required CT value has been achieved **and** the free available chlorine level has returned to within 1.0 – 5.0 ppm **or** the Delaware General Health District has conducted an inspection and found the pool or pools to be in compliance. Continue to maintain the free available chlorine concentration and pH at standard operating levels based on Chapter 3701-31 of the Ohio Administrative Code.
9. Document the incident, including the procedures followed, in your daily logbook.

The Delaware General Health District is requesting that each pool facility in Delaware city and county develop a human waste policy specific to your facility. A separate policy should be written for each pool, wading pool, special use pool and/or spa. The policy should include procedures that would prevent fecal accidents, a response policy and a plan of action as to how your facility will deal with emergencies. The plan should also include a strategy to communicate with pool patrons, the public, the local health department and the media. All pool personnel, including lifeguards and maintenance staff, should be given a copy of the policy.

The policy should include, but not be limited to:

- Maintaining a fecal accident log (see below);
- Who and how you will remove solid and liquid waste from the effected pool;
- What procedure will be followed to superchlorinate the pool;
- Depending on the maximum chlorine level that will be reached, how long will the pool remain closed (refer to CT formula);
- Requiring waterproof swim diapers for all infants and young children;
- Posting signs requesting persons who are ill, experiencing diarrhea or that have an infectious wound from swimming in the pool or spa.

Establishing a human waste accident log

Document each human waste accident by recording:

- The date and time of the event;
- Whether accident was a solid or liquid contamination;
- The free available chlorine, the combined chlorine, and the pH at the time or observation of the event;
- The free available chlorine and pH at least three separate times while the pool is closed and from three locations around the pool (also note the locations);
- The free available chlorine and pH before the pool is reopened;
- The procedures followed to respond to the human waste accident (including the process used to increase free chlorine residual, if necessary);
- The total contact time at which the maximum free available chlorine level was reached and maintained;
- Any major equipment repairs or changes;
- Recording when pool or spa is backwashed, drained and or chemicals added.

Reporting of a Communicable Disease

If a communicable disease is suspected or known, you must report to the Delaware General Health District any increase in fecal accidents, which is an indicator of communicable disease, and report any known exposure to communicable disease immediately to the General Health District.

In addition, Chapter 3701.81 of the Ohio Revised Code requires any person having charge of a “public accommodation, amusement...”, to report exposure to a dangerous contagious disease.

Resolution No: 2009-3

Delaware General Health District Board of Health

Resolution updating the Delaware General Health District Human Waste Policy for Swimming Pools, Spas, and Special Use Pools.

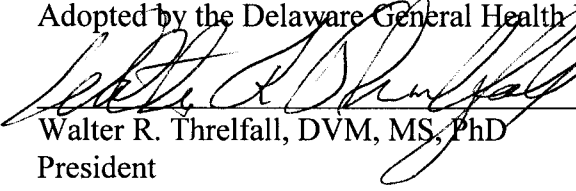
WHEREAS; The Delaware General Health District recognizes that waterborne disease can be transmitted through recreational water, and,

WHEREAS; It is recognized that swimming pools, spas, and special use pools must follow disinfection and safety protocols specified in Ohio Administrative Code Chapter 3701-31 and the Centers for Disease Control and Prevention has independently established recommended protocols for effective disinfection measures following fecal accidents, and,


WHEREAS; Conditions may exist at swimming pools, spas, and special use pools that might warrant extensive disinfection of the pool water.

THEREFORE; BE IT RESOLVED; The Board of Health of the Delaware General Health District hereby updates its Human Waste Policy for Swimming Pools, Spas, and Special Use Pools to adequately provide for the protection of those using these facilities in Delaware General Health District.

Adopted by the Delaware General Health District Board of Health this 27th day of January, 2009.



Walter R. Threlfall, DVM, MS, PhD
President
Delaware General Health District
Board of Health



Frances M. Veverka, MPH
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