

CHAPTER 41

Bathing Beaches

BOARD OF HEALTH ROLE AT A GLANCE

- Know the requirements for bathing beach water testing stated in M.G.L. ch.111 s. 5S and enumerated in 105 CMR 445.000
- Determine when the waters at bathing beaches within the BOH jurisdiction are unsafe based on bacteriological test results or physical quality review, and post beaches accordingly.
- Reopen beaches posted by BOH when water sample testing or physical quality indicates that the water meets the standards.

OVERVIEW

In August, 2000 legislation was signed into law regarding testing, posting and risk communication for all public and semi-public bathing beaches in Massachusetts. This required the amendment to 105 CMR 445.000; Minimum Standards for Bathing Beaches, State Sanitary Code, Chapter VII. Subsequent changes to regulations were made in 2009 and 2014.

The regulation of bathing beaches is not new to the Commonwealth, however. Over the past forty years, bathing beaches in the Commonwealth of Massachusetts have been regulated through the State Sanitary Code. Since the early 1960s responsibility for bathing water quality has shifted from the Massachusetts Department of Public Health (DPH), to the agency now known as the Department of Environmental Protection (DEP) and back to DPH.

Under the new law, local Boards remain responsible for monitoring the safety of the water at all public and semi public bathing beaches in their communities. What is new for Boards, is an increase in the frequency of testing, the type of testing that must be conducted and the need to conduct risk communication.

The new law is two-part: it revised and clarified existing regulatory requirements to better promote public health and safety at beaches in the Commonwealth and it mandated DPH to amend the existing regulations. These tasks was completed. The amended regulations were published in April, 2001 and can be found in the Code of Massachusetts Regulations (CMR) at 105 CMR 445.00.

Most of the amendments to 105 CMR 445.000 mirror MGL ch. 111 s. 5S. The following portions of the regulation are most significant:

- Bacteriological quality and physical quality standards for bathing waters. 105 CMR 445.030
- Indicator organisms and standards. 105 CMR 445.031
- Weekly testing of public and semi-public beaches. 105 CMR 445.032(C)
- Sample collection procedures and frequency of testing. 105 CMR 445.032
- Signs to be posted when bathing waters test to unsafe levels. 105 CMR 445.040
- Variance procedures. 105 CMR 445.100
- Reporting procedures 105 CMR 445.033(B)
- Permitting 105 CMR 445.300
- Required Permanent Signage at Beaches 105 CMR 445.020(A)

BOARD OF HEALTH RESPONSIBILITIES

- Test the waters of public bathing beaches within five days prior to beach opening and on a weekly basis throughout the bathing season.
- Ensure that the owners/operators of semi-public beaches conduct the required water quality tests. The required testing may be conducted by the Board, but the costs are borne by the owner.

The definition of bathing beaches found in 105 CMR 445.010 identifies two categories of beaches that are impacted by the regulations. Public beaches, which are any beach open to the general public, whether or not a fee is charged; and semi-public beaches which include neighborhood or residential associations, beach associations, country clubs, hotels, motels, campground, camps, condominiums and other beaches where admission for the use of the beach is included in the fee consideration paid or given for the primary use of the premises. Public and semi-public beaches must now be tested under the same regimen.

Beaches operated by the state will be overseen by DPH.

Operators of semi-public beaches will be responsible for paying for the testing of those beaches.

- Ensure testing is performed at the appropriate time and at the appropriate location(s) for each beach.

The regulation requires that testing be performed at times that the results will provide a meaningful reading of the safety of the water when bathers would be swimming. The BOH shall approve the sampling location(s) at each beach in its jurisdiction. The sampling location must be an area of greatest bather load. DPH suggests that the samples be obtained at a time of greatest bather load and that the samples be taken from the same location each week. Additional

samples must also be taken at any critical location subject to contamination such as a place where pipes drain in to the bathing waters. 105 CMR 445.032(A).

How to collect bathing water samples is described in 105 CMR 445.032(B)(C)(D) and (E). DPH has created a "Beach Sampling – Field Data Form" for sample collection

If there are contiguous beaches that require sampling, and a sample from one area would satisfy the requirements of the regulation, one location for sampling may be chosen. The BOH shall determine a representative sampling site for such beaches. This decision should be based on geography and previous testing records.

- Know what organisms are being measured and the levels that are not safe.

The tests to be performed will determine the presence and density of enterococci in marine waters and enterococci or E.coli in bathing beach waters. Previously "total coliforms" were used as indicator organisms for determining bacterial quality of beach water, but it has been determined that such a count did not accurately portray the safety of a beach. The levels of bacteria determined to be unsafe are described in 105 CMR 445.030 and 105 CMR 445.031.

- Determine when the waters at bathing beaches within the BOH jurisdiction are unsafe due to an elevation of the indicator organism, the presence of floatables or hazardous chemicals.

When the results of the water sampling reveal a bacteriological count that exceeds the levels mandated in 105 CMR 443.031 and meets the criteria in 105 CMR 445.030 (B)(3), or when epidemiological evidence shows the presence of an infectious disease or other hazardous health condition considered related to bathing water in the water, the BOH shall determine the waters to be unsafe.

The requirements of the regulations also serve to protect bathers from sludge deposits, solid refuse; floating solid, grease or scum wastes; oil, hazardous material and heavy metals; unsafe physical elements of a beach (such as fast currents or sharp drop-offs) and the bacteria listed above. 105 CMR 445.030(A)

- Immediately post signs warning the swimmers when bathing water is determined to be unsafe.

The regulation requires that once an unsafe level of organism is recorded, or the physical quality of the bathing beach water does not satisfy the BOH, the BOH must post, or cause to be posted, as soon as possible (but in no event longer than twenty-four hours), a sign warning bathers of the dangers of swimming in those bathing waters. The sign must state:

**WARNING! NO SWIMMING
SWIMMING MAY CAUSE ILLNESS**

The signs must also display “a graphic description of a swimmer in a red circle with a diagonal hatch mark. The sign must also detail the reason for the warning, the date of the posting and the name and telephone number of the Board of Health. The BOH must post the signs at the parking lot and at each entrance to the beach. 105 CMR 445.040

The regulations also require that the BOH, its agent or authorized person must notify DPH immediately when the analysis of bathing water is found to exceed the acceptable limits for the focus bacteria and the beach is closed. 105 CMR 445.033(B)(2) DPH must be notified when the beach is reopened, as well. DPH may be notified by telephone at (617) 624-5757 or by fax at (617) 624-5183.

- Review request from general public for additional beach water sampling.

Any person may request that the BOH conduct water testing, monitoring and analysis when there is a reasonable basis to believe that an alleged violation of the bathing beach regulation has occurred. The BOH shall promptly review such requests and determine whether additional testing need be done to assure the safety of the water for swimmers. 105 CMR 445.036 If the beach is operated by the Commonwealth and thus monitored by DPH, the BOH should inform the person making the request that the Commonwealth should be notified and that the Commonwealth will make the determination for additional testing.

- Receive results of tests from beach operators.

Any operator or authorized agent of a public or semi-public beach (except those overseen by DPH) shall report the certified results of all testing to the BOH within five days of the receipt of the results from the laboratory.

If an analysis indicates the existence of bacteria that exceeds the levels described in the regulation, the operator or authorized agent of a public or semi-public beach must immediately report these results to the BOH.

- Report routine data collected from water testing to DPH.

All test results for bathing waters must be reported to DPH by October 31 of each year. 105 CMR 445.033(B)(3)

- Establish variance scheme as outlined in regulation.

The BOH may grant a variance for testing for any public or semi-public beach under its jurisdiction if certain conditions are met. The operator of the beach must supply the BOH with the complete water quality analysis data for the

two prior bathing beach seasons and a written sanitary survey of the bathing beach. The specific requirements for the survey are listed in 105 CMR 445.100 (A). In granting a variance, the BOH must be satisfied that the usual enforcement of 105 CMR 445.000 would not serve a significant public health purpose and that granting a variance will not conflict with the intent or spirit of the standards outlined in the regulation. 105 CMR 445.100(E) It is recommended that the BOH provide notice of the pending grant of a variance to the citizens of its community.

The BOH must submit to DPH a notice of intent to grant a variance. Along with this notice the BOH must submit all the information (records and data) upon which it is basing its decision to grant a variance. If DPH fails to comment after 45 days, approval is presumed. 105 CMR 445.101(B)

When a variance is granted, the BOH must specify the bacteriological testing schedule that will be required in place of the standard regulatory scheme. This schedule must require at a minimum water testing once prior to the bathing season and testing at least once every thirty days during the bathing season. 105 CMR 445.100(B)

The length of the variance will be determined by the BOH but may not exceed four years. The BOH shall immediately revoke a variance if at any time the analysis of the bathing beach water does not meet the standards required by the regulation. 105 CMR 445.100(C)

A copy of the variance must be posted in a conspicuous place at the BOH for thirty days. After the thirty days the variance must be available for inspection by the public at the town clerk's office throughout the duration of the variance.

STATE RESPONSIBILITIES

DPH oversees beaches operated by the Commonwealth.

DPH will be available to receive information about high bacteriological readings and beach closings by telephone at (617) 983-6762 or by fax at (617) 983-6770.

DPH should receive the results of all routine sampling from all the BOHs by October 31 of each year. DPH will provide each BOH with the required reporting format.

When a BOH approves a variance, the variance must be submitted with all the documents needed for the variance for review by DPH. DPH then has 45 days to make a determination whether to approve or deny the BOH findings. If DPH fails to comment after 45 days, its approval is presumed.

If DPH grants a variance for a beach that it oversees, the variance must be available for view by the public at DPH.

105 CMR 445.000

**MINIMUM STANDARDS FOR BATHING BEACHES
STATE SANITARY CODE, CHAPTER VII**

445.001: Purpose

The purpose of 105 CMR 445.000 is to protect the health, safety and well-being of the users of bathing beaches, to establish acceptable standards for the operation of bathing water and to establish a procedure for informing the public of any bathing water closures.

445.002: Authority

105 CMR 445.000 is adopted under the authority of M.G.L. c. 111, ss. 3,5S and 127A.

445.003: Citation

105 CMR 445.000 shall be known and may be cited as 105 CMR445.000: Minimum Standards for Bathing Beaches (State Sanitary Code, Chapter VII).

445.004: Scope

These regulations shall apply to all public and semi-public bathing beaches.

445.010: Definitions

The words, terms or phrases listed below, for the purpose of 105 CMR 445.000, shall be defined and interpreted as follows:

Bathing Beach means the land where access to the bathing water is provided. It shall not mean a swimming pool as defined in 105 CMR 435.000: Minimum Standards for Swimming Pools (State Sanitary Code, Chapter V).

Bathing Water means fresh or salt water adjacent to any public bathing beach or semi- public bathing beach at the location where it is used for bathing and swimming purposes.

Board of Health means the appropriate and legally designated health authority of the community, or other legally constituted governmental unit within the Commonwealth having the usual powers and duties of the board of health of a city or town, or its authorized agent or representative.

Department means the Department of Public Health.

Operator means any person who

- (a) alone or jointly or severally with others has legal title to a bathing beach whether or not that person has legal title or control of the bathing water; or
- (b) has care, charge or control of such bathing beach as agent or lessee of the owner or an independent contractor.

Person means any individual or any partnership, corporation, firm, association or group, or the Commonwealth, or any of its agencies, authorities or departments or any political subdivisions of the Commonwealth, including municipalities or other legal entity.

Public Bathing Beach means any bathing beach open to the general public, whether or not any entry fee is charged, that permits access to bathing waters.

Semi-Public Bathing Beach means any bathing beach used in connection with a hotel, motel, a manufactured home park, campground, apartment house, condominium, country club, youth club, school, camp or other similar establishment where the primary purpose of the establishment is not the operation of the bathing beach, and where admission to the use of the bathing beach is included in the fee consideration paid or given for the primary use of the premises. Semi-Public Bathing Beach also means a bathing beach operated solely for the use of members and guests of an organization that maintains such a bathing beach.

Private Bathing Beach means any bathing beach not considered to be a public or semi-public bathing beach.

Sanitary Survey means a written report, conducted by a Massachusetts Registered Sanitary Engineer, Certified Health Officer or Registered Sanitarian, documenting an examination of the bathing water and contiguous land masses for the purpose of identifying actual or potential sources of microbiological or chemical contamination. The sanitary survey shall also include a description of the water circulation associated with the bathing area, the impact of bather load on the bathing beach area and any natural or artificial physical hazards.

445.020: Operation

No operator shall allow bathing or swimming in bathing water whenever in the opinion of the Board of Health or the Department the bathing water is or may be hazardous or unsafe for bathing or swimming. Bathing and swimming at public and semi-public beaches shall be limited to water areas that meet the requirements of 105 CMR 445.030. Any operator of a public or semi-public bathing beach shall comply with the requirements of 105 CMR 445.000.

445.030: Bathing Water Quality

Bathing or swimming shall not be permitted in any bathing water where the quality of the water does not meet the standards established in 105 CMR 445.030(A), 445.030(B), or 445.030(C), and no bathing or swimming shall be allowed when the bathing water is determined by the Board of Health or the Department to be unfit or so subject to contamination as to constitute a menace to health. Bathing or swimming shall not be permitted in bathing waters when:

(A) Physical Quality.

- (1) Sludge deposits, solid refuse, floating waste solids, oils, grease or scum are present; or
- (2) There are safety hazards including, but not limited to, fast currents, sharp drop-offs or an unstable bottom in the wading area(s) or lack of water clarity.

(B) Bacteriological Quality.

- (1) The results of a sanitary survey or other information indicates that sewage or other hazardous substances may be discharged into the bathing water to a degree considered by the Board of Health or the Department to be of public health significance; or
- (2) Epidemiological evidence discloses the prevalence of an infectious disease or other health condition which is considered to be related to the use of the bathing water and is considered by the Board of Health or the Department to be of public health significance; or
- (3) The bacteriological quality of the bathing water is unacceptable as determined by laboratory analysis for the appropriate indicator organisms specified in 105 CMR 445.031 and exceeds the standards established therein.

(C) Oil, Hazardous Materials, or Heavy Metals.

- (1) Oil, hazardous materials, or heavy metals are present in excess of surface water quality standards or guidelines established by the United States Environmental Protection Agency or the Massachusetts Department of Environmental Protection.

445.031: Indicator Organisms

(A) For marine water, the indicator organism shall be Enterococci.

- (1) No single Enterococci sample shall exceed 104 colonies per 100 ml. and the geometric mean of the most recent five (5) Enterococci levels within the same bathing season shall not exceed 35 colonies per 100 ml.

- (B) For fresh water, the indicator organisms shall be E. coli or Enterococci.
- (1) No single E. coli sample shall exceed 235 colonies per 100 ml. and the geometric mean of the most recent five E. coli samples within the same bathing season shall not exceed 126 colonies per 100 ml; or
 - (2) No single Enterococci sample shall exceed 61 colonies per 100 ml. and the geometric mean of the most recent five (5) Enterococci samples within the same bathing season shall not exceed 33 colonies per 100 ml.

445.032 Collection of Bathing Water Samples

(A) Location. The Board of Health, for public and semi-public bathing beaches that are not operated by the Commonwealth, and the Department, for bathing beaches that are operated by the Commonwealth, shall approve sampling locations at each bathing beach in its jurisdiction. Samples of bathing water shall be taken at locations within areas of greatest bather load. Additional samples shall also be obtained at any critical location subject to contamination from business developments, dwellings, streams, sewer outfall pipes or other sources. All required samples shall be obtained from these designated locations.

(B) Sample Collection. Samples shall be obtained in accordance with the procedures recommended by the most recent edition of the Standard Methods for the Examination of Water and Waste Water of the American Public Health Association or as approved by the United States Environmental Protection Agency.

(C) Frequency.

- (1) The Board of Health, its agent, or any other authorized person shall collect the bacteriologic samples:
 - (a) Within five days of the opening of the bathing season; and
 - (b) At least weekly during the bathing season at a time and day approved by the Board of Health or the Department; and
 - (c) Prior to reopening a beach after closing for any reason.
- (2) Testing for oil, hazardous materials, or heavy metals shall only be required if the operator, the Board of Health, or the Department has information indicating possible contamination of the bathing beach or bathing waters from oil, hazardous materials or heavy metals.

(D) Field Data. Physical conditions noted at the time of sampling shall be recorded on a form provided by the Department.

(E) Personnel. Samples shall be taken by the Board of Health, the Department, their duly authorized representatives or other qualified persons as determined by the Board of Health or the Department.

445.033: Laboratory Analysis and Reporting

(A) Laboratory Analysis. -Laboratory analysis of bathing water as required by 105 CMR 445.000 shall be conducted in accordance with the most recent edition of the Standard Methods for Examination of Water and Waste Water of the American Public Health Association or as approved by the United States Environmental Protection Agency.

(B) Reporting.

(1) Routine Reporting by Operators. Any operator or authorized agent of a public bathing beach, except public bathing beaches operated by the Commonwealth, and any operator or authorized agent of a semi-public bathing beach shall report the certified results of all testing, monitoring and analysis of bathing water to the Board of Health within five (5) days of receipt of the results from the laboratory.

(2) Reporting by Operators of Levels Exceeding the Established Standards. Any operator or authorized agent of a public or semi-public bathing beach shall immediately report to the Board of Health the results of all testing, monitoring and analysis of bathing water found to exceed the standards established in 105 CMR 445.030.

(3) Reporting by the Board of Health. The Board of Health or its authorized agent shall report the results of all testing, monitoring and analysis of bathing water to the Department no later than October 31 of each year.

445.034 Bathing Beaches Operated by the Commonwealth

State agencies that own or operate a bathing beach shall conduct or cause to be conducted all testing, monitoring, and analysis of bathing water at such bathing beach in accordance with these regulations. If the results of such testing, monitoring and analysis are found to exceed the standards established in 105 CMR 445.030, state agencies shall immediately, and in no event later than 24 hours, report the results of such testing, monitoring and analysis to the Department and the Board of Health in the community where the bathing beach is located. All other results shall be reported to the Department no later than October 31 of each year.

445.035: Sampling and Analysis at Semi-Public Beaches

(A) The operators of semi-public bathing beaches shall pay for the costs of testing, monitoring and analysis of bathing water adjacent to such semi-public bathing beaches.

(B) Operators of semi-public bathing beaches may enter into contractual agreements with the Board of Health to have the testing, monitoring and analysis of bathing water conducted by the Board of Health, the Department or other qualified persons as determined by the Board of Health or the Department.

445.036: Public Request for Testing

Any person may request that the Board of Health, or in the case of a bathing beach operated by the Commonwealth, the state agency or the Department, conduct testing, monitoring, and analysis of public and semi-public bathing waters when there is reasonable basis to believe that an alleged violation of 105 CMR 445.000 has occurred. The Board of Health or the Department, as appropriate, shall promptly review such requests and determine whether any such testing, monitoring, and analysis is necessary to ensure the public health and safety of bathing waters.

445.040: Posting and Reopening Notifications

(A) Posting. Whenever the bathing water quality does not meet the requirements of 105 CMR 445.030 or after any significant rainstorm at a bathing beach where there has been a history of violations of the water quality requirements contained in 105 CMR 445.030, the Board of Health, its agent, or any other authorized person shall immediately, and in no event later than 24 hours, notify the Department, and post or cause to be posted, a sign, or signs, at the entrance to each parking lot and each entrance to the beach stating:

**WARNING! NO SWIMMING
SWIMMING MAY CAUSE ILLNESS**

and a graphic depiction of a swimmer in a red circle with a diagonal hatch mark. The sign shall also contain the reason for the warning, the date of the posting and the name and telephone number of the board of health.

(B) Reopening. Prior to reopening bathing water posted due to a violation of the standards established in 105 CMR 445.030, the Board of Health, its agent, or any other authorized person shall verify that the certified results of the laboratory analysis are less than the standard specified in 105 CMR 445.031. The operator of any state operated bathing beach shall notify the Department and the Board of Health within 24 hours, or the next business day, of the reopening of the bathing water.

445.100: Variance

(A) The Board of Health may grant a variance from the provisions of 105 CMR 445.000 for any public or semi-public bathing beach not operated by the Commonwealth. The Department may grant a variance for any bathing beach operated by the Commonwealth. In granting a variance, the Board of Health and the Department shall review available epidemiological data and a written sanitary survey of the bathing beach, as provided by the operator. The survey shall include:

- (1) All possible sources of contamination, both bacterial and chemical on the watershed tributary to the bathing beach including the location and volume of:
 - (a) sewage and industrial waste water discharges;
 - (b) storm water overflows;
 - (c) bird and animal populations; and
 - (d) commercial and agricultural drainage
- (2) The volume and quality of the diluting water, water depth, water surface area, tides and confluence of tributaries, water currents and prevailing winds.

(B) Any variance granted by the Board of Health shall specify the required bacteriological testing schedule, provided that the frequency of bacteriological testing shall not be less than once prior to the bathing season and at least every 30 days thereafter throughout the duration of the bathing season.

(C) Any variance granted by a Board of Health or the Department shall expire:

- (1) at any time as determined by the Board of Health, but in no instance greater than four years, at which time the operator may apply for an extension, or
- (2) at any time the results of bacterial tests exceed the levels at 105 CMR 445.031.

(D) No variance from the requirement of weekly testing shall be granted until the applicant provides the Board of Health or the Department with water quality data collected for at least two complete and consecutive bathing seasons.

(E) In granting a variance, the Board of Health or the Department must determine that the enforcement of 105 CMR 445.000 would not serve a significant public health purpose and that the granting of the variance will not conflict with the intent and spirit of these minimum standards. Any variance or other modification authorized to be made by these regulations may be subject to such qualification, revocation, suspension, or other expiration as the Board of Health or the Department expresses in its grant. A variance or other modification authorized to be made by this regulation may otherwise be revoked, modified, or suspended in whole or in part, only after the holder thereof has been notified in writing and has been given the opportunity to be heard.

445.101: Variance to be in Writing

(A) Any variance granted by the Board of Health or the Department shall be in writing. Any denial for a variance shall also be in writing and shall contain a brief statement of the reason for denial. A copy of each variance shall be conspicuously posted for 30 days following its issuance and shall, while it is in effect, be available to the public at all reasonable hours in the office of the clerk of the community, or in the office of the Board of Health and in the case of a variance by the Department, at the Department.

(B) The Board of Health shall submit to the Department a notice of the intent to grant a variance. The Department shall approve, disapprove, or modify the variance within 45 days of receipt thereof. If the Department fails to comment within 45 days, its approval shall be presumed. No alteration of any requirement in these regulations shall be made under any variance until the Department approves it or 45 days has elapsed without comment, unless the Board of Health certifies in writing to the Department that an emergency exists.

445.300: Severability

In the event that any section of 105 CMR 445.000 is found to be invalid or unconstitutional, the remaining sections shall not be affected and shall remain in full force and effect. To the end, the provisions of this regulation are hereby declared severable.