

Article II Private Wells

[Adopted 12-11-2018; amended 10-8-2019; amended 03-22-21; amended 11/9/21; amended 7/26/22; amended in part 9/12/23]

§ 145-10 Purpose; permit required.

These regulations are intended to protect the public health and general welfare by ensuring that private wells are constructed, deconstructed or decommissioned in a manner which will protect the quality of the groundwater derived from private wells. The property owner or designated representative of an owner proposing to construct or deconstruct a well shall obtain a permit from the Board of Health. The well contractor must have the well permit (See Emergencies under § 145-26) in his possession at the specific job site during all aspects of the well drilling process.

§ 145-11 Authority.

These regulations are adopted by the Town of Harvard Board of Health, as authorized by MGL c. 111, § 31. These regulations supersede all previous regulations adopted by the Board of Health regarding the construction and deconstruction of private wells.

§ 145-12 Definitions.

As used in this article, the following definitions shall have the meanings indicated:

AGENT

The Nashoba Associated Boards of Health, as designated by MGL c. 111, § 27A, the Harvard Board of Health or other individuals designated as agents by the Harvard Board of Health.

AGRICULTURAL WELL

A well which provides water solely for agricultural purposes.

AGRICULTURE

The business of cultivating the soil, producing crops, and raising livestock useful to humans.

APPLICANT

Any person who intends to have a well constructed or deconstructed.

APPROVED SAMPLER

An individual or entity granted authority by the Harvard Board of Health to sample private well water in anticipation of quality analysis. An Approved Sampler is required to adhere to the Harvard Board of Health's approved "Best Practices for Water Quality Sampling of Private Wells"

AQUIFER

A water-bearing geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

BEDROCK

The solid rock that underlies all soil, sand, clay, gravel, and loose material on the earth's surface.

BOARD

The Board of Health of the Town of Harvard, Massachusetts or its authorized agent.

BOREHOLE

A deep, narrow hole made in the ground, especially to locate water which is not intended for use for drinking water.

BUILDING SEWER

A pipe which begins outside the inner face of a building wall and extends to a subsurface sewage disposal system (on-site system) or municipal or private sewer.

BUSINESS OF DIGGING OR DRILLING

A person who charges a fee for digging or drilling a well, or a person who advertises for hire the availability to dig or drill wells within the Commonwealth of Massachusetts.

CASING

Impervious durable pipe placed in a boring to prevent the walls from caving in and to serve as a vertical conduit for water in a well.

CERTIFIED LABORATORY

Any laboratory currently certified by the Massachusetts Department of Environmental Protection for drinking water analysis. A laboratory holding provisional certification shall also qualify.

CLOSED-LOOP GEOTHERMAL BOREHOLE

A boring drilled to facilitate the installation of a pipe loop or tubing for a ground source heat pump system whether circulating water, heat transfer fluid or refrigerant using direct exchange.

DRILLED WELL

Any well that is drilled into bedrock with a casing that is sealed to the bedrock.

DRINKING WATER WELL

A deep well (required to be greater than 100 feet in depth) for the purpose of delivering potable water.

DRIVEN WELL

Any well utilizing a drive-well point which is driven into the ground.

DUAL-USE WELL

A well which provides for both drinking water and as a geothermal exchange.

DUG WELL

Any excavation dug by man or machine which is used to provide water for irrigation or any other purpose.

GEOTHERMAL WELL

Any shaft or hole drilled into the surface of the earth, greater than 20 feet in depth, which is used or intended to be used in connection with coring, or the drilling for, prospecting for, or the production of geothermal resources, hot water, petroleum, natural gas, or other hydrocarbon substances, or shallow extraction wells for heating, agricultural or other purposes, or is used or intended to be used for the subsurface injection into the earth of oilfield waste, gases, water or liquid substances, including any such existing hole, shaft or casing which has not been abandoned, except that "geothermal, oil or gas exploratory or development well" shall not include "temporary exploratory probe," as defined in this section.

HABITABLE STRUCTURE

A structure that meets the requirements of 105 CMR 410.00: Minimum Standards of Fitness for Human Habitation (State Sanitary Code, Chapter II).

IRRIGATION WELL

A well (required to be 100 feet or greater in depth) not intended for potable use and not connected to a domestic supply.

MCL

Maximum concentration limit.

NONESSENTIAL PRIVATE WELL

Any well not used as a potable water source, including but not limited to irrigation wells.

OPEN-LOOP BOREHOLE

A water well designed to produce source water above land surface to provide heat transfer to a geothermal well. It is then returned to its source.

PERSON

An individual, corporation, company, association, trust, or partnership.

POINT OF ENTRY

The location where water distribution enters a structure.

POINT WELL

Any well utilizing a drive-well point which is driven into the ground.

PRIVATE WELL

Any dug, driven, or drilled hole, with a depth greater than its largest surface diameter, developed to supply water intended and/or used for human consumption and that will not serve either a number of service connections or a number of individuals sufficient to qualify as a public water system as defined in 310 CMR 22.00.

PUMPING TEST

A procedure used to determine the characteristics of a well and adjacent aquifer by installing and operating a pump.

REGISTERED WELL DRILLER

Any person registered with the Department of Environmental Protection Bureau of Resources Protection to dig or drill wells in the Commonwealth of Massachusetts.

SHALLOW WELL

Any well with a total depth of less than 100 feet, including but not limited to points, dug wells, driven wells, and wash wells.

SILLCOCK SPIGOT

Any faucet with a direct connection to a dwelling.

STATIC WATER LEVEL

The level of water in a well under nonpumping conditions.

STRUCTURE

A combination of materials assembled at a fixed location to give support or shelter, such as a building, framework, retaining wall, fence, or the like.

WASH WELL

Any well created through the removal of soils by water or fluid prior to the placement of the well piping, also known as "jetted well."

WELL

- A. An excavation or opening into the ground made by digging, boring, drilling, driving or other methods.
- B. Unless the context requires otherwise, words not herein defined shall have the same meaning as given in the applicable regulations of the Department of Environmental Protection (DEP).
- C. The following are not wells for the production of water as used in these regulations:
 - (1) Post holes;
 - (2) An excavation for the purpose of obtaining or prospecting for oil, natural gas, minerals other than water, products of mining and quarrying;
 - (3) Injection well regulated under DEP UIC program;
 - (4) Cathodic protection wells;
 - (5) Wells used for dewatering purposes in construction work;
 - (6) Monitor wells, geographical test borings and piezometers;
 - (7) Ponds, pits, sumps and drainage trenches;

(8) Contaminant recovery wells otherwise regulated by the DEP.

§ 145-13 **Well construction/deconstruction permit.**

- A. The application for a permit for the installation of any nonexempt well or borehole shall be made by a contractor, appropriately licensed.
- B. The property owner or his designated representative shall obtain a permit from the Board of Health or its agent prior to the commencement of construction and/or deconstruction of a private well, nonessential private well, irrigation well, monitoring well, hydrogeological well, geothermal well, agricultural well, drilled hole, borehole, or other hole drilled by mechanical means to a depth greater than 10 feet, and any other structure that is considered a well.
- C. Any new dwelling or occupied structure on property with a lot line that is within 500 feet of a municipal or water department service line must be connected to the water supply system.
- D. Permit applications.
 - (1) Each permit application to construct a well shall include the following:
 - (a) Application form furnished by the Nashoba Associated Boards of Health.
 - (b) The property owner's name and address.
 - (c) The well driller's name and proof of valid state registration.
 - (d) A plan with a specified scale, preferably signed by a registered surveyor or engineer, showing the location of the proposed well in relation to existing or proposed above or below ground structures.
 - (e) Potential sources of contamination.
 - [1] A description of visible prior and current land uses within 400 feet of the proposed well location, which represent a potential source of contamination, including but not limited to the following:
 - [a] Existing and proposed structures.
 - [b] Subsurface sewage disposal system.
 - [c] Subsurface fuel storage tanks.
 - [d] Public ways.
 - [e] Utility right-of-way.
 - [f] Any other potential sources of pollution.
 - [2] The Board may choose to require additional information pertaining to, but not limited to, all of the

above, including the location of landfills, waste sites, and agricultural land uses that are within 500 feet to 1,000 feet of the well site.

- (f) A permit fee to the Nashoba Associated Boards of Health.
- (g) A filing fee to the Town of Harvard per the Board of Health regulations.
- E. The permit shall be on site at all times that work is taking place. Each permit shall expire one year from the date of issuance unless revoked for cause. Permits may be extended for one additional six-month period, provided that a written request is received by the Board prior to the one-year expiration date. No additional fee shall be charged for a permit extension, provided that there is no change in the plans for the proposed well.
- F. Well construction permits are not transferable. Acquiring any additional necessary permits (e.g., plumbing and electrical permits, etc.) shall be the responsibility of the applicant.
- G. Electrical service shall not be grounded to the well.

§ 145-14 Required submissions after completion.

The following shall be submitted to the Board of Health or its agent within 30 days after completion of construction of any well:

- A. A copy of the state's Water Well Completion Report.
- B. A copy of the Water Quality Report required pursuant to § **145-27** of these regulations.

§ 145-15 Well location and use requirements.

- A. In locating a well, the applicant shall identify all potential sources of contaminants which exist or are proposed within 400 feet. When possible, the well shall be located upgradient of all potential sources of contamination and shall be as far removed from potential sources of contamination as possible, given the layout of the premises.
- B. Each well or borehole shall be accessible for repair, maintenance, testing, and inspection. The well shall be completed in a water-bearing formation that will produce the required quantity of water under normal operating conditions.
- C. The following minimum lateral/circumferential distances from potential sources of contamination shall apply:

Source of Contamination	Minimum Lateral/Circumferential Distance (feet)
Leaching facility (310 CMR 15.00)	100
Cesspool	100
Septic tank	50
Building sewer line	25

Source of Contamination	Minimum Lateral/Circumferential Distance (feet)
Property line	50
Public or private way, common drive, roadway easement, parking lot	50
Active or closed landfill	400
Hazardous waste spill site	400
Any type of surface water/wetland	100
In-ground pool	25
Septic expansion area	100
Slab or foundation	10

D. The following minimum distances from additional septic components shall apply:

Septic Component	Minimum Distance (feet)
Building sewer constructed of durable corrosion-resistant material with water-tight joints	25
Building sewer constructed of any other type of pipe	50

E. The Board reserves the right to impose minimum lateral distance requirements from other potential sources of contamination not listed above. All such special well location requirements shall be listed, in writing, as a condition of the well construction permit.

F. No private well, nonessential private well, or its associated distribution system shall be connected to either the distribution system of a public water supply system or any type of waste distribution system.

§ 145-16 Water quantity requirements.

Each well must supply an adequate quantity of water for the purpose for which it is intended and shall be tested to give satisfactory evidence of continuing capability to do so. Before being approved, every well shall be pump tested by the installer. The results of the test shall be submitted to the Board of Health on the previously described well completion report, and the Board shall maintain such as a public record. The following are guidelines for what will be considered satisfactory, but the Board of Health may vary these guidelines in particular cases where it is demonstrated that the well will furnish an adequate supply of water for the purpose for which it was intended.

A. Shallow wells, washed wells, points, pits or excavations are not allowed. The Board may grant a variance for shallow wells, washed wells, points, pits or excavations for irrigation purposes or when a drilled well cannot be utilized. Where a variance has been granted, shallow wells, washed wells, points, pits or excavations shall produce a minimum of 15 gallons per minute after performing a four-hour pump test. Wash wells must be tested every six months and the results submitted to the Board of Health office. No shallow wells will be allowed in a primary water or secondary water resource district as designated under the Harvard Zoning Bylaw, with exceptions for agriculture and/or other uses when

deemed appropriate by the Board.

- B. Well production. After pump testing, all drilled wells shall produce at least the following gallons per minute:

Static Water Depth in Well (feet)	Required Yield (gallons per minute)
100	6
200	5
300	4
400	3
500	2

§ 145-17 Disinfection requirements.

All private wells and nonessential private wells shall be disinfected following construction, rehabilitation, and well or pump repair before the well is placed into service. The well shall be pumped to waste (not to the septic system) until the water is as clear as possible. Thereafter the well and pumping equipment (and plumbing, if installed) shall be disinfected with a solution containing at least 50 ppm of chlorine. The well shall remain in contact with the chlorine solution for a minimum of 24 hours before the well is pumped to waste (not to the septic system) and the water found to be free of chlorine.

§ 145-18 Water sampling and quality testing requirements.

[Amended 9/12/23; Effective 10/23/23]

- A. The Harvard Board of Health, Nashoba Associated Boards of Health, Massachusetts Department of Environmental Protection (MassDEP) certified laboratories, a Massachusetts Licensed Site Professional, an Approved Sampler, or other persons authorized by the Board of Health upon submittal and preapproval of a waiver, shall collect water samples immediately following construction or rehabilitation and disinfection of a well. A representative sample for laboratory analysis shall be collected at pump discharge or from a tap in the pump discharge line. Chemical and bacteriological analysis shall meet the standards set forth by the Massachusetts Drinking Water Standards & Guidelines for potable water for the following items: total coliform, fecal coliform/E.coli, arsenic, lead, nitrate nitrogen, nitrite nitrogen, Gross Alpha and radon; approval of the results by the Harvard Board of Health or the Nashoba Associated Boards of Health shall be obtained before the well shall be put into service as a potable supply. All wells shall be tested for the following secondary standards: calcium, copper, iron, magnesium, manganese, potassium, sodium, alkalinity, ammonia, chloride, chlorine, color, conductivity, fluoride, hardness, odor, pH, sulphate, turbidity, and sediment. Certain addresses may also be required to test for PFAS per the Harvard Board of Health Policy: Well water quality testing for property sales and new construction.
- B. All drinking water wells located on property to be sold shall be similarly sampled using the untreated source and tested as described in § 145-18A. The analytical results must be submitted to the Board of Health no less than 30 days prior to the transfer of ownership and are valid for 12 months from the sample date. All drinking water wells shall be retested at the time of sale and/or transfer of the property if standards are not met at initial testing and treatment is required.
- C. The owner of a rental property shall similarly sample in accordance with § 145-18A and make the results

of all water quality tests available to all occupants of the property and the Board of Health. Occupants, upon lease, have the right to request water quality results which are less than 24 months old. In cases where the well water does not meet the water quality standards outlined above, the Board of Health may require the property owner to provide an alternative approved source of drinking water for the occupants.

- D. Water samples shall be analyzed by a laboratory certified to perform drinking water analysis by the MassDEP, and a record of the results sent to both the Harvard Board of Health and the Nashoba Associated Boards of Health. Payment for fees associated with sampling performed by the Health Agent and subsequent analysis must be received by the Nashoba Associated Boards of Health prior to sampling.
- E. Following receipt of water quality test results, the well owner shall submit a Water Quality Report to the Board of Health, which includes:
 - 1) A copy of the MassDEP certified laboratory's test results;
 - 2) The name and contact information of the individual who performed the sampling;
 - 3) Where in the system the water sample was obtained.
- J. The owner of a property for sale shall give copies of all available water quality test results of which he/she has knowledge (regardless of age of results) for the private well in question to any buyer and/or broker involved in the transfer and to the Board of Health.
- K. The Board of Health reserves the right to require retesting of the above parameters, or testing for additional parameters when, in the opinion of the Board, it is necessary due to local conditions or for the protection of public health, safety, welfare and the environment. All costs and laboratory arrangements for the water testing are the responsibility of the property owner. The sample shall be collected by the Board of Health, its agents, or an Approved Sampler.
- L. Water samples submitted for bacteriological analysis shall meet the standard of zero total coliform per 100 milliliters of sample using a method accepted in the latest edition of Standard Methods for the Examination of Water and Wastewater, American Public Health Association. Following a positive coliform sample, two consecutive negative results are required.
- M. Arsenic levels shall not exceed 10 ppb. Water with arsenic levels that exceed 10 ppb shall require notification through the property deed after remediation to concentrations below 10 ppb.
- N. Water with radon levels exceeding 10,000 pCi/L shall require notification through the property deed. Adsorption and absorption filters such as charcoal, which would become radioactive waste as a result of their use, shall not be used for radon removal from water.
- O. If the Gross Alpha is equal to or greater than 5 pCi/L, further testing is required for radium (226 + 228). If Gross Alpha is equal to or greater than 15 pCi/L, further testing is required for uranium and for radium (226 + 228). Maximum contaminant levels (MCLs) for radionuclides are listed below:
 - 1) Radium (226 + 228): 5 pCi/L. Water with radium (226 + 228) levels that exceed 5 pCi/L shall require notification through the property deed after remediation to concentrations below 5 pCi/L.
 - 2) Uranium: 30 ug/L. Water with uranium levels that exceed 30 ug/L shall require notification through the property deed after remediation to concentrations below 30 ug/L.

- P. All treatment systems employed for the removal of a contaminant shall be a point of entry and whole supply system. Any use of a treatment system for the purposes of achieving compliance with any drinking water standard shall require retesting to demonstrate effectiveness and shall require notification of the property record at the Registry of Deeds of the existence and need for operational equipment in order to provide potable water.
- Q. This regulation requires that private drinking water wells meet all current Massachusetts' Primary and Secondary Drinking Water Standards and Guidelines adopted by the MassDEP Office of Research and Standards (ORS). In any case where a private drinking water well does not meet such Standards or Guidelines necessary for the protection of public health, safety or welfare, the Board of Health may take action, including but not limited to, requiring the property owner to provide an alternative source of drinking water.

§ 145-19 Well construction requirements.

- A. Wells shall be constructed in conformance with the recommendations of the latest edition of the Manual of Individual Water Supply, USEPA, Water Supply Division. (Note: dual-use wells, springs, shallow wells, washed wells, points, pits or excavations shall not be used for the purpose of potable water supply without a Board of Health variance.)
- B. All individual wells, geothermal wells, monitoring wells and test wells shall be constructed in strict compliance with the specifications set forth in these regulations and any applicable MA or federal requirements (e.g., MA DEP "Guidelines for Ground Source Heat Pump Wells").
- C. All individual wells, geothermal wells, monitoring wells and test wells constructed pursuant to these regulations shall be constructed or altered by a duly licensed well contractor, geothermal well installation contractor, or pump installation contractor. The licensed well or geothermal well installation contractor is responsible for taking all reasonable precautions to ensure the maintenance of all isolation distances as set forth in these regulations. This includes, but is not limited to, visual site inspections, drilling the well in the location specified on the well permit and confirmation of these distances with the abutting property owner, if necessary.
- D. Wells must be completed above grade. The casing shall extend at least 18 inches above the finished ground surface unless the well is located in a floodplain. For wells constructed in a floodplain, the casing shall extend at least two feet above the level of the highest recorded flood. The top of the casing shall be reasonably smooth and level.
- E. General well design and construction.
 - (1) All private wells shall be designed such that:
 - (a) The materials used for the permanent construction are durable in the specific hydrogeologic environment that occurs at the well site.
 - (b) No unsealed opening that could conduct surface water or contaminated groundwater vertically to the intake portion of the well or transfer water from one formation to another will be left around the well.
 - (2) Permanent construction materials shall not impart toxic substances, taste, odors, or bacterial contamination to the water in the well.

- (3) The driller shall operate all equipment according to generally accepted standards in the industry and shall take appropriate precautions to prevent damage, injury or other loss to persons and property at the drilling site.
- (4) Well construction design shall insure that surface water does not enter the well through the opening or by seepage through the ground surface. Construction site waste and materials shall be disposed of in such a way as to avoid contamination of the well and the aquifer. During any time that the well is unattended, the contractor shall secure the well in a way so as to prevent either tampering with the well or the introduction of foreign material into the well.
- (5) Well yield should be measured and recorded at least every 50 feet during drilling.
- (6) All water used for drilling, well development, or to mix a drilling fluid shall be obtained from a source which will not result in contamination of the well or the water-bearing zones penetrated by the well. Water shall be conveyed in clear sanitary containers or water lines and shall be chlorinated to an initial

concentration between 50 mg/L and 100 mg/L.

- (7) A free-chlorine residual of 10 mg/L shall be maintained in any water used at the drill site. Water from wetlands, swamps, ponds and other similar surface features shall not be used.
- (8) All drilling equipment, including pumps and down hole tools, shall be cleaned and disinfected prior to drilling each new well or test hole.
- (9) All drilling fluids shall be nontoxic. Drilling fluid additives shall be stored in clean containers and shall be free of material that may adversely affect the well, the aquifer, or the quality of the water to be pumped from the well. Surfactants should be biodegradable. The use of biodegradable organic polymers shall, when possible, be avoided.
- (10) All wells, including those that have been hydro-fractured, shall be developed so as to remove fine materials introduced into the pore spaces or fractures during construction.
- (11) One or more of the following methods shall be used for development: overpumping, backwashing, surging, jetting, air-lift pumping.
- (12) The completed well shall be sufficiently straight so that there will be no interference with installation, alignment, operation or future removal of the permanent well pump.

§ 145-20 **Deconstruction requirements.**

- A. A well that is abandoned shall be destroyed to protect the groundwater and to eliminate potential physical hazards. Wells shall be sealed with nonhazardous, impervious materials which shall be permanently in place. All casing materials, pumping equipment, and distribution lines shall be removed. The excavation shall be returned to the current existing grade of the surrounding land. A record of abandonment shall be kept on file in the offices of the Board of Health and Nashoba Associated Boards of Health.
- B. Abandoned wells, test holes, and borings shall be decommissioned so as to prevent the well, including the annular space outside the casing, from being a channel allowing the vertical movement of water.
- C. The owner of a private well shall decommission the well if the well meets any of the following criteria:
 - (1) Construction of the well is terminated prior to completion of the well.
 - (2) The well owner notifies the Board that the use of the well is to be permanently discontinued.
 - (3) The well has been out of service for at least three years.
 - (4) The well is determined by the Board to be a potential hazard to public health or safety and the situation cannot be corrected.
 - (5) The well is determined by the Board to be in such a state of disrepair that its continued use is impractical.

- (6) The well has been determined by the Board to have the potential for transmitting contaminants from the land surface into an aquifer or from one aquifer to another and the situation cannot be corrected.
- D. The property owner shall be responsible for ensuring that all abandoned wells and test holes or borings associated with private well installations are properly plugged in accordance with the best management practices. Only registered well drillers may plug abandoned wells, test holes, and borings.
- E. In the case of new well construction, all test holes and borings shall be plugged before the well driller completes work at the site.
- F. For each private well destroyed after the effective date of these regulations, the owner shall comply with the following requirements:
 - (1) A well destruction permit application.
 - (2) A well destruction permit.
 - (3) A well driller's or digger's report of destruction.

§ 145-21 Irrigation wells.

- A. Irrigation wells shall be deep wells (bedrock; 100-foot minimum deep well).
- B. To prevent cross-connection of potable and nonpotable water supplies, no dwelling shall be served in any capacity by both a private well and the Town of Harvard's public water system unless the two water systems are completely separate. In addition to such a complete separation, a backflow protection device, approved by the Plumbing Inspector and the public water supplier, must be installed in the dwelling to prevent backflow and cross-connections with the Town's public water supply.
- C. Irrigation wells shall provide water through sprinkler heads or through spigots mounted on the well head. The Board of Health prohibits the use of sillcock spigots for irrigation wells.
- D. Conversion of a preexisting drinking water well to an irrigation well shall require permitting and approval by the Harvard Board of Health.
- E. No irrigation well or nonessential well shall be permitted in Zone II of a public water supply.
- F. There shall be no plumbing connecting an irrigation well to a habitable structure.
- G. The well will not be used for consumption. All spigots served by an irrigation well, in addition to the well itself, must be identified by a firmly attached yellow metal tag having the shape of a four-inch equilateral triangle bearing the legend "NOT SAFE FOR HUMAN CONSUMPTION" in letters not less than 7/16 inch in height.
- H. All irrigation wells shall post a sign (eight inches by 12 inches) notifying the public that it is in fact an "irrigation well in use."

§ 145-22 **Agricultural wells.**

- A. There shall be no plumbing connecting an agricultural well to a habitable structure.
- B. All spigots served by an agricultural well, in addition to itself, must be identified by a firmly attached yellow metal tag having the shape of a four-inch equilateral triangle bearing the legend "NOT SAFE FOR HUMAN CONSUMPTION" in letters not less than 7/16 inch in height.

§ 145-23 **Geothermal wells.**

- A. Location of closed-loop geothermal boreholes (dual-use open-loop geothermal systems are prohibited) shall be located in conformity with the chart below.

Source of Structure	Minimum Lateral/Circumferential Distance (feet)
Sewer lines	10
Septic tanks	25
Springs	100
Septic drain fields	50
Water wells	100
House to septic tank connection	10
House to sewer line connection	10

- B. Source of drilling water for closed-loop geothermal boreholes.
 - (1) All water used in drilling and construction of a closed-loop geothermal borehole shall be from a public water supply or water well.
 - (2) All water used in the drilling or construction process shall be treated with enough chlorine product to retain a free chlorine residual of at least 10 parts per million.
 - (3) The driller shall take all steps necessary to maintain safety around the borehole until the closed loop is installed and grouted in the borehole.
- C. A report of well driller for a closed-loop geothermal borehole system shall be submitted by the driller to the Board of Health within 30 days after the drilling or closure of the last closed-loop borehole in the system at the site.
- D. Closed-loop geothermal borings and underground lines associated with heat transfer to geothermal boreholes are required to have detectable underground tape placed above the boring or heat transfer lines within 18 inches of land surface to denote the subsurface location of the installations.
- E. For systems with 10 or fewer closed-loop boreholes, the driller is required to provide a master plat to both the owner and the Board of Health of the location of each borehole. The sketch shall include related distances from major buildings, septic tanks and field lines and sewer lines and be submitted

with the report of well driller within 30 days upon completion of drilling of the last borehole on a given project. Site plans drawn up by a licensed engineer may be used if the driller is unable to provide a master sketch.

§ 145-24 Enforcement.

- A. The Board of Health, or its agent, shall investigate violations of these regulations and may take such actions as the Board or its agent deems necessary for the protection of the public health and the enforcement of these regulations.
- B. If any investigation reveals a violation of these regulations, the Board or its agent shall order the private well owner to comply with the violated provisions.
- C. These orders shall be in writing and served in the following manner:
 - (1) Personally, by any person authorized to serve civil process; or
 - (2) By any person authorized to serve civil process by leaving a copy of the order at the well owner's last and usual place of abode; or
 - (3) By sending the well owner a copy of the order by registered or certified mail, return receipt requested, if the well owner is within the commonwealth; or
 - (4) If the well owner's last and usual place of abode is unknown or outside the commonwealth, by posting a copy of the order in a conspicuous place on or about the premises or by advertising it for at least three out of five consecutive days in one or more newspapers of general circulation within the Town of Harvard.

§ 145-54 Appeals.

Any person aggrieved by the final decision of the Board may seek relief therefrom within 30 days in any court of competent jurisdiction, as provided by the laws of this commonwealth.

§ 145-26 Violations and penalties.

Any person who violates any provision of these regulations, or who fails to comply with any order issued hereunder by the Board of Health, may be fined no less than \$10 and no more than \$500 per day. Each day that a violation exists and each day's failure to comply with an order shall constitute a separate offense.

§ 145-27 Variances.

- A. The Board may grant a variance from the application of these regulations when, in its opinion, the enforcement thereof would do manifest injustice, and the applicant has demonstrated that the equivalent degree of protection will still be provided to the private water supply without strict compliance with the provisions of these regulations.
- B. Every request for a variance shall be made in writing and shall state the specific variance sought and the reasons therefor. The writing shall contain all the information needed to assure the Board that, despite the issuance of a variance, the public health and environment will be protected. Notice of the consideration of variances for drinking water wells shall be given by the applicant, at least 10 days prior

thereto, by certified mail to all direct abutters to the property upon which the private well is located. The notice shall include a statement of the variance sought and the reasons therefor. Any grant or denial of a variance shall be in writing and shall contain a brief statement of the reasons for approving or denying the variance. A copy of each variance shall be on file for 30 days following its issuance and shall be available to the public at all reasonable hours in the Office of the Board of Health.

- C. Any variance may be subject to such qualifications, revocation, suspension, condition, or expiration as is provided in these regulations or as the Board expresses in its grant of the variance. A variance 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 an opportunity to be heard.
- D. Emergencies.
 - (1) If an emergency condition exists, that is, if the lack of water poses an immediate and significant danger to the health and welfare of persons, livestock or domestic fowl or crops, then the Board of Health or its agent shall issue a well construction permit within 24 hours of receipt of the completed permit application. It is the responsibility of the well contractor and/or property owner to substantiate that an emergency condition exists by submission of a signed statement to the Board of Health or its agent. Emergency well construction permits will be issued only to replace an existing water supply where the lack of water poses an immediate and significant threat to human health or when the Board of Health determines that other exceptional circumstances exist.
 - (2) The drilling process for an emergency well construction must begin within 24 hours of receipt of the permit except when inclement weather conditions or other abnormal circumstances occur.

§ 145-28 Severability.

If any provision of these regulations or the application thereof is held to be invalid by a court of competent jurisdiction, the invalidity shall be limited to said provision(s) and the remainder of these regulations shall remain valid and effective. Any part of these regulations subsequently invalidated by a new state law or modification of any existing state law shall, by an amendment of the regulations, be brought into conformity with the new or amended law. However, the revision necessary to comply with state law shall be deemed to be effective immediately, and the regulations shall be applied and enforced so as to comply with state law.

§ 145-29 Effective date; amendments.

These regulations were amended and adopted by vote of the Town of Harvard Board of Health at a public meeting on November 9, 2021, and are to be in full force and effect on and after November 23, 2021. Before said date, these regulations shall be published and a copy thereof placed on file in the Board of Health office and filed with the Department of Environmental Protection in Boston. These regulations or any portions thereof may be amended, supplemented or repealed from time to time by the Board, with notice as provided by law, on its own motion or by petition.

§ 145-30 Disclaimer.

The issuance of a well permit shall not be construed as a guarantee by the Board of Health or its agent that the water system will function satisfactorily nor that the water supply will be of sufficient quality or quantity for its intended use.