

Depth to groundwater

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

Issue Overview Title 5 requires 4 feet "depth to groundwater" if the percolation rate is more than 2 minutes per inch and 5 feet if the percolation rate is less than 2 minutes per inch. "Depth to groundwater" refers to the minimum vertical separation distance between the stone underlying the soil absorption system and the high groundwater elevation. The purpose of the requirement is to ensure that the effluent percolates through enough soil to be cleansed. Some municipalities require a "depth to groundwater" greater than 5 in aquifer protection districts or in soils with certain percolation rates (typically faster than 2 minutes per inch.)

Research Coding Researcher looked for the relevant language in the septic regulations – specifically references to vertical separation between the soil absorption system (or "lowest elevation of leaching elements") and high groundwater elevation.

Note that there are several municipalities that require five feet depth to groundwater in all cases, but that do not require six feet in any cases. Such regulations differ from Title 5 in their "depth to groundwater" requirement, but the difference is not captured in the answers to this question.

Acton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

6 The Acton Regulations require that "leaching works constructed in areas where the underlying natural soil material is no sharp coarse sand or sharp gravel shall have a minimum of 6 inches of Title 5 Fill Material (as defined in 310 CMR 15.355(3)) placed beneath the stone," and adds that "the Board of Health or its agents may require this minimum 6" of gravel at its discretion, regardless of the type of underlying soil material." Acton Board of Health Rules and Regulations, Article 11 (11-9.3, 11-9.4) (adopted 6/14/2004).

In addition, the Acton Regulations have five conditions under which a permit can be allowed for construction in a "groundwater protection zone" as defined in Article 16, (Section 16.2). One of the requirements is that "the percolation rates observed in accordance with required testing procedure exceeds six minutes per inch, or the depth from the bottom of the septic system to groundwater is at least six feet, or the system is at least 1.5 miles from any current or reasonably likely Well Protection Area." Acton Board of Health Rules and Regulations, Article 16 (Section 16-6.1.2) (adopted 6/14/2004).

Note: in survey received on 3/21/05 from Acton, the answer marked to the question, "What is the highest depth to groundwater requirement in any area," is "8." Since the researcher did not find a reference in the regulations to "8, the answer was left as "6."

Amesbury *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Amesbury regulations to the "depth to groundwater" requirement.

Ashland *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Researcher found no reference to depth to groundwater requirement in the Ashland Regulations, and thus determined that this requirement is the same as the state.

Auburn *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Auburn regulations to a requirement for "depth to groundwater."

Avon *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

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Ayer *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Ayer regulations to a requirement for "depth to groundwater."

Bellingham *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Survey received from Bellingham Health Agent Mike Graf on 6/1/05 marks that Bellingham has local septic regulations. He writes that they were adopted before 1995 and the Title 5 changes in 1995 superceded most of the local regulations. The only answer he marked as "different from Title 5" is the setback from wells.

Berkley *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 From the section titled "Berkley Regulations Which Vary From Title V," "1. A five (5) foot separation is required between the bottom of the leaching area and the water table for all systems."

(Subsurface Disposal, Well and Development Regulations, Adopted 2003)

Berlin *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 From Section V, C. Depth to Maximum Groundwater Elevation, "[n]o leaching facility (pit, chamber, trench, galley, or field) shall be constructed in areas where the maximum groundwater elevation is less than 5 feet below the bottom of the facility."

Beverly *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 The researcher found no reference in the Beverly Regulations to the depth to groundwater requirement, and was also informed by Joseph Reale that Beverly follows Title 5 in regard to all septic matters except minimum leaching field size.

Billerica *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Researcher found no reference to minimum depth to groundwater requirement in the Billerica Board of Health Rules & Regulations.

Bolton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 From the Bolton Board of Health, Requirements for the Subsurface Disposal of Sanitary Sewage, Regulation 3 (Adopted 1977, Amended 2001).

“Groundwater-Elevation: On any lot, in the area to be used for leaching, except as noted below, there will be at least two deep observation holes plus any additional number which, in the opinion of the Bolton Board of Health or its Agent, will be necessary to determine the consistency (or lack there of) of the character of the soil, the groundwater elevation and the presence of bedrock or impervious materials. The deep observation holes shall be examined to a depth of at least (10) feet unless this depth is unattainable because of bedrock, etc. Deep observation holes must show at least four (4) feet of consistent naturally occurring soil material below the bottom of the proposed leaching system.”

Boxborough *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 On 11/16/04 the Boxborough Health Agent confirmed that depth to groundwater requirements are according to state guidelines.

Boxford *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Boxford Regulations to minimum depth to groundwater requirement.

Boylston *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Boylston regulations to a "depth to groundwater" requirement.

Bridgewater *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 "All subsurface disposal systems shall be constructed 4 feet above the maximum ground water table." From The Town of Bridgewater's Wastewater Rules and Regulations, Design Requirements, no. 16 (Adopted 1989).

Canton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 The only place this is addressed in the supplemental regulations is in the section about percolation tests:

Canton Board of Health Regulations, Section 2.4 On-site Sewage Disposal Systems (received by fax August 2004)

4. Percolation tests and percolation rates

Percolation tests conducted prior to August, 1980 are not valid

Subsurface sewage disposal systems shall be located in an area where there is at least a four foot depth or five foot where less than 2 minutes per inch perc rate has been established of naturally occurring pervious soil below the entire area of the leaching facility, with a percolation rate less than or equal to 20 minutes per inch.

Carlisle *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference to depth to groundwater requirements in the Town of Carlisle Supplementary Regulations for Sewage Disposal Systems.

Survey received from Carlisle on 4/22/05 marks the answer: "Use calculated offset."

The Carlisle Supplementary Regulations states:

New Installations

Three (3) deep hole tests shall be required; two (2) reasonably spaced in the primary leaching area and one (1) in the reserve leaching area. Additional testing may be required at the discretion of the inspector.

The following two high groundwater testing procedures shall be used to determine the design groundwater elevation at the site:

1. Observe actual groundwater elevation during spring high groundwater season as set by the Board of Health. Adjust the observed groundwater reading by adding the groundwater offset for the date of testing. The offset correction will be determined by the Board of Health using Carlisle wells as index wells, or if necessary historical USGS well data from adjacent towns. If no groundwater is observed in the deep holes, assume groundwater is at the bottom of the hole and adjust using the groundwater offset. The Board shall use engineering judgment in applying all, a portion, or none of the required offset correction. This will be based on the individual site topography and deep observation hole data.

2. Determine the high groundwater level using soil mottling as outlined in the 1995 Title 5.

The design high groundwater level shall be the higher of the two results previously determined (most restrictive condition).

Justification: The error that can occur in calculating a groundwater correction is reduced significantly when the calculation is based on high groundwater readings as opposed to readings taken during drier periods of the year. Therefore, deep observation holes for all new construction shall be dug, observed and witnessed during high groundwater season. In order to promote conservative engineering, the higher of the two groundwater levels as determined by observation and offset or mottling shall be used as the basis of the design. All groundwater correction calculations are the responsibility of the Board's engineering consultant.

Carver *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Carver regulations to a "depth to groundwater" requirement.

Chelmsford *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Researcher found only one reference to an adjustment in required depth to groundwater height, which appears in the Town of Chelmsford General Provisions, Chapter 200, Article VII, Board of Health, Groundwater Protection Zone (applicable as amended 4/3/95):

201-28. Modification of Existing Regulations

Article VI, Subsurface Sewage and Wastewater Disposal, of this chapter is hereby modified in the following way:

B. Increase distance above ground water from 4 to 5 feet (In this zone).

Researcher determined that the Chelmsford depth to groundwater requirement is the same as the state unless the land in question falls into the Groundwater Protection Zone as created in article VII.

Cohasset *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Cohasset Regulations to minimum depth to groundwater requirement.

Concord *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 no reference in the Concord Regulations to depth to groundwater requirements.

Douglas *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Douglas regulations to a "depth to groundwater" requirement.

Dover What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Dover regulations to depth to groundwater requirement.

Dracut What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 Representative of the Board of Health said (10/13/04) that they only enforce one regulation that supplements Title 5 - the setback from wetlands.

Dunstable What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Dunstable regulations to a "depth to groundwater" requirement.

Duxbury What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

6 "(1) The minimum vertical distance from the bottom of the stone underlying the soil absorption system to the maximum high groundwater elevation shall be:
(a) five (5) feet in soils with a recorded percolation rate of more than two (2) minutes per inch;
(b) six (6) feet in soils with a recorded percolation rate of two (2) minutes or less per inch."

Town of Duxbury, Supplementary Rules and Regulations to the State Environmental Code, Section 1.11 (Effective July 1, 2000).

Easton What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference to the depth to groundwater requirement in the Easton Regulations.

Essex What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference to a depth to groundwater requirement in the Essex regulations.

Foxborough

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

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The minimum depth to groundwater required by the Foxborough Regulations is the same as the state, with one exception. The Foxborough Regulations apply a depth to groundwater minimum of 6 feet for "Zone II Aquifer Protection areas." This includes the depth to groundwater from leaching pits, galleries, chambers, trenches, and fields installed in those areas.
Foxborough Board of Health Septic System Regulations, Sections 15.11-15.15 (effective January 1, 1994).

Georgetown

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

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No reference in the Georgetown regulations to a requirement for "depth to groundwater."

Gloucester

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

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No reference in the Gloucester regulations to a "depth to groundwater requirement."

Grafton

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

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The only reference to depth to groundwater in Grafton's Supplement to Title V states that septic design must use the most restrictive depth requirement unless otherwise stated by the BOH.

However, the researcher found no provisions specifying on what grounds the BOH determined depth to groundwater. On 12/6/04, the researcher confirmed with the BOH via phone that Grafton's minimum depth to groundwater is the same as the state's.

"Designers must incorporate the most restrictive perc rate and groundwater depth for design unless supplemental information or additional soil testing is performed which will support variations from this policy. The highest elevation in the area of the proposed system shall be used for design determination of the high groundwater table unless said supplemental information is provided and accepted by the Board or its Agent." From the Town of Grafton's Supplement to Title V, "Design" n. 3 (Revised 2004).

Groton

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

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From SECTION I – REGULATIONS FOR SUBSURFACE SEWAGE DISPOSAL, A. Testing Requirements,

"5. There must be a minimum of five (5) feet of pervious material between the bottom of the leaching facility and the ground water elevation and/or any impervious layer. The offset above ground water may be increased depending upon climatic and/or site conditions encountered."

(Town of Groton Sewage Disposal Requirements, Adopted 2001, Amended 2003)

Groveland

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Groveland regulations to a "depth to groundwater" requirement.

Halifax

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 A 'depth to groundwater' requirement is mentioned only in reference to those areas in the town with 'soils of special concern'.

From Section 1.05 Soil Evaluation and Percolation Testing,

"(2) Any land on which a percolation test results in a perc rate from 31 to 60 minute will be considered 'Soils of Special Concern' and will be subject to the design criteria spelled out in section 1.06 (7) Design Criteria for Soils of Special Concern."

Then in Section 1.06 Design Criteria, (8) Soils of Special Concern,

"(a) Any septic systems designed on 'Soils of Special Concern' must have a minimum lot size of 80,000 square feet of contiguous uplands. This information will be indicated on the proposed septic plan and As-built plan.

(b) A minimum of 27,000 square feet must remain open space and be protected by a deed restriction. This information will be indicated on the proposed septic plan and As-built plan...

(g) All new construction and upgrade systems shall have at least a 5 foot separation from the bottom of the system and the seasonal high ground water level."

(Town of Halifax Supplementary Rules and Regulations to the State Environmental Code: Title 5, 310 CMR 15,000, Adopted 2003)

Hanover

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference to a minimum depth to groundwater requirement in the Hanover regulations.

Hanson

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 The regulations only cover what needs to be presented in submitted plans.

Harvard

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 The Nashoba health agent for Harvard (11/16/04) said that the depth to groundwater is 5, irrespective of the percolation rate.

Haverhill

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Haverhill regulations to a "depth to groundwater" requirement.

Hingham *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

6 According to Bruce T. Capman, RS, Executive Health Officer, there is a requirement of 6 feet for percolation rates under 5 minutes.

Mr. Capman stated to researcher that for anything else there is a 5' "depth to groundwater" minimum requirement in Hingham.

"No leaching Facility shall be constructed in soils where the Maximum Groundwater Elevation or mean high tidal water is less than five (5) feet when mounded below the bottom of the Leaching Facility, except that if the percolation rate of the soil in the leaching area is between two (2) and five (5) minutes per inch, at least six (6) feet of naturally occurring permeable material must exist between the bottom of the Leaching Facility and the mounded Maximum Groundwater Elevation and/or mean spring tidal water."

Town of Hingham Board of Health Supplementary Rules and Regulations for the Disposal of Sanitary Sewage, Section VII (4E)(effective 10/15/98)

Holliston *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

6 From Section 7. Minimum Setback Distances and Vertical Clearance, "The vertical distance from any leaching surface of a subsurface disposal system to bedrock, ledge, fractured ledge or impervious soil shall be a minimum of 6 feet for soils having a percolation rate of 2 minutes per inch or less and 5 feet for soils having a percolation rate of greater than 2 minutes per inch."

(Holliston BOH OSDS Regulations, Adopted 1997)

Hopedale *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 The Board of Health (11/30/04) indicated that the only local requirement for septic systems related to filters.

Hopkinton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference to depth to groundwater requirement in the Hopkinton regulations.

Ipswich *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Ipswich regulations to a "depth to groundwater" requirement.

Kingston *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 "Subsurface sewage systems shall not be constructed in areas where there is less than 4 feet of naturally occurring pervious soil between the bottom of the excavation and the maximum ground water table." From the Town of Kingston Board of Health Rules and Regulations Supplement to Title V, page 5 (Revised 2002).

Lakeville *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Lakeville regulations to a "depth to groundwater" requirement.

Lancaster *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 From the section 5, 5.2 Maximum Groundwater Elevation,
"At least one maximum groundwater-level determination shall be made in the primary leaching area and at least one shall be made in the reserve area. The number and locations of the determinations shall provide a reasonable basis for assessing groundwater conditions in the area of the system. The Board's agent or the Board may require determinations in addition to the minimum number here in. Groundwater observations shall be made in deep test holes. Offset between groundwater elevation or mottling as determined by soil evaluation and bottom of leaching system shall be five (5) feet."

(Regulations of the Lancaster Board of Health, Adopted 1999)

Leicester *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Leicester regulations to a requirement for "depth to groundwater."

Leominster *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Leominster regulations to a requirement for "depth to groundwater."

Lexington *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Lexington regulations to a "depth to groundwater" requirement.

Lincoln *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 According to the Town of Lincoln, Board of Health Supplementary Regulations, Section 15.212(c)Depth to Groundwater (1996), Lincoln has amended the state depth to groundwater regulations in Title 5 by adding the following, but keeps the state's minimum requirement as stated in Title 5:
"Basement or lowest floor of new construction must be constructed at least 2' above maximum groundwater elevation as determined by soil tests."

Littleton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Littleton regulations require a minimum depth to groundwater requirement of 5 feet, regardless of the percolation rate: "The bottom of the leaching system offset from groundwater or mottling, as determined by the soil evaluation, will be five (5) feet." The Town of Littleton Board of Health Regulations, Requirements for the Subsurface Disposal of Sanitary Sewage, Regulation 4 (applicable as revised 8/11/03).

Lunenburg *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

6 From Article IV: Sewage Disposal, Section 3, "Percolation and deep observation hole [tests] must meet specific design criteria and time limits. In accordance with 310 CMR 15.100 (1,2) soil evaluation will be used to determine groundwater. When a determination of groundwater isnt possible using soil evaluation, criteria (b) and (c) will be used. The bottom of the proposed leaching area, at all points, must be designed at least:
(a)Four (4') feet above the estimated water table as determined by soil evaluation.
(b)Five (5') feet above the highest ground water elevation as noted when the test is taken during March 1 - April 30.
(c)Six (6') feet above the highest ground water elevation as noted when the test is taken during May 1 - May 30, and February 1 - February 28."

(Town of Lunenburg Board of Health Regulations, Adopted 1921, Amended 2002)

Manchester-by- *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference to "depth to groundwater" in the Title 5 amendments.

Mansfield *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Mansfield regulations to a "depth to groundwater" requirement.

Marshfield *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Since percolation test must be performed in 4ft of naturally occurring soils and there is no explicit reference to a required minimum depth to ground water, researcher determined that Marshfield follows state guidelines.

"3.3 SUBSOIL AND GROUND WATER DETERMINATION (adds to SEC Title 5, Reg. 3.3)

The Board of Health shall require that one or more observation pits be dug to a depth of four feet below the bottom of the proposed leaching facility to determine the maximum ground water elevation and the elevation of any impervious material. The Board may also require additional test holes in the area reserved for expansion of the disposal field. In soils where maximum ground water levels are close to ground surface as determined by the Board of Health from such sources as the U.S. Soil Conservation Service Survey of Plymouth County, or other expert sources, or from past experience of the Board of Health, the Board of Health shall require either: (1) that the maximum ground water level determination be made during the wettest season of the year, normally March and April or (2) that allowance be made for a high water level if the Board of Health permits the determination to be made outside the wettest season."

From Marshfield Rules and Regulations for the Disposal of Sanitary Sewage, Section 3.3. (Adopted 1978, Amended 2000)

Medfield *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

6 From Section 7. Minimum Setback Distances and Vertical Clearance, "The vertical distance from any leaching surface of a subsurface disposal system to bedrock, ledge, fractured ledge or impervious soil shall be a minimum of 6 feet for soils having a percolation rate of 2 minutes per inch or less and 5 feet for soils having a percolation rate of greater than 2 minutes per inch."

(Medfield BOH OSDS Regulations, Adopted 1995)

Medway *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Medway regulations to a provision modifying the state's depth to groundwater requirement.

Merrimac *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Merrimac regulations to a "depth to groundwater" requirement.

Middleborough *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Middleborough regulations to a "depth to groundwater" requirement.

Middleton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Middleton regulations to depth to groundwater minimum requirement.

Millbury *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Millbury regulations to a requirement for "depth to groundwater."

Millis *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Millis regulations to minimum depth to groundwater requirements.

Natick *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 Section 15.

"The construction of leaching facilities in clean granular fill shall be permitted in the following instances: ...

b. Where a depth of at least four feet of pervious material (determined by a percolation test) in natural soil can be maintained below the bottom of the leaching area. In no case will excavation into impervious material be allowed without penetrating into pervious material as in (a) above.

Section 16.

No leaching (pits, galleries, field, chambers, or trenches,) shall be constructed where there is less than four feet of natural occurring pervious soil between the bottom of the proposed leaching facility and the maximum ground water elevation."

There is no reference to a depth to groundwater requirement greater than five feet in the Natick regulations.

Newbury *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Newbury regulations to "depth to groundwater" minimum requirement.

Norfolk *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

6 The Norfolk Board of Health regulations include the following minimum vertical distance rule: "The vertical distance from any leaching surface of a subsurface disposal system to bedrock, ledge, fractured ledge or impervious soil shall be a minimum of 6 feet for soils having a percolation rate of 2 minutes per inch or less and 5 feet for soils having a percolation rate of greater than 2 minutes per inch." Norfolk Board of Health Regulations for the Siting, Construction, Inspection, Upgrade, Repair, and Expansion of On-Site Wastewater Disposal Systems, Section VII, Part 7 (adopted 2/11/97).

The Norfolk regulations require a specific method of calculation of depth to groundwater for systems with a design flow of 2000 gallons per day or greater: "For all systems having a design flow of 2000 gallons per day or greater, the separation to ground water shall be calculated by adding the effect

of ground water mounding to the high groundwater elevation. This calculation requires, at a minimum, the determination of depth to ground water, thickness of aquifer, and soil permeability as determined by an in-situ field borehole permeability test." Norfolk Board of Health Regulations for the Siting, Construction, Inspection, Upgrade, Repair, and Expansion of On-Site Wastewater Disposal Systems, Section VII, Part 7 (adopted 2/11/97).

Note: Survey received from Norfolk on 3/22/05 marks the answer as "5."

North Andover What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in North Andover regulations to "depth to groundwater" requirement.

North Attleboro What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 "Bottom of any leaching facilities shall be a minimum of four (4) feet above the normal maximum ground water table in all cases and five (5) feet above maximum ground water perc rates are two minutes/inch or less. Town of North Attleboro Rules and Regulations for Septic Systems & Cesspools, Section V (A), (Adopted 1998).

North Reading What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in North Reading regulations to a "depth to groundwater" requirement.

Northbridge What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Northbridge regulations to a requirement for "depth to groundwater."

Norton What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Norton regulations to a requirement for "depth to groundwater."

Norwell What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference to "depth to groundwater" requirement in the Norwell regulations.

Pembroke *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 "The minimum vertical separation distance of the bottom of the stone underlying the soil absorption system above the high ground-water elevation shall be (a)four feet in soils with a recorded percolation rate of more than two minutes per inch; (b)five feet in soils with a recorded percolation rate of two minutes per inch or less."
From the Pembroke Subsurface Sanitary Sewage Disposal Supplementary Rules and Regulations to State Environmental Code TITLE 5, Section 15.212 (Adopted March 1995).

Pepperell *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Pepperell regulations to a "depth to groundwater" requirement.

Plainville *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 From Section 5.6 SPECIFICATIONS FOR SYSTEMS,
F.MINIMUM SETBACK DISTANCES AND VERTICAL CLEARANCE
"The vertical distance from any leaching surface of a subsurface disposal system to bedrock, ledge, fractured ledge or impervious soil shall be a minimum of 6 feet for soils having a percolation rate of 2 minutes per inch or less and 5 feet for soils having a percolation rate of greater than 2 minutes per inch."

(5. PLAINVILLE BOARD OF HEALTH REGULATIONS FOR THE SITING, CONSTRUCTION, INSPECTION, UPGRADE, REPAIR, AND EXPANSION OF ON-SITE WASTEWATER DISPOSAL SYSTEMS, Adopted 1996)

Survey received from Plainville on 6/10/05 marks the answer: "four."

Plymouth *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Plymouth regulations to a requirement for "depth to groundwater."

Plympton *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

5 No reference in the Plympton regulations to a requirement for "depth to groundwater."

Raynham

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

- 5 "All septic leaching facilities must be constructed so that the bottom of the facility is a minimum of five (5) feet above the estimated seasonal high groundwater elevation." From the Town of Raynham Regulations Pertaining to the Design, Construction and Maintenance of Sewage Disposal Systems, "Design and Construction" (Adopted 2003).
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Rehoboth

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

- 5 The town of Rehoboth follows the state requirement. According to amendment 8.5, "[t]he soil absorption area must be a minimum of 5 feet above the high ground water elevation for percolation rates less than or equal to 2 mpi, and 4 feet above the high groundwater elevation for rates over 2mpi. (per 310 CMR 15.212)."

(Town of Rehoboth Supplementary Rules and Regulations to the State Environmental Code: Title 5, 310 CMR 15.000 (Rev. E12-10-2002), Amended 2002)

Rockport

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

- 5 No reference in the Rockport regulations to a "depth to groundwater" requirement.
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Rowley

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

- 5 No reference in the Rowley regulations to a "depth to groundwater" requirement.
-

Salisbury

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

- 5 No reference in the Salisbury regulations to a requirement for "depth to groundwater."
-

Scituate

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

- 5 No reference in the Scituate regulations to a "depth to groundwater" requirement.

Sharon

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5

ARTICLE 7: MINIMUM REQUIREMENTS FOR THE SUBSURFACE DISPOSAL OF SANITARY SEWAGE.
Amended 1/26/04

(6) DEPTH TO GROUNDWATER:

- (a) For areas located within Water Resource Protection Districts and Zone IIs, there must be five feet of naturally occurring soil between high groundwater elevation and the bottom of a leaching facility. The system will be designed to maximize this distance.
- (b) For all other areas there must be four feet of naturally occurring soil between the high groundwater elevation and the bottom of the leaching field.
- (c) For new construction, system may not be mounded above existing topography in order to achieve separation to groundwater.
- (d) Non-indigenous soils added on top of natural topography shall not be included in calculating depth to groundwater.

Town of Sharon, Article 7, Septic Regulations, section 7.02(6) (applicable as amended 1/26/04)

Sherborn

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

6

The Sherborn regulations state: "the bottom of any leaching area shall be a minimum of five (5) feet above the maximum high ground water table." Sherborn Board of Health Regulations, Section I, 8.0(1) (effective as of reprint date of 2/2004). However, if the area is "subject to periodic flooding," the depth to groundwater level required in Sherborn is increased to six feet. Section I, 8.0(4).

Shirley

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5

From amendment 3.2, "[t]he bottom of any leaching area shall be a minimum of five (5) feet above the maximum high groundwater table."
(Shirley Board of Health Regulations for Sewage Disposal, Adopted 1984, Amended 1995)

Shrewsbury

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5

No reference in the Shrewsbury regulations to a requirement for "depth to groundwater."

Southborough

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5

No reference in Southborough regulations to a depth to groundwater requirement.

Sterling

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

6 The depth to groundwater is dependent on the design flow, but for smaller flows it the same as the state. Also, the depth to groundwater is higher in the watershed protection district. From Section 4. Distance to Ground Water, "a. Leaching facilities shall not be constructed in areas where the maximum ground water elevation is less than the distance (d) below the bottom of the leaching facility.

Design Flow	Distance (d) Feet
0-1499	Title V (CMR 15.212)
1500-2999	5
3000-4999	6
greater than 5000	7

For leaching facilities located in the Sterling Watershed Protection District the distance (d) shall not be less than 6 feet [Section 4.6 Paragraph J Aquifer and Water Resources Protection by-law]."

(Sterling Board of Health, Adopted 1995)

Stoughton

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 The town engineer said (1/4/05) that the Septic Regulations (Adopted Sept. 1976) follow Title 5 in every way except that the area requirement for the leaching fields is doubled.

Stow

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference to a "depth to groundwater" requirement in the Stow regulations.

Sudbury

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

6 "Section VIII. Installation in Aquifer Protection Areas. If a subsurface disposal system is to be installed in a Zone II aquifer protection area, the distance from the bottom of the leaching facility to the high groundwater must be six (6) feet."

Sudbury Rules & Regulations Governing the Subsurface Disposal of Sewage (adopted 2/15/84, effective with amendments and revisions as of 3/26/98).

Sutton

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Sutton regulations to a requirement for "depth to groundwater."

Swansea

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Swansea regulations to a "depth to groundwater" requirement.

Tewksbury

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Tewksbury regulations to a "depth to groundwater" requirement.

Topsfield

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Topsfield regulations to a requirement for minimum "depth to groundwater."

Townsend

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 From Amendment 11.4 Maximum Groundwater Elevation, "[t]he minimum vertical separation distance of the bottom of the stone underlying the soil absorption system above the high ground-water elevation shall be:
a) four feet outside the aquifer overlay district
b) five feet inside the aquifer overlay district."

(Townsend Board of Health Sub Surface Sewage Disposal Regulations, Adopted 2004)

Tyngsborough

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

6 In areas not serviced by municipal water that have a percolation rate of 2 min/inch or less, the highest depth to groundwater requirement is a minimum of 6 feet.

However, since there were no other reference to depth to groundwater, researcher concluded Tyngsborough generally requires 4 feet of soil beneath a septic system.

"In areas not serviced with municipal water and where the percolation rate of the soil is two minutes per inch or less, there shall be six feet of parent material below the bottom of the leaching area." From the Tyngsborough Supplemental Regulations to Title 5, Section 3.2 (G) (Effective 1998).

Upton

What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Upton regulations to a requirement for "depth to groundwater."

Uxbridge *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

- 6 From Section II Design Plans, L, "[t]he minimum vertical separation between the bottom of the soil absorption system and the high groundwater elevation shall be set forth in 310 CMR 15.000. This separation distance shall be increased by the Board of Health or its Agent if in its/his opinion conditions warrant, or as specified in II.D." And from Section II, D, "[i]n areas where the soil is unable to be saturated during the percolation test, a pump system or pressure dosing or a six (6) foot separation to ground water from the soil absorption system is required."

(Uxbridge Minimum Requirements for Subsurface Septic Systems, Adopted 2000)
-

Walpole *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

- 5 No reference in the Walpole regulations to a requirement for "depth to groundwater."
-

Wayland *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

- 5 The Wayland regulations determine minimum depth to groundwater as follows:
"For systems designed to receive more than 1000 gallons per day the bottom of the leaching facility shall be at least four feet above the maximum ground water elevation and any mounding of the maximum ground water elevation which may result by an addition of the wastewater flow. Groundwater mounding calculations shall be submitted to the Board of Health for review."

Researcher thus determined that the Wayland requirement for "depth to groundwater" is functionally the same as the state, with the added requirement that the 4-foot minimum distance must exist above any mounding if the system is designed to receive more than 1000 gallons per day. Wayland Board of Health Regulations for On-Site Subsurface Sewage Disposal Systems, Section II(C)(4) (Adopted 1974, Revised 1999).
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Wellesley *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

- 6 Town of Wellesley bylaws, Chapter V Subsurface Sewage Disposal Systems, Section 3.03 (revised 2003)

3.03 Soil percolation rates more rapid than four minutes per inch shall require a minimum distance of six feet between the highest groundwater elevation and the lowest elevation of the leaching elements.

Survey received from Wellesley (Leonard Izzo) on 4/15/05 marks the answer: "don't have one."

West Bridgewater *What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)*

- 5 No reference in the West Bridgewater regulations to a "depth to groundwater" requirement.

West Newbury What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the West Newbury regulations to a requirement for "depth to groundwater."

Westford What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Westford regulations to a requirement for "depth to groundwater."

Weston What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Weston regulations to "depth to groundwater."

Wilmington What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

5 No reference in the Wilmington regulations to a requirement for "depth to groundwater."

Wrentham What is the highest "depth to groundwater" minimum requirement in any area? (Tile 5: five feet)

6 From Section 7. Minimum Setback Distances and Vertical Distances, "The vertical distance from any leaching surface of a subsurface disposal system to bedrock, ledge, fractured ledge or impervious soil shall be a minimum of 6 feet for soils having a percolation rate of 2 minutes per inch or less and 5 feet for soils having a percolation rate of greater than 2 minutes per inch."

(Wrentham BOH OSDS Regulations, Adopted 1996)
