



BERLIN BOARD OF HEALTH REGULATIONS

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SUB-SURFACE SEWAGE DISPOSAL REGULATIONS

WELL REGULATIONS

REVISED 5/17/2022

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TOWN OF BERLIN BOARD OF HEALTH REGULATIONS FOR SEWAGE DISPOSAL

I. PURPOSE AND AUTHORITY

The Commonwealth of Massachusetts State Environmental Code 310 CMR 15.000 (Title 5) shall be considered a minimum standard for the design and installation of sewage disposal systems. In addition, the Berlin Board of Health has enacted the following regulations, as authorized by MGL, Chapter 111, Sec. 31, Sec. 127, and Title 15 15.003 (3)(4)(5).

Previous issues of Berlin Board of Health regulations are superseded hereby.

In any case where a conflict arises between a provision of this bylaw, and a provision of any zoning, building, fire safety, or other code of the Town of Berlin or the State Sanitary Code, the provision which in the judgment of the Berlin Board of Health establishes the higher standard for the promotion of the public health and safety shall prevail.

The Berlin Board of Health shall be the final authority regarding any determination concerning sewage disposal systems.

II. DEFINITIONS

The definitions in 310 CMR 15.002 (Title 5) shall apply, except as modified or added to in this section:

Agent: see Nashoba Associated Boards of Health (NABH)

As-built plan: a drawing prepared, signed, and stamped by a Registered Professional Engineer or Registered Sanitarian, showing the system as constructed.

Board: Berlin Board of Health; the approving authority as defined in 310 CMR 15.002 (Title 5).

Complete Application: a plan as described in 310 CMR 15.220 and in Sec. III(D) hereof, and any other information or documentation necessary for the Board to issue or deny a Disposal Works Construction Permit; the plan must be designed by a Registered Professional Engineer, civil or sanitary, or a Registered Sanitarian. The designer must be currently registered in the Commonwealth of Massachusetts; R.P.E. must state the specialty under the seal.

Construction: refers to installation and to repairs of subsurface sewage disposal systems.

Date of filing (of complete application): the date on which the Board and its Agent receive a complete application; or, if the Board and its Agent receive a complete application on separate dates, then the later of those dates.

Deep Test Hole: an open pit dug to permit the examination of the soil, and to determine groundwater conditions.

Engineer: a Registered Professional Engineer (civil or sanitary only) or Registered Sanitarian currently registered in the Commonwealth of Massachusetts.

Field Tests: soil percolation tests and deep hole test holes in which soil character and ground water

elevation are observed and recorded, which are witnessed by the Board's Agent, and which may serve as a basis for the design of the system.

**Leaching Facility:** an approved structure used for the dispersion of sewage effluent into the soil.

**Maximum Ground water Elevation:** the highest level that the ground water table is likely to reach during the life of the disposal system. Seepage is regarded as discharge from a saturated zone. Ground water levels measured and witnessed by the Board's Agent from soil mottling, are assumed to be maximum elevations. Maximum ground water elevations encountered on the lot in the area of the proposed disposal system is the design-basis ground water level.

**Nashoba Associated Boards of Health (NABH):** hereinafter referred to as the Board's Agent or NABH; a regional health district, of which the Town of Berlin is a member, which will act as an Agent for the Board in matters including those pertaining to the implementation and enforcement of 310 CMR15.001 - 15.505 as long as the Town and Nashoba Associated Boards of Health shall contract for those services.

**Perimeter Drains:** may also be called interceptor drain or curtain drain; a drain constructed for the purpose of intercepting and diverting groundwater flow so as to lower the groundwater level.

**Primary Leaching Facility:** area that includes the proposed or existing leaching facility.

**Sewage:** also called sanitary sewage; any water-carried putrescible waste resulting from the discharge of water closets, laundry tubs, washing machines, sinks, showers, or dishwashers; specifically excluded are substances not normally associated with residential use and any substance or combination of substances which, because of quantity, concentration or physical or chemical characteristics, poses in the judgment of the Board, present and potential hazard to health, safety, welfare, or environment.

**Soil Evaluator:** a State Certified Soil Evaluator; or Registered Professional Engineer (civil or sanitary) or Registered Sanitarian who have taken the soil evaluator course through the Department of Environmental Protection.

**Subsurface Sewage Disposal System:** also called system or septic system; all components of an individual system for the subsurface disposal of sanitary sewage, including building sewer, septic tank, pump chamber, distribution box, leaching facility, all connecting pipes outside of the cellar wall and all appurtenances thereto.

**Reserve Area:** also called expansion area or reserve leaching area; an area delineated on a plan, suitable for the subsurface dispersion into the soil of sewage effluent of a daily volume flow not less than the capacity of the primary leaching facility, reserved for use in the event that the primary leaching facility fails, and upon which no permanent structure shall be constructed.

### III. GENERAL REQUIREMENTS

#### A. Disposal Works Construction Permit

No individual sewage disposal system or other means of sewage disposal shall be located, constructed, altered, repaired, or installed until a permit shall have been issued by the Board. Issuing of said permit is contingent upon an on-site investigation by the Board's Agent, and the applicant's submittal of a Complete Application to the Board's Agent with complete plans for review. The Construction Works Disposal Permit shall be issued or denied by the Board.

## B. Application for a Disposal Works Construction Permit

Application for deep hole tests must be made to the Board's Agent (NABH).

Testing is done on a "first come, first served" basis. The applicant shall be aware of his obligation to comply with the requirements established by the Division of Water Pollution Control of the Commonwealth of Massachusetts, pursuant to MGL Chapter 21, sec. 43, and the Wetlands Protection Act MGL 131, sec. 40.

A Disposal Works Construction Permit is valid for 2 years, and may be renewed for one year only immediately following the original permit's expiration date, following a vote of approval by the Board of Health. After a total of 3 years, a plan must be resubmitted, and considered by the Board under the regulations in effect at the time of resubmittal. A Disposal Works Construction (Repair) Permit is valid only for the time period specified on the permit, and may not be renewed. A permit shall be issued by the Berlin Board of Health only, and not by its Agent.

## C. Fill Easement

No Disposal Works Construction Permit shall be issued if fill associated with any component of the system extends onto an adjacent lot, or if the plan requires fill associated with the reserve area to extend onto an adjacent lot, unless an appropriate easement is duly executed by the owner of said lot, and recorded, and a copy of said easement is submitted to the Board and its Agent. The Board may require fill for both the Primary and the Reserve Area to be placed at the same time.

## D. Plan of Sewage Disposal System

The design and preparation of the disposal system shall be done by a Registered Professional Engineer, sanitary or civil; or a Registered Sanitarian, provided that the system flow is under 2,000 gallons per day. Any system designed to handle a system flow between 2,000 and 10,000 gallons per day shall be reviewed by a consulting engineer who shall be chosen by the Board, and at the expense of the applicant. The designer must prove to the Board that the lot will accommodate a subsurface sewage disposal system.

All of the following must be shown on the plan, in a scale no less than 1" =20':

1. Lot Lines - All of very large lots need not be shown, but must be shown within 200 feet of well(s) and the sewage disposal system site(s).
2. Area to be used for sewage disposal system.
3. Two benchmarks within 75 feet of the sewage disposal system site, and no closer than 100 feet from each other, the distance to be shown on the plan.
4. Parcel number from the Berlin Board of Assessors' maps.
5. Proposed and existing buildings, location and size to scale, distances from benchmarks shown.
6. Location of septic tank, manholes, distribution box, and leaching system, distances to benchmarks shown.
7. Distance from sewage disposal system to centerline of streets and roads.
8. Side yard offset.
9. Rear yard offset.
10. Location, date, and soil log of all deep test holes.

11. Location, date, and results of all percolation tests.
12. Location of any sources of water supply, wells, streams, or drains (including road drains) on the proposed lot and abutting property within 200 feet of the sewage disposal system.
13. Profile of the entire sewage disposal system showing the elevation of the proposed cellar floor, the septic tank, the distribution box, inverts at both ends of all pipes, and exiting and final grade in area of the system. Details of inlet and outlet tees of the septic tank must be included.
14. Typical cross-section of leaching area to a width of 10 feet on each side of the actual area, showing elevations of pipes, ground surface, bottom of leaching facility, any ledge, impervious material, and the maximum groundwater level.
15. Any foundation drains, swales, or other features significant to the successful functioning of the proposed system.
16. Location of any temporary stump pile(s) or other type of large quantities of debris.
17. The stamp and signature of the design engineer; also the date of the plan, and the date(s) of any revision(s).

#### E. Summer Only Use

No installations for summer use shall be considered on any reduced basis. All disposal systems shall be designed for year-round (12 months) usage.

#### F. Building or Plumbing Permits

No building permit, foundation permit, special building permit, or plumbing permit shall be issued until a Disposal Works Construction Permit has first been obtained for the new construction. For existing buildings, this requirement may be waived if the Board determines that the existing disposal system is adequate for the proposed alteration, reconstruction, or additions to an existing dwelling.

#### G. Certificate of Compliance

A new sewage disposal system, or alteration to an existing system, or repairs to an existing system shall not be placed in service; nor shall new building, reconstruction, or additions to existing buildings be occupied until the Board has issued a Certificate of Compliance, indicating that said sewage disposal system has been located, constructed, altered, or repaired in compliance with the terms of the Disposal Works Construction Permit or Disposal Works Construction (Upgrade) Permit, the requirements of Title 5, and these regulations.

#### H. Fees

A fee, to be established by the Board, must be paid to the Nashoba Associated Boards of Health bookkeeper prior to the issuing of a Disposal Works Construction Permit. No fees may be paid at the site.

#### I. Volume of Sanitary Sewage

Single and multiple family residences are to be determined at the rate of 110 gallons per day per bedroom.

J. Drainage

Interceptor drain(s) installed for the purpose of lowering the maximum groundwater elevation for the purpose of installing a subsurface sewage disposal system shall not be allowed.

K. Construction in Fill

Any system constructed in fill must meet the requirements outlined in Title 5 (310 CMR 15.255). When the plan proposes to fill a low wetland area, or alter land within 100' of a vegetated wetland, the Berlin Conservation Commission shall be consulted regarding compliance with the Wetlands Protection Act. If fill is proposed in the plan, the percolation test first be performed in the natural terrain. Any material used for fill must pass the sieve test requirements outlined in Title 5 (310 CMR 15.255).

L. Fill Limitation

A sewage disposal system shall not be constructed in fill which is to be placed on or near ledge, hard pan, or other impervious materials, or placed in any area where peat is present, or if the maximum groundwater elevation is two feet or less below the natural surface grade. A depth of at least five feet of pervious material, as determined by a percolation test in natural soil, shall be maintained below the bottom of the leaching area. Soils **will** be observed to a depth of four feet below the bottom of the proposed leaching and reserve areas to prepare a soils profile.

M. Multiple Use

a. An individual subsurface sewage disposal system and all connecting sewer lines shall be installed on the same lot as the building serviced by said system. One septic system shall serve one house only, unless a shared system as provided for in Title 5 (310 CMR 15.290) has been approved by the Berlin Board of Health.

b. Shared systems will only be approved if each individual lot proposed to use such systems can support a subsurface sewage disposal system which can meet the requirements of Title 5 and local regulations without variance. The area proposed which could support a subsurface sewage disposal system on each lot shall not be used for any other purpose. The Board may require financial and legal guarantees to insure system inspection, maintenance, repair and replacement will occur without delay or expense to the Town.

N. Reserve Area

The reserve area shall be of at least equal capacity as the primary subsurface disposal area, and shall be accessible by gravity flow if the primary system is gravity fed.

O. Locus Maps

a. Any permit for a subsurface sewage disposal system must be accompanied by a locus map showing all proposed and existing wells and proposed and existing subsurface sewage disposal systems on the lot and within two hundred (200) feet of the property boundary in all directions.

b. If a proposed project contains more than 4 lots, the Board of Health requires a master plan be submitted showing the lot lines, topography, proposed septic system, well and house site locations, wetlands, surface water, drains, easements, and floodplain information. This plan must be submitted prior to the submission of individual plans for approval. A site visit may also be required.

P. (Removed)

#### IV. LOCATION

The suitability of the soil for the disposal of sanitary sewage shall be determined, in part, from the results of testing representative of the conditions in the entire area involved in the leaching facility and the reserve area. No two sites are alike; if there is any reasonable doubt as to the acceptability of a location for sewage disposal, the Board has the authority to require as much additional proof as is necessary to remove that doubt. Additional proof may be obtained from, but is not limited to, additional deep test holes or percolation tests. The Board may require an increase in the size of the sewage disposal system if they feel that conditions warrant such a change.

The species of trees, shrubs, or herbs growing on or in the vicinity of the lot which shall be considered indicators of wet or high groundwater conditions are: alder, red maple, ash, hemlock, high bush blueberry, swamp dogwood, viburnum recognitum, sensitive fem, sphagnum moss. Sewage disposal systems shall not be allowed in these areas until a wetland determination has been completed in accordance with MGL chapter 131, Sec. 40. In cases where vegetation is limited or where a fifty percent wetland/upland situation exists, the Board may require that a determination as to the presence of hydric soils be performed to determine the suitability of the siting of the proposed disposal system.

##### A. Site Examination

Lot inspections may not be done when the ground is snow-covered.

##### B. Deep Test Holes

Depth to groundwater is to be determined by the soil strata. Determination shall be by a DEP approved soil evaluator. A total of four holes, two in the primary leaching area and two in the reserve area, each being a minimum of ten feet deep, must be dug as outlined in Title 5 (310 CMR 15.102 and 15.103). The board or its Agent may require further holes after viewing the lot.

##### C. Soil Profile

\*\*\*\*\* as per Title 5 (310 CMR15.103) \*\*\*\*\*

##### D. Percolation Test

Maximum percolation rate allowed shall be 30 minutes per inch. Four percolation tests, two in the primary leaching area and two in the reserve area, shall be performed. The slowest percolation rate obtained shall govern the design of the primary and the reserve area.

A leaching facility shall not be located closer than 25 feet from a percolation test with a rate greater than 30 minutes per inch, unless a percolation test with a rate of 30 minutes per inch or less has been performed between the proposed leaching area and the percolation test with a rate greater than 30 minutes per inch.

##### E. Hydraulic Overloading

The maximum amount of sewage effluent that may be discharged is 440 gallons per acre per day.

The minimum distance between septic systems servicing separate buildings or facilities shall be 100 feet. That distance shall apply to both primary and reserve areas.



F. DISTANCES The location of the sewage disposal system shall provide the minimum distances:

	SEPTIC TANK	LEACHING FACILITY
Dwelling with cellar (including foundation drains)	10'	20'
Property line	20'	25'
All open or subsurface drains and aqueducts (except foundation drains)	50'	50'
Water courses, streams, ponds, swamps, other wetlands and surface waters	50'	100'
Adjoining walls of the primary and reserve area		10'
Horizontal offset to ledge	10'	25'

G.Ledge  
As the town of Berlin relies on local well water supplies, particular attention shall be paid to the location of

any ledge in relation to a proposed sewage disposal system. Decayed ledge or decayed shale, topsoil, and subsoil shall not be considered pervious material. Depth of naturally occurring pervious material above ledge must be five feet; fill shall not be used to meet this requirement.

V. COMPONENTS

A. Sewer Line Length

The requirements of Title 5 (310 CMR 15.222) shall be applied to all sewer lines. No sewage disposal line (gravity feed or force main) shall exceed 400 feet in length from the building outlet to the sewage disposal facility. Deep test holes along the path of the sewer line may be required by the Board.

B. Garbage Disposal Installation

No garbage grinding/disposal units shall be permitted in a dwelling dependent upon a septic tank and/or an individual sewage disposal system.

C. Depth to Maximum Groundwater Elevation

No leaching facility (pit, chamber, trench, galley, or field) shall be constructed in areas where the maximum groundwater elevation is less than 4 feet below the bottom of the facility, 5 feet in soils with percolation rates of 2 minutes per inch or less.

D. Trenches No reserve (expansion) area is permitted between trenches.

E. Access to Septic Tanks and Pump Chambers

Manhole covers to grade shall be required for all septic tanks and pump chambers.

## F. Alternative Sewage Disposal Systems

The Board of Health may establish any special conditions necessary to ensure adequate protection of public health and safety and the environment, and to ensure appropriate evaluation, inspections maintenance, repairs and replacements. Such conditions may include without limitations: flow limitations; monitoring; inspections; maintenance; testing; and reporting requirements; a requirement that a certified operator operate the system; and financial assurance mechanism. The Board of Health may also specify changes or modifications of requirements otherwise applicable to conventional systems and that are appropriate for use of the alternative systems. Prior to the approval of an alternative system for new construction the applicant must demonstrate that the lot can support a subsurface sewage disposal system meeting Title 5 and the Berlin Board of Health regulations without variance. The area proposed which could support a subsurface sewage disposal system on each lot shall not be used for any other purpose.

## VI VARIANCES

Upon receipt of a written request from the owner or engineer to reduce or waive selected portions of these regulations for any single installation, a majority of the Board may vote to take such action. In no case shall the Board grant a waiver of these regulations or reduce said requirements if such action is contrary to the intent of the provisions of these regulations. Any request for such a variance must include a list of the specific local regulations for which the variance is sought, and an explanation why the variance(s) is requested.

A hearing will be held, unless specifically waived by the Board. The Board shall notify the applicant of the time of the hearing. The applicant shall post a legal notice in a local newspaper a minimum of ten (10) days before the scheduled hearing date; the applicant shall bear the expense of the posting. The notice shall state the date, time, place of the hearing; the location and owner of the property; the local regulation involved in the request for variance. The applicant shall present proof of the hearing notice to the Board at the onset of the hearing.

In addition, a written notice of the variance hearing request and hearing date, time and place is to be sent to the abutters by registered or certified mail ten (10) days before the hearing date. The applicant shall present the mailing receipts to the Board at the onset of the hearing. The notice shall include language that the abutter may attend the meeting in person or by mailing the Berlin Board of Health a letter of concerns to be received by the Board prior to the hearing date and time.

Any variance granted by the Board shall be in writing and shall include the findings of fact and conclusions of law necessary to support the variance. Any denial of a variance by the Board shall be in writing and shall contain a brief statement of the reason(s) for the denial.

## VII EMERGENCY REPAIR PROCEDURE

1. Contact the Board's Agent (Nashoba Associated Boards of Health, tel# 508-772-3335) or a member of the Board. The emergency situation must be determined to exist by the Board or its Agent.
2. Arrange for the septic tank to be pumped if possible; pumping will allow time to draw up repair plans.
3. Schedule a meeting with the Board.
4. Contact an engineer to draft a repair plan, and perform necessary deep test hole and/or percolation testing.

5. A Disposal Works Construction (Repair) Permit will be issued as soon as the repair plan is approved by the Board. If variance(s) to local or state regulations is required, a hearing must be scheduled. For variance to local regulations, the hearing requirement may be waived at the discretion of the Board. Variances to Title S must be forwarded to the Department of Environmental Protection (DEP) after a hearing is held and the focal authority has approved the request. A letter petitioning the Board for such a variance must be sent to the Board of Health.

6. Once the permit has been issued, the repair may commence.

## VIII

### ENFORCEMENT

The Board may issue administrative orders, enforcement orders, violation notices, requests for compliance, and other documents and correspondence to enforce the provisions of these regulations. The Board may pursue criminal prosecution or civil litigation or both in the courts of the Commonwealth of Massachusetts to enforce the provisions of this regulations.

### X SEVERABILITY

If any part or portions of these regulations be adjudicated as invalid, the adjudications shall apply to only the material so judged, and the remaining regulations shall be deemed as valid, and of full force and effect.

## WELL REGULATIONS

### 1.0 Purpose and Authority

These regulations are intended to promote the public health and general welfare by ensuring that private wells are constructed in a manner which will protect the quality of the groundwater derived from private wells. These regulations are adopted by the authority of Chapter 111, Section 31, M.G.L.

### 1.1 Definitions

As used in these regulations, the following terms shall be defined and interpreted as follows:

- (1) Abandoned water well. A private well that has not been used for a water supply for a period of one (1) year or more and which the owner does not intend to use again.
- (2) Agent. The Nashoba Associated Boards of Health (hereinafter referred to as Nashoba) serving as the agent for the Board of Health, as provided by Chapter 111, Section 27A.
- (3) Aquifer. A water bearing geologic formation that contains water in sufficient quantities to potentially supply a well for drinking water or other purposes.
- (4) Person. An individual, corporation, company, association, trust, or partnership.
- (5) Potable water. Water that is satisfactory for drinking and for culinary and domestic purposes.
- (6) Private well. A water supply well which 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 310CHR22.02.
- (7) Pumps and pumping equipment. Any equipment or materials used or intended for use in withdrawing or obtaining groundwater, including, without limitation, seals and tanks, together with fittings and controls.
- (8) Regulating agency. The town Board of Health through its agent, the Nashoba Associated Boards of Health.
- (9) Well. An excavation or opening into the ground made by digging, boring, drilling, driving, or other methods, purpose of providing a potable drinking water supply.
- (10) Well driller and/or digger. Any person who is licensed by the Water Resources Commission (as defined by Chapter 620 of the Acts of 1956, as amended) to construct wells.
- (11) Well Seal. An approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the upper terminal.

### 2.0 Requirements for Private Wells

(1) No private well shall be deemed a source of potable water unless it is constructed in accordance with these regulations.

No well shall be destroyed except in accordance with these regulations.

- (2) For each private well constructed after the effective dates of these regulations, there shall be:
- (a) a well construction permit application; (b) a well construction permit;
  - (c) a water quality analysis;
  - (d) a certificate of compliance with the terms of the permit;
  - (e) a well driller's or digger's report.
- (3) For each private well destroyed after the effective date of these regulations, there shall be:
- (a) a well destruction permit application;
  - (b) a statement of well abandonment from the owner;
  - (c) a well destruction permit;
  - (d) a well driller's or digger's, or contractor's report of destruction.

(4) No private well shall be deemed a source of potable water unless it is constructed in accordance with these regulations.

No well shall be destroyed except in accordance with these regulations.

(5) For each private well constructed after the effective dates of these regulations, there shall be:

- (a) a well construction permit application;
- (b)
- (c) (b) a well construction permit;
- (f) a water quality analysis;
- (g) a certificate of compliance with the terms of the permit;
- (h) a well driller's or digger's report.

(6) For each private well destroyed after the effective date of these regulations, there shall be:

- (a) a well destruction permit application;
- (b) a statement of well abandonment from the owner;
- (c) a well destruction permit;
- (d) a well driller's or digger's, or contractor's report of destruction.

(7) The Board of Health or its agent shall investigate violations of these regulations or of any permit issued and may take such actions as it may deem necessary for the protection of the public health and to restrain violations of these regulations.

(8) Whosoever violates these regulations shall be punished by a fine of not more than 500.00 dollars to, and for the use of, the Town in which the well is located.

### 3.0 Well Construction or Destruction Permits

(1) No person shall engage in the business of constructing or destroying private wells within the Town under these regulations unless registered as a well driller/digger with the Water Resources Commission, pursuant to 313CMR 3.00.

(2) An application for a well construction or destruction permit shall be submitted by the property owner, the well driller/digger or his agent to Neshoba on a form furnished by Neshoba.

A well construction or destruction permit shall be obtained from Neshoba prior to the construction or destruction of any private well. Neshoba shall charge a fee for each well construction or destruction permit and said fee shall be paid to the Neshoba Associated Boards of Health prior to the permit's issue.

#### 4.0 Well Construction Permit Requirements

The following information shall be submitted by the property owner or the well driller/digger or their agent with the well construction application, prior to the issuance of a permit:

- (a) general location of the proposed well to include the location of at least one road intersection for reference;
- (b) a sketch of the expected construction of the well to include an approximation of the expected well depth;
- (c) a description of any possible source(s) of contamination within 400 feet of the proposed well location (see sect. 4.1(1));
- (d) The well driller's/digger's name and certification number as it appears on the Water Resources Commission certificate.
- (e) description of the prior/current land use in the vicinity of the proposed well location (i.e. agricultural, industrial, etc.).

For emergency repair, alteration, or replacement of an existing well the Board of Health or Nashoba may waive the requirements of these regulations for dwellings which were in existence prior to the effective date of this regulation.

#### 4.1 Well Location Requirements

(1) In establishing the location of a well, the well owner and/or the driller/digger, shall identify any and all sources of potential contamination (agricultural fields, animal feed lots, beauty salon, dry cleaner, funeral home, furniture stripper/refinisher, gasoline/service stations, fuel depot, automotive junk yard, railroad line or yard, etc.) which exist within 400 feet of the proposed well site.

The following minimum lateral distances from contamination shall apply with the granting of a variance under special conditions:

Source of Contamination	Minimum Distance (feet)
leaching facility (310CMR 15.00)	100
cesspool	100
septic tank	50
sewer line	50
property line	50
public or private way, common drive, easement	50
active or closed landfill	400
hazardous waste spill site	400
any type of surface water	100

(2) Where, in the opinion of the town Board of Health or Nashoba, adverse conditions exist, the above minimum distances may be increased or special means of protection may be required. These special requirements shall be added to the well construction permit by Nashoba.

(3) The well shall be upgradient of sources of contamination whenever possible. The top of the well shall be higher than any surface of contamination and above any conditions of flooding by drainage or runoff from the surrounding land, unless otherwise adequately protected.

#### 4.2 Well Construction Standards

(1) Wells shall be constructed in compliance with the recommendations of the latest edition of the Manual of Individual Water Supply, U.S. Environmental Protection Agency (U.S. EPA), Water Supply Division (exception: springs shall not be used for the purpose of a potable water supply).

(2) The annular space between the protective well casing and the wall of the drilled hole or the surface casing shall be effectively sealed. The seal is to protect against contamination by surface and/or shallow, subsurface waters.

(3) The well casing shall be capped or covered with a sanitary well seal. Casings shall extend a minimum of 24 inches above the highest known flood levels or 18 inches above the ground surface in areas which are not subject to flooding. In addition all non-vent openings shall be sealed to exclude the intrusion of contaminants. Vent openings shall be of an approved type, complete with screening.

(4) When well screens are used, the screen length and opening size should be selected to ensure that the water supply will be free from silts and sands and other suspended solids.

(5) Well pumps and water storage equipment shall be selected to ensure that the water supply is to be adequate (a minimum of five gallons per minute (GPM) is recommended) over a sustained period of pumping. NOTE: The proper selection of the pump is important to protect against unnecessary wear on the equipment and to maintain a safe and adequate supply of water.

(6) Pump suction lines (if used) shall not be closer than 100 feet from underground sewage leaching facilities or 50 feet from a septic tank (310CMR15.03).

(7) Well pits to house the pumping equipment or to permit accessibility to the top of a well shall not be permitted.



#### 4.3 Disinfection and Other Sanitary Requirements

All 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 the pumping equipment (and plumbing, if installed) shall be disinfected with a solution containing at least 50 parts per million (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 the septic system) and the water found to be free of chlorine.

(Information and instructions for the disinfection procedure is available from Nashoba)

#### 4.4 Water Sampling Procedure

(1) Water sample(s) shall be collected by Nashoba. All water sample(s) shall be collected in an appropriate manner as to maintain the integrity of the sample collected. Collection of the sample(s) shall occur following the well development and the disinfection process for that well (see section 4.3). The water sample may be taken to a laboratory of Nashoba's choice unless the owner selects a specific laboratory, at which time the sample container may be sealed with a custody tag and be delivered to the owner selected testing laboratory by him/herself. The laboratory shall be required to notify Nashoba should the sample be received with a broken custody seal.

(2) A representative water sample for laboratory analysis shall be collected at the pump discharge or from a tap in the pump discharge line. A representative sample shall constitute a sample collected after the removal of at least three standing volumes of water from the well or a minimum of 10-15 minutes of pumping from the well.

(3) The sample(s) shall be analyzed for the following parameters at a minimum: Coliform bacteria, Arsenic, Lead, Sodium, Iron, Manganese, Copper, Magnesium, Color, Sulfate, Turbidity, Alkalinity, Chlorine, Chloride, Hardness, Ammonia, Nitrite, Nitrate, pH, Conductivity, Odor and Potassium. All analyses shall be performed in accordance with U.S. EPA methods or other approved methods for drinking water analysis.

(4) Analytical tests such as volatile organics (VOCs), pesticides, PCBs and inorganics (metals) other than those specified in 4.4(3), can be added or deleted, as public knowledge increases or at the request of the town Board of Health or Nashoba, when conditions may indicate the need (i.e. prior land use) for such testing. Samples which are to be analyzed for volatile organic compounds shall not contain air bubbles of any size.

#### 4.5 Water Quality

(1) All analytical results shall be reviewed by Nashoba and an assessment of the suitability of that well for drinking water will be made. Nashoba will adhere to the current and applicable drinking water standards as detailed by the U.S. EPA and the State of Massachusetts Department of Environmental Quality Engineering (DEQE). Approval of the results, by Nashoba, must be obtained in writing before the well shall be placed into service as a drinking water supply.

(2) The water sample(s) shall be analyzed by a laboratory certified to perform drinking water analysis by the DEQE for each parameter analyzed. A copy of the results shall be sent to both the town Board of Health and Nashoba. All fees for the water testing are the responsibility of the applicant and all fees shall be paid in full prior to the approval of the well permit.

(3) As stated in section 4.4, Nashoba or the town Board of Health may require that additional chemical analysis be performed on the well water. Any such additional requirement shall specify which chemical constituents or chemical fractions (pesticide/PCB, extractables, etc..) shall be tested for.

(4) No result shall exceed the current and applicable drinking water standards for a public water supply, as detailed by the U.S. EPA and/or DEQE (40CFR141 and 310CMR22). Coliform results shall be zero colinies per 100 ml of sample or upon a positive result be followed by two successive zero coliform results. Nashoba may also use professional judgement when assessing the results of the water well prior to approval of that well. When the results indicate a potential health hazard (ie. possible gasoline contamination) Nashoba may at its discretion disapprove the well for use as a water supply.

#### 4.6 Well Completion Requirements

(1) Within 30 days after the completion of the construction of any well, the well driller/digger shall submit to Nashoba a report containing the following information:

- (a) The name of the owner of the well;
- (b) The address of the property served and/or the lot number as assigned by the Assessor's office;
- (c) The depth, size and method of construction of the well;
- (d) The static water level;
- (e) The yield of the well after pumping;
- (f) The well driller's/digger's log information.

The well driller's/digger's report shall be signed by an authorized representative and shall constitute a statement of compliance with all requirements of these regulations. This will satisfy the requirement of the certificate of compliance.

## 5.0 Well Destruction

A well that is abandoned shall be destroyed to protect the groundwater supply and to eliminate potential physical hazards. Wells shall be sealed with non-hazardous, impervious materials which shall be permanently in place. All exposed casing materials, pumping equipment, and distribution lines shall be removed. The excavation shall be returned to the existing grade of the surrounding land. A record of abandonment shall be kept in accordance with these regulations

### 5.1 Well Destruction Requirements

The following information shall be submitted with each well destruction application, prior to the issuance of a permit:

- (a) The specific location of the well to be destroyed;
- (b) The design and construction of the well to be destroyed;
- (c) A written statement from the owner that the well is abandoned;

Within 30 days after the destruction of any well, the well driller/digger, or contractor shall submit to Nashoba a report containing the following:

- (a) The name of the owner of the well;
- (b) The address of the property served;
- (c) Method of sealing, including materials used;
- (d) Person or persons sealing the well and date of the sealing of the well.

The well driller's/digger's report shall be signed by an authorized representative and shall constitute a statement of compliance with all requirements of these regulations. This will satisfy the requirement of the certificate of compliance.

## 6.0 Variances

(1) Variances may be granted only as follows: The town Board of Health may vary the application of these regulations with respect to any particular case when, in its opinion, the enforcement thereof would do manifest injustice, and the applicant has proven that the same degree of public health and environmental protection required under these regulations can be achieved without strict application of a particular provision(s).

(2) Variance requests shall be in writing to the town Board of Health and include all the information/reasons and proposed measures necessary to assure the protection of the public health and environment. The town Board of Health shall grant, modify, or deny a variance in writing, and state the reasons for any denial.

## 7.0 Substantive Procedures

Substantive Procedures shall be performed as specified in 105Ct1R400.1

## PROCEDURE FOR THE CONSTRUCTION /DESTRUCTION OF A PRIVATE OR SEMI-PRIVATE WATER SUPPLY.

### Well Construction:

- 1 Application for well construction permit obtained from Nashoba Associated Boards of Health, 74 West Main Street. Ayer, MA.
2. Completed application returned to Nashoba with check, payable to Nashoba Assoc. Boards of Health.
3. Application is reviewed by Nashoba for a) completeness; b) compliance with well regulation requirements. Nashoba and/or the town Board of Health shall determine any additional sampling requirements (if any) and incorporate them on the permit.
4. The permit is either issued or denied (explanation included).
5. Well is constructed/installed in accordance with applicable rules and regulations.
6. Well is developed and disinfected.
7. Laboratory (certified services are secured by owner or installer for water sample analysis.
8. Notification is made to Nashoba regarding sampling date and time.
9. Well water sample(s) are collected and submitted to laboratory for analysis.
10. Analytical results are submitted to the local Board of Health and Nashoba for review.
11. Nashoba reviews the analytical results for compliance with applicable drinking water standards. Determination of the acceptability of the well for a potable water supply will be made and the well will be approved or disapproved for use accordingly. Owner will receive written notification.
12. Within 30 days after the wells' completion the well driller or driller shall submit to Nashoba a signed well log/report containing the required information as specified in the well regulations. This report shall constitute the certificate of compliance with the terms of the permit and all pertinent rules and regulations pertaining to the well installation.

### Well Destruction:

1. Application for a well destruction permit is obtained from Nashoba.
2. Completed application is returned to Nashoba with a check payable to Nashoba Assoc. Boards of Health.
3. Application is reviewed by Nashoba for a) completeness and b) compliance to applicable rules and regulations.
4. The permit is issued or denied (with explanation).
5. The well is destroyed in accordance with applicable regulations.
6. Within 30 days a signed well driller's or digger's log/report shall be submitted to Nashoba, this report/lea shall constitute a certificate of compliance with the terms of the regulations.

