

310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION

22.20G: continued

Toolbox option	Systems must submit the following information	On the following schedule
(14) Ozone	Summary of CT values for each day as described in the Massachusetts Drinking Water Guidelines and Policies, Appendix N, Requirements for Microbial Toolbox Options for Meeting Cryptosporidium Treatment Requirements under the Long Term 2 Enhanced Surface Water Treatment Rule.	Within ten days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in 310 CMR 22.20G(14).
(15) UV	(i) Validation test results demonstrating operating conditions that achieve required UV dose. (ii) Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in the Massachusetts Drinking Water Guidelines and Policies, Appendix N, Requirements for Microbial Toolbox Options for Meeting Cryptosporidium Treatment Requirements under the Long Term 2 Enhanced Surface Water Treatment Rule.	No later than the applicable treatment compliance date in 310 CMR 22.20G(14). Within ten days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in 310 CMR 22.20G(14).

(17) Recordkeeping Requirements.

(a) Systems must keep results from the initial round of source water monitoring under 310 CMR 22.20G(2)(a) and the second round of source water monitoring under 310 CMR 22.20G(2)(b) until three years after bin classification under 310 CMR 22.20G(11) for filtered systems or determination of the mean Cryptosporidium level under 310 CMR 22.200(11) for unfiltered systems for the particular round of monitoring.

(b) Systems must keep any notification to the Department that they will not conduct source water monitoring due to meeting the criteria of 310 CMR 22.200(2)(d) for three years.

(c) Systems must keep the results of treatment monitoring associated with microbial toolbox options under the Massachusetts Drinking Water Guidelines and Policies, Appendix 7, Requirements for Microbial Toolbox Options for Meeting Cryptosporidium Treatment Requirements under the Long Term 2 Enhanced Surface Water Treatment Rule and with uncovered finished water reservoirs under 310 CMR 22.200(15), as applicable, for three years.

22.21: Groundwater Supply Protection

The following requirements shall apply to all persons to protect groundwater used as sources of public drinking water supply from contamination:

(1) Source Approval

(a) No public water supply well, wellfield, or spring shall be constructed, expanded or replaced, and no water supply well, wellfield, or spring shall be placed on-line in a public water system, without the prior written approval of the Department. Persons seeking such approval are directed to follow the procedures set forth in the Drinking Water Program's "Guidelines and Policies for Public Water Systems".

22.21: continued

All requests for source approval, or approval of Zone II and III delineations, shall be submitted to the Department's Regional Office serving the area where the proposed well, wellfield, or spring is located.

In determining whether to grant such approval, the Department shall apply the criteria set forth in 310 CMR 22.21 and the "Guidelines and Policies for Public Water Systems." Copies of the "Guidelines and Policies for Public Water Systems" are available for a nominal fee from the State Book Store, State House, Room 116, Boston, Massachusetts and 436 Dwight Street, Springfield, Massachusetts.

(b) No public water supply well or wellfield designed to withdraw, or spring which flows, less than 100,000 gallons per day shall be constructed, expanded or replaced, or placed on-line, unless the Department finds in writing:

1. that the proponent has satisfactorily complied with the Drinking Water Program's "Guidelines and Policies for Public Water Systems," as amended;
2. that the source of water supply for the well, wellfield, or spring will achieve all applicable water quality standards set forth in the Massachusetts Drinking Water Regulations, 310 CMR 22.00;
3. that the proponent has properly determined the Zone I of the proposed well, wellfield, or spring;
4. that the Zone I of the proposed well, wellfield, or spring is owned or controlled by the supplier of water; and
5. that current and/or future land uses within the Zone I are limited to those directly related to the provision of public drinking water or will have no significant adverse impact on water quality.

In addition, the Department may require the proponent to delineate Zones II and III, and submit a groundwater monitoring well program plan for approval if the Department finds that existing or proposed land uses within the Interim Wellhead Protection Area of the proposed well, wellfield, or spring, determined in accordance with 310 CMR 22.21(1)(i), may pose a threat to water quality.

(c) No public water supply well, wellfield or spring designed to withdraw, or spring which flows, 100,000 gallons per day or more shall be constructed, expanded or replaced unless the Department finds in writing:

1. that the proponent has met all the requirements set forth in 310 CMR 22.21(1)(b)1. through 310 CMR 22.21(1)(b)5.;
2. that the proponent has properly delineated the Zones II and III of the proposed well, wellfield, or spring;
3. that the proponent has submitted a groundwater monitoring well program plan designed to evaluate the water quality impacts of land uses within the Zone II of the proposed well, wellfield, or spring; and
4. that the proponent has drafted wellhead protection zoning or nonzoning controls that prohibit siting within the Zone II the land uses set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) unless designed in accordance with the performance standards specified therein, and has complied with the nitrate management requirement of 310 CMR 22.21(2)(d).

(d) No public water supply well, wellfield or spring designed to withdraw, or spring which flows, 100,000 gallons per day or more shall be placed on-line unless:

1. a groundwater monitoring well program plan approved by the Department has been fully implemented (i.e. the monitoring wells are operational and the sampling frequency and parameters have been approved by the Department); and
2. the cities and towns in which any part of the Zone II of the proposed well, wellfield, or spring is located have wellhead protection zoning or nonzoning controls in effect that prohibit siting within the Zone II the land uses set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) unless designed in accordance with the performance standards specified therein. If the public water system is owned or controlled by an entity other than a municipality, the proponent must demonstrate to the Department's satisfaction that it has used its best efforts to have all cities and towns in which the Zone II is located establish such zoning or nonzoning controls.

22.21: continued

(e) Notwithstanding 310 CMR 22.21(1)(d)(2), no public water supply well, wellfield or spring designed to withdraw, or spring which flows, 100,000 gallons per day or more that will be used in a public water system owned or operated by a municipality, and is located within that municipality, shall be placed on-line unless the municipality has wellhead protection zoning or nonzoning controls in effect that prohibit siting within the Zone II the land uses set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) unless designed in accordance with the performance standards specified therein. If the Zone II of a municipal public water system extends into another municipality, the water supplier must also demonstrate to the Department's satisfaction that it has used its best efforts to have all cities and towns into which the Zone II extends establish such zoning or nonzoning controls within the Zone II.

(f) Notwithstanding any other regulatory provision to the contrary, the Department may waive the requirement that the proponent of a public water supply well, wellfield, or spring delineate the Zone II, provided:

1. the proponent has properly delineated the Zone III;
2. each city and town in which the Zone III of the proposed well, wellfield, or spring is located has wellhead protection zoning or nonzoning controls in effect that prohibit within the Zone III the land uses set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) unless designed in accordance with the performance standards specified therein;
3. the proponent has submitted a groundwater monitoring well program plan designed to evaluate the water quality impacts of land uses within the Zone III of the proposed well, wellfield, or spring; and
4. the desired relief can be granted without substantial detriment to the public good.

In the event the Department waives the requirement that the proponent delineate the Zone II of a proposed public water supply well, wellfield, or spring, the supplier of water shall fully implement the groundwater monitoring well program plan approved by the Department before placing the well, wellfield, or spring on-line (i.e. the monitoring wells shall be operational and the sampling frequencies and parameters shall have been approved by the Department).

(g) In determining whether a proponent has properly determined the Zone I or delineated the Zones II or III of a well, wellfield, or spring, or adequately designed a groundwater monitoring well program plan, the Department shall apply the criteria set forth in the Drinking Water Program's "Guidelines and Policies for Public Water Systems", as amended.

(h) Any person who receives Department approval for a public water supply well, wellfield or spring designed to withdraw, or spring which flows, 100,000 gallons per day or more that is not a replacement withdrawal point shall obtain a permit for any withdrawal, in accordance with the Water Management Act, M.G.L. c. 21G, and 310 CMR 36.00.

(i) If the Department has not approved the Zone II for a public water supply well, wellfield, or spring, the Department will utilize the Interim Wellhead Protection Area as defined in 310 CMR 22.02.

(j) The proponent may meet the requirements set forth in 310 CMR 22.21(1)(d)2. by demonstrating that existing rights in perpetuity or for a specific period of years stated in the form of a restriction, easement, covenant or condition in a deed or other instrument prohibit the siting of the land uses set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) within the Zone II.

(k) The proponent may meet the requirements set forth in 310 CMR 22.21(1)(f)2. by demonstrating that existing rights in perpetuity or for a specific period of years stated in the form of a restriction, easement, covenant or condition in a deed or other instrument prohibit the siting of the land uses set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) within the Zone III.

(l) No public water supply well, wellfield or spring designed to withdraw, or spring which flows, 100,000 gallons per day or more approved after the effective date of 310 CMR 22.21 shall remain on-line following the amendment or repeal of a wellhead protection zoning or nonzoning control pertinent to that well, wellfield, or spring, or the expiration of any such period of years stated in a deed or other instrument approved pursuant to 310 CMR 22.21(1)(j) or 310 CMR 22.21(1)(k), unless the Department finds in writing that the supplier of water meets the requirements set forth in 310 CMR 22.21(1)(d) or 310 CMR 22.21(1)(e), whichever is applicable, or grants a variance in accordance with 310 CMR 22.21(5). Any

22.21: continued

source of supply removed from service shall be maintained by the supplier of water as an emergency source of water supply unless the Department finds in writing that the source is not needed by the supplier of water for present or future water supply.

(m) Notwithstanding any other regulatory provision to the contrary, the Department may exempt a supplier of water from any of the requirements set forth in 310 CMR 22.21(1)(d) while a state of water emergency declared pursuant to M.G.L. c. 21G, § 15, is in effect. In the event that the Department grants such an exemption, the well, wellfield, or spring shall remain on-line only for the duration of the state of water emergency, as determined by the Department.

(2) Wellhead Protection Zoning and Nonzoning Controls

(a) Wellhead protection zoning and nonzoning controls submitted to the Department in accordance with 310 CMR 22.21(1), shall collectively prohibit the siting of the following land uses within the Zone II, or Zone III if the criteria of 310 CMR 22.21(1)(f) have been met, of the proposed well, wellfield, or spring, whichever is applicable:

1. landfills and open dumps, as defined in 310 CMR 19.006;
2. landfills receiving only wastewater residuals and/or septage (wastewater residuals "monofills") approved by the Department pursuant to M.G.L. c. 21, § 26 through 53; M.G.L. c. 111, § 17; M.G.L. c. 83, §§ 6 and 7, and any regulations promulgated thereunder.
3. automobile graveyards and junkyard, as defined in M.G.L. c. 140B, § 1;
4. stockpiling and disposal of snow or ice removed from highways and streets located outside of Zone II that contains sodium chloride, chemically treated abrasives or other chemicals used for snow and ice removal;
5. petroleum, fuel oil and heating oil bulk stations and terminals, including, but not limited to, those listed under Standard Industrial Classification (SIC) Codes 5171 (not including liquified petroleum gas) and 5983. SIC Codes are established by the U.S. Office of Management and Budget and may be determined by referring to the publication, Standard Industrial Classification Manual and any subsequent amendments thereto;
6. treatment or disposal works subject to 314 CMR 5.00 for wastewater other than sanitary sewage. This prohibition includes, but is not limited to, treatment or disposal works related to activities under the Standard Industrial Classification (SIC) Codes set forth in 310 CMR 15.004(6) (Title 5), except the following:
 - a. the replacement or repair of an existing system(s) that will not result in a design capacity greater than the design capacity of the existing system(s); and
 - b. treatment works approved by the Department designed for the treatment of contaminated ground or surface waters and operated in compliance with 314 CMR 5.05(3) or 5.05 (13); and
 - c. publicly owned treatment works, or POTWs.
7. facilities that generate, treat, store or dispose of hazardous waste that are subject to M.G.L. c. 21C and 310 CMR 30.000, except for the following:
 - a. very small quantity generators, as defined by 310 CMR 30.00;
 - b. household hazardous waste collection centers or events operated pursuant to 310 CMR 30.390;
 - c. waste oil retention facilities required by M.G.L. c. 21, § 52A; and
 - d. treatment works approved by the Department designed in accordance with 314 CMR 5.00 for the treatment of contaminated ground or surface waters.
8. any floor drainage systems in existing facilities, in industrial or commercial hazardous material and/or hazardous waste process areas or storage areas, which discharge to the ground without a DEP permit or authorization. Any existing facility with such a drainage system shall be required to either seal the floor drain (in accordance with the state plumbing code, 248 CMR 10.00), connect the drain to a municipal sewer system (with all appropriate permits and pre-treatment), or connect the drain to a holding tank meeting the requirements of all appropriate DEP regulations and policies.

(b) Wellhead protection zoning and nonzoning controls submitted to the Department in accordance with 310 CMR 22.21(1), shall collectively prohibit the siting of the following

22.21: continued

land uses within the Zone II, or Zone III if the criteria of 310 CMR 22.21(1)(f) have been met, of the proposed well, wellfield, or spring, whichever is applicable, unless designed in accordance with the performance standards specified below in 310 CMR 22.21(2)(b)1. through 7.:

1. storage of sludge and septage, as defined in 310 CMR 32.05, unless such storage is in compliance with 310 CMR 32.30 and 310 CMR 32.31;
2. storage of sodium chloride, chemically treated abrasives or other chemicals used for the removal of ice and snow on roads, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;
3. storage of commercial fertilizers, as defined in M.G.L. c. 128, § 64, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate;
4. storage of animal manures, unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff and leachate;
5. storage of liquid hazardous materials, as defined in M.G.L. c. 21E, and/or liquid petroleum products unless such storage is:
 - a. above ground level, and
 - b. on an impervious surface, and
 - c. either
 - (i) in container(s) or above-ground tank(s) within a building, or
 - (ii) outdoors in covered container(s) or above-ground tank(s) in an area that has a containment system designed and operated to hold either 10% of the total possible storage capacity of all containers, or 110% of the largest container's storage capacity, whichever is greater;

however, these storage requirements shall not apply to the replacement of existing tanks or systems for the keeping, dispensing or storing of gasoline provided the replacement is performed in a manner consistent with state and local requirements;

6. the removal of soil, loam, sand, gravel or any other mineral substances within four feet of the historical high groundwater table elevation (as determined from monitoring wells and historical water table fluctuation data compiled by the United States Geological Survey), unless the substances removed are redeposited within 45 days of removal on site to achieve a final grading greater than four feet above the historical high water mark, and except for excavations for the construction of building foundations or the installation of utility works, or wetland restoration work conducted in accordance with a valid Order of Condition issued pursuant to M.G.L. c. 131, § 40;
7. and land uses that result in the rendering impervious of more than 15% or 2500 square feet of any lot or parcel, whichever is greater, unless a system for artificial recharge of precipitation is provided that will not result in the degradation of groundwater quality.

(c) The proponent shall give written notice to the Department of any and all local by-laws, ordinances, rules and regulations that allow for the grant of a variance, waiver or exemption from any of the wellhead protection zoning or nonzoning controls submitted to the Department for approval in accordance with 310 CMR 22.21 before placing the proposed well, wellfield, or spring on-line.

(d) The Department may require as part of the Source Approval process requirements of 310 CMR 22.21(1)(c), the completion of a nitrogen loading analysis for the new well, wellfield, or spring's Zone II. A nitrogen loading analysis shall be required when, in the Department's judgement, the type and level of land use within the Zone II or other information reasonably indicates that nitrate concentrations in the well, wellfield, or spring may or will exceed five mg/l nitrate.

Public water systems required by their Water Management Act permits issued under 310 CMR 36.00 to define Zone IIs and implement land use controls shall be required to conduct a nitrate loading analysis as part of the Zone II delineation for well, wellfield, or springs that have exceeded five mg/l nitrate.

Public water systems whose required nitrate loading analysis predicts >five mg/l nitrate or whose well, wellfield, or spring has exceeded five mg/l nitrate must prepare a nitrate management plan, subject to the Department's approval, which seeks to maintain nitrate levels below five mg/l for the subject well in the long-term.

22.21: continued

(3) Requirements for all New and Existing Groundwater Sources

(a) Sources for Community Systems. Any person who obtains Department approval for a community public water system that relies entirely upon groundwater sources shall provide additional wells, wellfield, or springs and pumping equipment, or the equivalent, capable of producing the same volumes and quality of water as the system's primary well, wellfield, or spring at all times, or shall provide the storage capacity equivalent to the demand of at least two average days if approved by the Department, unless an interconnection with another public water system has been provided which can adequately provide the quantity and quality of water needed.

(b) Zone 1. All suppliers of water shall acquire ownership or control of sufficient land around wells, infiltration galleries, springs and similar sources of ground water used as sources for drinking water to protect the water from contamination. This requirement shall generally be deemed to have been met if all land within Zone I is under the ownership or control of the supplier of water. Current and future land uses within the Zone I shall be limited to those land uses directly related to the provision of the public water system or to other land uses which the public water system has demonstrated have no significant impact on water quality. The Department may require greater distances or permit lesser distances than the Zone I distances set forth at 310 CMR 22.02, if the Department deems such action necessary or sufficient to protect public health. No new underground storage tanks for petroleum products shall be located within Zone I

(4) Inspection and Enforcement

(a) Each supplier of water shall annually survey the land uses within Zones I, II and III, or within the Interim Wellhead Protection Area, for each well and wellfield under its control.

(b) A supplier of water shall submit to the Department an annual report that identifies for each well and wellfield under its ownership and control the presence of new land uses within the Zones I, II and III, or within the Interim Wellhead Protection Area, that could adversely impact water quality. The annual reports shall be submitted on Department approved forms by January 31 for the preceding calendar year. The annual reports shall be submitted to the Department's Office of Water Supply at the Regional Office that serves the area where the well, wellfield, or spring is located.

(c) A supplier of water shall notify the local board of health or health department within 48 hours of detection of any violation of a statutory or regulatory requirement that may adversely effect its water supply or distribution system, and shall notify the inspector of buildings, building commissioners or local inspector, or the person charged with enforcement of local zoning and nonzoning controls, within 48 hours of detecting any violation of applicable land use restrictions that may adversely effect its water supply or distribution system. Such notices should include the following information:

1. the name of the person in violation;
2. the location where the violation is occurring;
3. the date when the violation was observed;
4. a description of the violation;
5. the legal citation of the requirement or restriction violated; and
6. a description of the actions necessary to remove or remedy the violation and the deadlines for taking such actions.

In addition, the supplier of water shall notify the Department's Office of Water Supply at the appropriate Regional Office upon giving any notice required by 310 CMR 22.21(4)(c).

(d) A supplier of water shall take appropriate action to determine whether the violation has been removed or remedied and shall notify the Department's Office of Water Supply at the appropriate Regional Office upon finding that the violation has been removed or remedied.

(5) Variations

(a) The Department may grant a variance from the requirements of 310 CMR 22.21(1)(e) to a proponent that, despite its best efforts, is unable to adopt one or more of the requirements set forth in 310 CMR 22.21(2)(a) and 310 CMR 22.21(2)(b) if the Department finds that strict compliance with such requirements would result in an undue hardship and would not serve to further the intent of 310 CMR 22.21.

22.21: continued

(b) The Department shall consider the following factors in making the finding necessary to grant a variance pursuant to 310 CMR 22.21(5):

1. the reasonableness of available alternatives to the proposed well, wellfield, or spring;
2. the overall effectiveness of existing land use controls and other protective measures on the proposed well, wellfield, or spring and any other water supply sources used by the supplier of water;
3. the nature and extent of the risk of contamination to the proposed well, wellfield, or spring that would result from the granting of the variance; and
4. whether the variance is necessary to accommodate an overriding community, regional, state or national public interest.

These factors need not be weighed equally, nor must all of these factors be present for the Department to grant a variance. The presence of any single factor may be sufficient for the granting of a variance.

(c) A variance granted pursuant to 310 CMR 22.21(5) shall be conditioned on such monitoring or other requirements as the Department may prescribe.

(d) Requests for variances shall be made in writing and clearly state the provision or requirement from which the variance is sought and the reasons and facts that support the granting of a variance, and shall include an evaluation of the reasonableness of alternatives to the proposed well, wellfield, or spring.

(e) Within 14 days of filing a request for variance under 310 CMR 22.21(5)(a), the person filing the request shall notify persons served by the supplier of water by direct mail and by publication on not less than three consecutive days in a newspaper of general circulation in the service area of the supplier of water. The notice shall include:

1. the provision or requirements from which the variance is being sought;
2. the identity of the proponent of the well, wellfield, or spring;
3. the identity of the person requesting the variance, the address where a copy of the request for variance will be available for public inspection, and the times it will be available; and
4. a statement that the Department will receive written comments concerning the request from the public for a 30 day period commencing on the last date of newspaper publication.

(f) Each person submitting a request for variance shall submit to the Department a copy of the public notice required by 310 CMR 22.21(5)(e) and affidavits attesting to the fact that the notices have been given. The Department will receive written comments concerning the request from the public for a 30 day period commencing on the last date of newspaper publication.

(g) Within 30 days of the close of the comment period, each person requesting a variance under 310 CMR 22.21(5)(a) shall respond in writing to all reasonable public comments received by the Department.

(h) The Department may schedule a public hearing on any request for variance submitted in accordance with 310 CMR 22.21(5) if it determines on the basis of the public comments received that such a hearing is in the public interest. In the event that the Department schedules a hearing, the person filing the request shall notify persons served by the supplier of water of the hearing by publication on not less than three consecutive days in a newspaper of general circulation in the service area of the supplier of water. In addition, the person filing the request shall notify each person who submitted written comment concerning the request to the Department by direct mail. The person filing the request shall submit to the Department a copy of the public notices required by 310 CMR 22.21(5)(h), and an affidavit attesting to the fact that the notices have been given, prior to the hearing. Persons filing a request for a variance under 310 CMR 22.21(5) shall pay the full the cost of all notifications and public hearing scheduled.

(i) Within 30 days of the grant of a variance under 310 CMR 22.21(5), any person that receives a variance shall notify persons served by the supplier of water of the granting of the variance, including any conditions imposed by the Department, by direct mail and by publication on not less than three consecutive days in a newspaper of general circulation in the service area of the supplier of water. The person that receives the variance shall submit to the Department a copy of the public notices and an affidavit attesting to the fact that the notices have been given upon completion of the public notification.