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Bureau of Resource Protection
Title 5 / Drinking Water Programs
Zone I Policy

Effective Date: August 4, 1998 Policy No. BRP/DWM P99-2

Program Applicability: BRP/DWM/ (Boston & regions)

Supersedes Policy No.: None

Regulation Reference: 310 CMR 15.211(2) and 310 CMR 22.21(3)(b)

Approved by: Glenn Haas, Director, Division of Watershed
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Purpose: This policy explains the Bureau's position on existing on-site subsurface sewage disposal systems (Title 5 systems), with design flows under 10,000 gpd, that are located in the Zone I of a public water supply well.

Applicability: The document provides guidance to the Department, particularly, Title 5 and Drinking Water Programs, Public Water Suppliers and Boards of Health.

Text: As follows.

**Bureau of Resource Protection
Title 5 / Drinking Water Programs**

Document Title: On-site sewage treatment and disposal systems located in the Zone I of a public water supply well

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310 CMR 15.211(2) and 310 CMR 22.21(3)(b)

Purpose

This policy explains the Department's position on existing on-site subsurface sewage disposal systems* ("Title 5" systems), with design flows under 10,000 gallons per day, that are located in the Zone I** of a public water supply well.

Background

The Department's Drinking Water Regulations, at 310 CMR 22.21(3)(b), require, generally, that the Zone I of a public water supply well be owned or controlled by the water supplier. This section of the regulations further provides that "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."

Similarly, Title 5, 310 CMR 15.211(2), states: "No system shall be constructed within a Zone I of a public water supply well or wellfield. No system shall be upgraded or expanded within a Zone I of a public water supply or wellfield unless a variance is granted pursuant to 310 CMR 15.410 through 15.415."

With respect to existing Title 5 systems located within a Zone I, under the Title 5 failure criteria, a cesspool or privy located within a Zone I automatically is a failing system. See 310 CMR 15.303(1)(b). A failing system triggers the upgrade requirements of Title 5.

* "On-Site Subsurface Sewage Disposal System," is defined in Title 5, 310 CMR 15.002 as: "A system or series of systems for the treatment and disposal of sanitary sewage below the ground on a facility....These terms also include tight tanks, shared systems and alternative systems. Unless the text of 310 CMR 15.000 indicates otherwise, these terms also include nonconforming systems."

Under Title 5, the term "nonconforming system" includes, but is not limited to: "cesspools, privies, failed systems...."

** Title 5, 310 CMR 15.002, defines "Zone I" as: "The protective radius required around a public water supply well or wellfield, as defined in Massachusetts drinking water regulations, 310 CMR 22.02. For public water supply system wells with approved yields of 100,000 gpd or greater, the protective radius is 400 feet. Tubular well fields require a 250 protective radius. Protective radii for all other public water system wells are determined by the following equation: Zone I radius in feet = [150 x log of pumping rate in gpd] - 350."

Relative to systems consisting of a septic tank and soil absorption system that are located within a Zone I, Title 5 provides that such systems fail, unless "the local approving authority in its professional judgment, with the concurrence of the public water supplier if any, determines the system is functioning in a manner to protect public health and safety and the environment." This determination, if made, must be based on certain criteria specified in section 310 CMR 15.303(1)(c) of Title 5.

Problem

Based on information available to the Department, it is likely that there are over four hundred septic systems in Zone Is of public wells. Additionally, in many of these instances, the water supplier does not own or control the Zone I.

Approach

1. When a Title 5 system is located within the Zone I of a public water supply well, the owner of the public water supply also owns or controls the portion of the Zone I in which the system is located, and even if the system is not failing as determined under 310 CMR 15.303, if feasible, the system must be removed from the Zone I; unless, pursuant to 310 CMR 22.21(3)(b), the owner of the public water supply demonstrates to the satisfaction of the Drinking Water Program (DWP) that the system has no significant impact on water quality.

To remove the system from the Zone I, if feasible, the facility served by the system must be connected to a sewer. If a sewer connection is infeasible, then the system must be relocated/upgraded outside of the Zone I. If this is not feasible, then the steps in paragraph 2(b), below, apply.

2. If a system located in a Zone I is inspected and deemed to be failing in accordance with the Title 5 failure criteria in 310 CMR 15.303, then:
 - a) if feasible, the system must be removed from the Zone I. If a sewer connection is feasible, the facility must be connected to the sewer. If a sewer connection is not feasible, then the system must be relocated/upgraded outside of the Zone I.
 - b) If it is not feasible to connect to a sewer or to remove the system from the Zone I, then with a Title 5 variance granted under 310 CMR 15.211(2), the system must be upgraded to a fully complying Title 5 system.^{***} If a fully complying Title 5 system is not feasible, then the system must be upgraded with a Title 5 variance granted under 310 CMR 15.211(2), and under a local upgrade approval. If this is not feasible, then the system must be upgraded with additional Title 5 variances, as appropriate.

^{***} For purposes of this policy, a "fully complying Title 5 system" is either a conventional or an innovative/alternative system, designed, approved, and constructed in compliance with 310 CMR 15.000, provided that no variance, other than as required by 310 CMR 15.211(2), or local upgrade approval, is required.

If the applicant cannot satisfy the Title 5 variance criteria for the upgrade and if there is no other feasible alternative, then a tight tank would have to be installed in compliance with 310 CMR 15.260.

Where the owner of the public water supply also owns or controls the Zone I, then a system upgrade or a tight tank within the Zone I also would require the prior approval of the DWP under 310 CMR 22.21(3)(b).

3. There may be no increase in design flow to any Title 5 system located in the Zone I of a public water supply well. Under Title 5, for most residential uses, an increase in design flow occurs when a bedroom is added. For other types of uses - e.g. a restaurant, an increase in flow would occur with the addition of seats. Reference should be made to the system sewage flow design criteria in Title 5, 310 CMR 15.203, to determine how an increase in flow is calculated for a particular type of use.
4. When a Title 5 system is located in a Zone I, where the owner of the public water supply does not own or control the portion of the Zone I in which the system is located, and, if, based on an inspection in accordance with 310 CMR 15.303, the system is determined to be functioning in a manner to protect the public health, safety and the environment, then replacement of the system will not be required automatically.

Conclusion

This policy explains certain minimum requirements that apply to a Title 5 system located in a Zone I. In addition to the above, the Department and Boards of Health, generally, should encourage resolutions that would result in the removal of a system from a Zone I, or, if this is not feasible, enhanced treatment.

Notwithstanding the above, on a case by case basis, the Department and local Boards of Health have the authority to require the inspection and/or upgrade of any system in accordance with their respective authority under applicable law including, without limitation, 310 CMR 22.00, 310 CMR 15.000 and G.L. c.21, §§26 through 53.