

DISTRICT HEALTH DEPARTMENT NO. 2
Environmental Health Division
Internal Guidance

Program: Water Supply Program

From: Douglas W. Getty, Environmental Health Director
District Health Department No. 2

Subject: Well Casing Depth Less Than 25 Feet

Date: July 8, 1998; Revised: March 8, 2001; Revised: March 1, 2011

Background

District Health Department No. 2 encompasses the counties of Alcona, Iosco, Ogemaw and Oscoda. Within its political divisions exists vast differences in the geological formations with respect to the depths of groundwater and more specifically, the depth to which potable drinking water can be obtained through the installation of drinking water wells.

Act 368, P.A. 1978, Part 127, as amended, in R325.1632 (3) states: "A well casing shall not extend less than 25 feet below, and terminate not less than 12 inches above the ground surface. A well that has less than 26 feet of casing shall not be used without obtaining written approval from the health officer pursuant to the provisions of R325.1613."

R325-1613 (1) states: "A health officer, in the discharge of his or her duty to protect the public health, may issue a deviation from the provisions of specific rules as provided for in this rule, if the spirit and intent of these rules are observed and the public health, safety and welfare are assured."

Furthermore, R325.1613 (2) (e) states: "The provisions of R325.1632 (3) may be deviated from to permit a well casing to extend less than 25 feet below the ground surface if there is reason to believe that potable water of suitable quality does not exist at a reasonable depth of more than 25 feet and if either of the following conditions exist.

- (i) The distance between the well and a potential or known source of contamination is increased pursuant to the provisions of subdivision (b) (ii) of this sub-rule.
- (ii) A confining layer is present above the aquifer that will be used by the shallow well."

Internal Guidance

Therefore, the following internal guidance for District Health Department No. 2 is in effect with regard to the installation of new private water wells in areas where potable water is not found at depths greater than 25 feet below the ground surface. Such wells shall be subject to the following:

1. Casing depth 24-20 feet
 - a) The minimum isolation distance between the water well and any known or future source of contamination shall be 50 feet with a minimum of 5 feet of continuous protective overburden, or
 - b) The minimum isolation distance the water well and any known or future source of contamination shall be increased to 75 feet without an available protective overburden; or

- c) An equivalent combination of:
 - i. increase horizontal isolation, and
 - ii. protective overburden, e.g. clay, and
 - iii. hydrogeology information demonstrating protection; e.g. groundwater flow direction
 - vi. reduced contamination based on an alternative on-site sewage treatment systems, or alteration to the SDS, e.g. increase isolation to Seasonal High Water Table (SHWT) or improved effluent quality such as with a double compartment tank and effluent filter
2. Casing depth 19-15 feet
- a) The minimum isolation distance between the water well and any known or future source of contamination shall be 75 feet minimum with a minimum of 5 feet of protective overburden; or
 - b) The minimum isolation distance between the water well and any known or future source of contamination shall be increased to 100 feet without an available protective overburden; or
 - c) An equivalent combination of:
 - i. increased horizontal isolation, and
 - ii. protective overburden, e.g. clay, and
 - iii. hydrogeology information demonstrating protection; e.g. groundwater flow direction
 - iv. reduced contamination from alternative on-site sewage treatment systems, or alteration to the SDS, e.g. increase isolation to SHWT or improved effluent quality such as with a double compartment tank and effluent filter
3. Casing depth of 12 to 15 feet
- a) The minimum isolation distance between the water well and any known or future source of contamination shall be at least 50 feet regardless of geology.
 - b) Water shall not be used for human consumption and shall be considered non-potable.
 - c) This non-potable well shall not be connected to any plumbing fixture unless allowed by the plumbing code official having jurisdiction.
 - 1) Property owner shall post at the water well and any water outlet a permanent sign indicating that the water supply is not approved for human consumption.
 - 2) Property owner shall obtain a safe potable water supply for consumption purposes which shall be approved by the health officer. An approved hauled water system or bottled water are examples of a safe, potable water supply.
 - d) Owner shall file with the Register of Deeds an attachment or an amendment addendum to the property's deed advising all future owners of this property that a deviation has been issued and restriction(s) apply to this water supply with respect to isolations, non-consumption, and non-potability. A copy of the deed attachment or addendum shall be provided to the health department.
 - e) Owner of the property shall provide to the health department a letter holding harmless District Health Department No. 2 for any existing or future water quality problems or health problems associated with the water well and/or water supply.
4. Water wells with a casing depth of less than 12 feet below grade shall not be allowed without written permission of the Health Officer.

5. Nitrate samples shall be required prior to approval of the deviation. The property owner shall be responsible for collection of all required water samples and advised of the results by the health department.
6. All private water supplies with a casing less than 25 feet in depth, from the ground surface, need to be sampled annually by the well owner for nitrates and coliform bacteria to assure that water quality does not degrade to an unsatisfactory level.
7. This guidance document shall not restrict the health officer from using other information or technology to either increase or decrease the requirements for the construction of new wells with less than 25 feet of casing below grade.
8. Prior to issuance of a deviation under this guidance document, a reasonable attempt shall be made to obtain a water well from a depth complying with the Rules. A reasonable attempt shall be considered to be an attempt to construct a well with acceptable quality and quantity to a depth known to or believed to contain an aquifer; or obtaining information that such an attempt has been made within the vicinity.
9. A geologist or other groundwater professional may present information on hydrogeologic conditions to support a decision to allow a deviation on casing depth and a reduction in the isolation specified in this document. See Attachment "A" for procedures to follow.
- 10 Any deviation in casing depth may require an advisory not to fertilize the lawn or add other chemicals to the environment within 50 feet of the water well.

Information used in making the determination to require a reasonable attempt shall include well records or other written information in the vicinity of the proposed well. Vicinity shall mean within a quarter mile. Applicable written information needs to identify an aquifer as having a reasonable probability of being encountered.

Quality issues should pertain primarily to anionic compounds such as nitrates and chlorides that are not removable through traditional cation exchange units (i.e. water softeners). Nitrate levels above 10mg/l and chloride levels above 500mg/l should be considered sufficiently objectionable. Contamination issues shall be considered under the provision of the local sanitary code.

Quantity of water is subjective and dependent on prospective use. For the purpose of household use a quantity of less than 2 gallons per minute (gpm) should be considered non-sufficient. An adequate storage system may be considered to meet domestic needs for quantities between 1 gpm and 2 gpm.

Wells First

In all cases where a deviation is requested for well casing less than 25 feet in depth for a residential water well for construction of a new residence the health department shall require that the water well be constructed prior to issuance of a construction permit for the on-site sewage disposal system. This provision shall ensure that:

- a. an adequate supply of water may be obtained with respect to quantity and quality
- b. the site is suitable for construction of a residence for on-site water supply and on-site sewage disposal systems

- c. adequate horizontal isolation may be obtained for the water well
- d. the water well is otherwise in compliance with the well construction code

Final Inspection

In all cases where a deviation is granted under this Internal Guidance document the health department shall conduct a final inspection of the water supply to determine compliance with the well construction code and all conditions required by the written deviation issued by the health department.

March 1, 2011
Reviewed and approved by WSAC