

ARCHIVE: Archived because revisions made to VAP rules in 2002 in OAC Chapter 3745-300 necessitate revisions to this guidance. However, this document is accurate under the 1996 VAP rules. Refer to VA30010.03.001 for the updated document.

TITLE: Comparison of a Saturated Zone to Another Saturated Zone to Determine that the Zone does not meet the Criteria of Class A Ground Water

DATE EFFECTIVE: 2000

KEYWORDS: ground water, classification, yield, comparison of zones

RULES: VAP rule citation related to this issue: OAC 3745-300-10 (C)(2)(b)(iii) and OAC 3745-300-07(D)(6)(f)

QUESTION: How is a ground water zone that yields between 0.1 gallons per minute and 3 gallons per minute compared to the yield of another saturated zone [OAC 3745-300-10(C)(2)(b)(ii)] to determine whether the ground water classification of the first ground water zone does not meet the criteria of Class A ground water?

BACKGROUND: Any ground water zone that has a total dissolved solids content of less than 3000 mg/l, is not being used as a source of drinking water within ½ mile of the property boundary, and has yield between 0.1 gallons per minute and 3 gallons per minute may be classified as either a Class A or a Class B ground water; the classification is dependent on the comparison of the yield of this zone to the yield of another saturated zone which also underlies the property. To be considered Class B, the ground water zone of interest must be compared to another ground water zone underlying the property that: (1) has at least twice the yield of the ground water zone of interest, (2) is present beneath the property and (3) is a likely source of drinking water within one mile of the property [OAC 3745-300-10(C)(2)(b)(ii)]. The yield of the zone used for comparison should be based on the lowest yielding well within one mile of the property; if there are no wells within one mile of the property, Ohio Department of Natural Resources (ODNR) Ground Water Resource Maps can be used [OAC 3745-300-07(D)(6)(f)].

ANSWER: In order to determine that the ground water zone falls below the criteria of Class A ground water by comparing it to another saturated

zone beneath the property, several pieces of information need to be verified concerning the zone that is being used for comparison. As indicated in the background section, the rule specifies that the zone used for comparison must be:

- Another saturated zone;
- Present beneath the property;
- Of a yield of at least two times greater than the ground water zone being classified; and
- A likely source of drinking water within one mile of the property boundary.

Another saturated zone: The volunteer needs to demonstrate that the two zones are distinctly different. For example, if the ground water zone being classified is at the bedrock/unconsolidated interface, and the zone used for comparison is deeper in the bedrock, then the volunteer would need to demonstrate that these two zones are distinctly different by demonstrating they are hydraulically separated. Zones may be considered as separate zones if they are distinctly different, such as saturated clayey tills above a sand aquifer.

Present beneath the Property: The volunteer must demonstrate that the zone used for comparison is present beneath the property. The best evidence of this is to have borings/wells installed into the saturated zone. However, the rules allow for the use of the ODNR Ground Water Resource Maps if no wells are present within 1 mile of the property. When utilizing the maps, best professional judgement should be used to assess whether the zone is present beneath the property. For example, if the property falls within an area described on the ODNR map as low yielding, and/or dry holes are common, then it should not be assumed that the zone is present beneath the property. Likewise, if the locations of well logs are within a saturated zone that is not beneath the property which is the subject of the voluntary action (e.g., property borders a buried valley aquifer) it should not be assumed that the zone is present beneath the property. In these cases, borings/wells may be necessary to show that the ground water zone is present beneath the property.

Of a yield of at least two times greater: The yield of the zone used for comparison must be based on the lowest yield of any wells within one mile of the property. Therefore, the Volunteer should review the yield data stated on the well logs for wells located within one mile of the property boundary. If no wells are present, then the Ohio Department

of Natural Resources (ODNR) Ground Water Resource Maps can be used to determine yield of the saturated zone [OAC 3745-300-07 (D)(6)(f)]. Both the description provided for the zone and the yields should be evaluated. For example, if the ODNR map describes the zone as low yielding and the lowest value cited is less than twice the yield of the ground water zone being classified, then it cannot be assumed that the ground water zone used for comparison is twice as much as the zone being classified.

A likely source of drinking water within one mile of the property boundary: For example, if the ground water is not being used as a source of drinking water within 1 mile of the property boundary and regional information indicates that the water is low yielding and brackish, then it should not be assumed that it is a likely source of drinking water.

SUMMARY:

When making the determination that a ground water zone that yields between 0.1 gallons per minute and 3 gallons per minute can be classified as a Class B zone, the volunteer needs to provide adequate documentation that the zone used for comparison is beneath the property, has twice the yield, and can be used for potable purposes. If insufficient regional data exist to document that the zone can be used for comparison, the volunteer may wish to install wells and conduct field tests to determine the yield and quality of the ground water zone being used for comparison. Please note that unless adequate documentation can be provided to assume this zone meets UPUS, wells would be needed. (SEE TDC VA30010.98.007 (FAQ 6)),

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For any questions concerning this issue please contact the Division of Drinking and Ground Waters (Lisa Koenig, Sydney Poole or Jeff Patzke) at (614-644-2752) or VAP central office at (614) -644-2924.